Shingle Creek Watershed Management Commission

West Mississippi Watershed Management Commission

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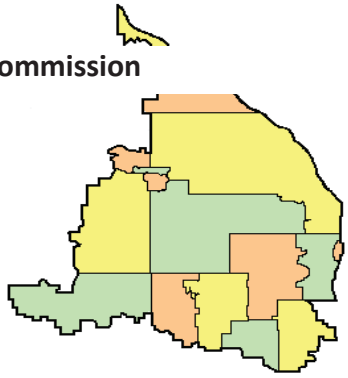


Technical Advisory Committee
MINUTES | November 9, 2023

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 11:30 a.m., Thursday, November 9, 2023, at the Plymouth Community Center, 14800 34th Avenue North, Plymouth, MN.

Present: James Soltis, Brooklyn Center; Mitchell Robinson, Brooklyn Park; Heather Nelson, Champlin; Mark Ray and Ben Perkey, Crystal; Derek Asche, Maple Grove; Nick Macklem, New Hope; Amy Riegel, Plymouth; Richard McCoy, Robbinsdale; Todd Shoemaker, and Katie Kemmit, Stantec; and Judie Anderson, JASS.

Not represented: Minneapolis and Osseo.

Also present: Andy Polzin, Plymouth.

I. Motion by Robinson, second by Riegel to **approve the agenda**. *Motion carried unanimously.*

II. Motion by Soltis, second by Macklem to **approve the minutes*** of the August 10, 2023, meeting. *Motion carried unanimously*.

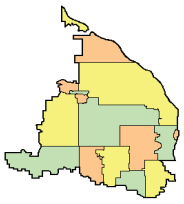
III. EAGLE LAKE SUBWATERSHED ASSESSMENT (SWA). In their presentation, Staff provided an overview of the Eagle Lake SWA project selection and prioritization process**.** The goal of the SWA is to evaluate stormwater management and in-lake management options to address excess phosphorus impacting Eagle Lake's water quality. In this project Staff seeks to:

1. Identify and prioritize potential stormwater management practices to reduce phosphorus and sediment loading in the Eagle Lake subwatershed, and

2. Evaluate sediment phosphorus and aquatic vegetation within Eagle and Pike Lakes to determine appropriate in-lake treatment practices to reduce internal loading.

Based on the 2019 5-year TMDL update, efforts to restore water quality in Eagle Lake, located in the cities of Maple Grove and Plymouth, will require improvements in loading from the watershed, from upstream lakes, and from in-lake sediments. Staff's October 28, 2023, memo* summarizes watershed load reductions to Eagle Lake. Internal phosphorus loads and potential internal load reductions for Eagle Lake and Pike Lake were discussed at the Commission's August meeting.

The Eagle Lake TMDL specifies that phosphorus loads need to be reduced by 202



lbs/yr total from all sources to Eagle Lake. The internal loading sediment analysis for this project estimated a 164 lbs/yr reduction with aluminum sulfate (alum) treatment in Eagle Lake, leaving an additional 38 lbs/yr reduction from external sources in order to meet the TMDL goals and attain water quality standards. The TMDL assumes that upstream lakes already meet water quality goals. Therefore, this would likely require implementation of at least two watershed projects to meet the needed reductions.

Staff evaluated existing total phosphorus loading rates to Eagle Lake and identified 30 locations for potential projects. These initial projects were reduced to seven sites for prioritization based on location on public land, suitable soils for infiltration, and feasibility given local conditions and infrastructure. They include infiltration, stormwater collection and reuse for irrigation, iron-enhanced sand amendments to existing basins, and manufactured treatment devices.

ID1. Infiltration Basin in Eagle Woods Park.

ID2. Harvest Reuse Cistern and Infiltration Basin at Middle School.

ID3. Middle School Irrigation Pond Retrofit.

ID5. IESF Retrofit and Expansion in Existing Stormwater Wetland , Hemlock and E. Fish Lake Road.

ID7. Harvest Reuse Cistern and Infiltration Basin at Elementary School.

ID8. IESF Retrofit in Existing Stormwater Pond adjacent to Fire Station.

ID9. Distributed MTD's at seven locations.

The seven potential projects were evaluated and prioritized though a ranking system using estimated TP reduction, initial project cost, and lifecycle cost. The two top ranked projects are an infiltration basin in Eagle Woods Park (ID1) and an iron-enhanced sand filter bench retrofit and pond expansion in an existing stormwater basin at Hemlock Lane and East Fish Lake Road (ID5)

	Eagle Woods Park	Hemlock Lane
TP reduction	21.8 lbs/yr	9.3 lbs/yr
Construction cost	$470,000	$218,000
30-year lifecycle cost	$498,000	$255,000
Lifecycle	$761 per lb TP/yr	$886 per lb TP/yr

It was noted that the Commission's 2024 CIP includes $170,000 for a Lake Internal Load Project for Eagle/Pike lakes.

Motion by Reigel, second by Ray to recommend to the Shingle Creek Commission that Staff move forward with 30% design for the infiltration facility in Eagle Woods Park contingent on positive public input. Lacking positive input, Staff are directed to proceed with the Hemlock Lane project. *Motion carried unanimously.*

IV. GAULKE POND SUBWATERSHED ASSESSMENT (SWA). The Commission requested Stantec to evaluate opportunities to reduce stormwater runoff volume to Gaulke Pond in Crystal. In their

presentation* Staff showed the history of development in the subwatershed dating from 1856. The impacts of development have resulted in (1) loss of native vegetation (reduced infiltration), (2) increased impervious areas (increased stormwater runoff), (3) increased watershed area (increased runoff volumes), and (4) increased fill (loss of flood storage capacity).

City and field viewing of sites eliminated all but nine parcels and street right-of-way as project site opportunities. At the August meeting, the final eleven best management practices (BMPs) were presented. Opportunity A2, the Colorado Avenue Infiltration Trench, was selected by the TAC and the Commission as the preferred alternative and Stantec was authorized to proceed with development of 30% design plans.

The plans attached to Staff's November 2, 2023, memo* show the potential BMP layout within the Colorado Avenue right-of-way and associated details. The design provided is a three-sided 6- by 6-foot concrete box culvert, however, a bid alternative using corrugated polypropolyne (PP) pipe chambers, similar to the ADS StormTech chambers installed on Kentucky Avenue is also included. If PP chambers are acceptable to the City of Crystal's public works staff, this may offer an opportunity to reduce overall implementation costs.

The design to date is reliant on Minnesota Department of Natural Resources LiDAR topography, City GIS data, and generalized soils information. If the TAC recommends to the Commission to proceed with 60% design, while out of scope, Staff recommend collecting detailed topography and utility information, as well as completing a more thorough geotechnical evaluation of the underlying soils to confirm stability of the nearby city reservoir. Staff also recommend that the City request that the project be included in the Commission's CIP.

Motion by Robinson, second by Macklem to recommend to the Commission acceptance of the 30% design plans and authorization for Staff to proceed with the feasibility study. *Motion carried unanimously.*

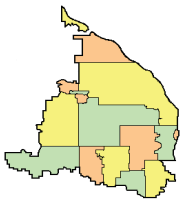
V. OTHER BUSINESS.

A. Storm Sewer Surcharge. Throughout 2023, Staff has reported on a new Minnesota Plumbing Board interpretation that significantly affects the design of storm sewer and, in turn, overall site designs. Staff reported that the Plumbing Board recently determined that an inlet pipe that is above the water level attained by the water quality volume, calculated per MPCA guidelines, is designed in such a way so as to both meet accepted engineering practices and be of such a character as to secure the results sought to be obtained by the MN Plumbing Code. Therefore, storm sewers designed so that the inlet pipe enters above the water level attained by the water quality volume are not considered surcharged by design. This is a more favorable interpretation and will not as significantly affect overall site designs.

B. This is **Mark Ray's** last SCWM TAC meeting. Effective December 1, 2023, he will be employed by the City of Burnsville.

C. The **next TAC meeting** is scheduled for Thursday, December 14, 2023, at 11:00.

There being no further business, the TAC meeting was adjourned at 11:54 a.m.



Respectfully submitted,

Judie A. Anderson
Recording Secretary
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