

3235 Fernbrook Lane N • Plymouth, MN 55447
Tel: 763.553.1144 • Fax: 763.553.9326
Email: judie@jass.biz • Website: www.shinglecreek.org

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, July 23, 2020. This will be a virtual meeting.** To join the Zoom Meeting: <https://us02web.zoom.us/j/87659246193>

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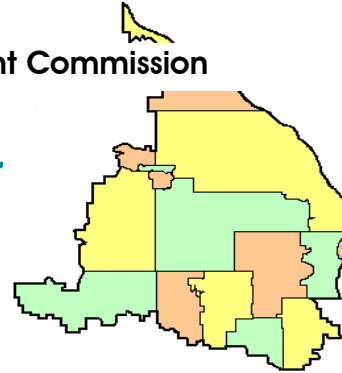
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Meeting ID: 876 5924 6193

AGENDA

1. Call to Order.
 - a. Roll Call.
 - b. Approve Agenda.*
 - c. Approve Minutes of Last Meeting.*
2. Project Review Fees.*
3. SRP Reduction Project: Data Year Two.
4. Filamentous Algae Strategy.*
5. Mississippi Riverbank Stabilization in Brooklyn Park.
6. Meadow Lake Drawdown Project Update.
7. Other Business.
8. Next TAC meeting is scheduled for 8:30 a.m., Thursday, August 20, 2020.
9. Adjournment.

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MINUTES
June 25, 2020

A virtual 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 8:30 a.m., Thursday, June 25, 2020.

Present were: Mitch Robinson, Brooklyn Park; Mark Ray, Crystal; Derek Ashe, Maple Grove; Megan Hedstrom, New Hope; Ben Scharenbroich and Amy Riegel, Plymouth; Richard McCoy and Marta Roser, Robbinsdale; Ed Matthiesen, Diane Spector, and Eric Megow, Wenck Associates, Inc.; and Judie Anderson and Amy Juntunen, JASS.

Not represented: Brooklyn Center, Champlin, Minneapolis, and Osseo.

Also present: Karen Jaeger, Maple Grove.

- I. Motion by Ashe, second by Ray to **approve the agenda**. * *Motion carried unanimously.*
- II. Motion by Ray, second by Ashe to **approve the minutes*** of the May 28, 2020 meeting. *Motion carried unanimously.*
- III. **Project Review Fees.***

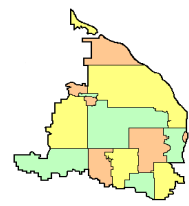
The members of the TAC and the Commissioners are interested in reviewing the fee schedule to ascertain that it covers the cost of project reviews and that the fees are in line with those of other joint powers WMOs in the area. The existing fee schedule was last updated in 2014 and reviewed in 2018, at which time the Commission voted to not revise the schedule. In 2018 the review fees were adequate to cover the costs overall, but in 2019 they were not.

Ashe provided an update of the Elm Creek Commission's progress in revising and updating its application and fee schedule. It was noted that the Elm Creek Commission is generally based on size, with a flat rate per acre. The Bassett Creek Commission is generally based on flat amounts, with a base rate and other flat add-on rates for special analyses.

McCoy emphasized the resultant schedule should be in a format that is easy to follow. Ashe responded that that may depend upon the types and elements of the projects submitted. Spector proposed that members continue to monitor progress in Elm Creek.

IV. HUC 8 Model.

Megow provided a presentational update of the hydrologic model with figures and preliminary results. The preliminary results included 24-hour and 48-hour Atlas-14, 100-yr (1% Chance) storm events. The preliminary results showed that the 48-hr event resulted in slightly higher water levels showing that



additional 7-day and 10-day duration storm events need to be investigated to determine the watershed-wide critical storm event.

The 7-day and 10-day storm events, along with calibration storm events from June 2014 and September 2018, will be completed in July and draft results for the hydrologic model will be sent out to the cities and DNR for review

One area where the preliminary storm event showed large increases from existing FEMA Base Flood Elevations (BFEs) is in the Memory-Gaulke-Hagemeister pond system. Wenck will work with Mark Ray and the City of Crystal to determine the modeling assumptions are consistent with their pump operations and as-built/survey information.

V. Crescent Cove Cost-Share Project.*

The City of Brooklyn Center has forwarded a Partnership Cost Share application for \$50,000 from Stephen Mastey on behalf of Crescent Cove, a children's respite care and hospice facility on the north end of Upper Twin Lake. Improvements to the site including a play space, gardens, and native buffer were reviewed as part of project review SC2020-005 at the June Commission meeting.

Projects adjacent to public waters or wetlands or within the floodplain require a mandatory Commission review. While the overall project minimally increases impervious area, the applicant is incorporating voluntary BPMs that will have water quality or habitat benefit. The project includes two pretreatment sumps to treat runoff from the drive and parking lot and part of the roof. The applicant also proposes to create new runoff storage in a Tire Derived Aggregate infiltration system below the new play area. Finally, the current turf grass adjacent to the wetland and channel along the east side of the property will be replaced with a new native plant buffer and a pollinator garden that will also treat runoff from the site. The turf is difficult to maintain because it is located within the floodplain of Upper Twin Lake.

While generally in favor of approving the cost-share, the members requested some sort of engineering plans and details as well as more information regarding potential pollutant load removals in time for the July Commission meeting.

Motion by Ray, second by Riegel to recommend to the Commission approval of this project at the requested amount. *Motion carried unanimously.*

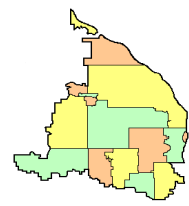
VI. Other Business.

A. Eagle Lake Golf Course.

On June 2, 2020, Brian Vlach, Three Rivers Park District, forwarded to Matthiesen a copy of the Eagle Lake Golf Course Water Reuse Feasibility Study. Vlach was inquiring whether this project would qualify for some financial support from the Shingle Creek Commission as a City CIP item or some other special project funding source?. He stated that the Park District would also pursue grant funding for the project. The project would reduce ground water use and phosphorus loading as well as increase storage depth in the existing pond. It was a consensus of the members that the TAC would consider this project dependent upon submittal of a proposal for the work and quantification of benefit to the watershed.

B. Proposed Robbinsdale Centralized Water Treatment Plant.

McCoy discussed the site for the proposed Water Treatment Plant (3648 Lee Avenue North) with respect to stormwater issues. The size of the site falls below the threshold for review by the Commission. Existing storm sewer at the site flows into an excavated holding basin at the rear of the site



together with runoff from the development to the south (Lee Square Apartments). Any stormwater collected in the basin infiltrates so there is no discharge from the site.

The proposed stormwater design will continue the use of this basin (modified in shape and position to allow construction of the new plant) so there will remain no discharge from the site. A new drinking water well will be located on the WTP site and will be approximately 400 feet away from the basin.

Drainage analysis performed by the City's Consultant indicates that the 100 year storm will be retained in the basin. A double ring infiltrometer test conducted in the native subgrade soil on the WTP site indicated an infiltration capacity of 36" per hour although the drainage calculations used a rate of 5" per hour. The plans for the water treatment plan are currently out for bid.

C. Filamentous Algae.

Following alum treatments in Bass and Upper Twin lakes, some filamentous algae growth has been observed. Brian Vlach at Three Rivers Park District has experienced the same results, so it appears to be a regional problem. Meadow Lake experienced the same conditions after its drawdown. It may be related to the temperature at the time of the treatments. It is possible that a broader distribution of alum and wider coverage areas may help get ahead of the FA problem. Spector will contact University of Wisconsin Stout to expedite the spring core results. The fall lake alum treatment project is out for bid.

Staff have been looking at options for treating/living with filamentous algae in Twin Lake and will share their advice with the residents. They also want to create educational materials for lakeshore owners so that they understand what FA is and how to deal with it.

VII. Next Meeting.

The next Technical Advisory Committee meeting is scheduled for 8:30 a.m., Thursday, July 23, 2020. This also will be a virtual meeting.

The meeting was adjourned at 9:29 a.m.

Respectfully submitted,

Judie A. Anderson
Recording Secretary
JAA:tim

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Technical Memo



Responsive partner.
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To: Shingle Creek/West Mississippi WMC TAC

From: Ed Matthiesen, P.E.
Diane Spector

Date: July 20, 2020

Subject: Project Review Fees

As we've previously discussed, as part of the 2021 budget process we looked at the project review fees to see if they are adequately covering costs. Tables 1 and 2 below compare the review fee received to the cost of performing the project review. That cost may also include meetings with developer's representatives, agencies, etc. While it often varies, especially in Shingle Creek, the review fee is not adequate to recapture all those costs.

Projects that are part of regional developments such as Arbor Lakes or northern Brooklyn Park along the 610 corridor tend to cost less to review because treatment and rate control are being provided as part of regional systems or multi-development systems and the review is less extensive. In four of those cases, the review fee exceeded the actual cost by more than \$1,000, but more typically where the fee exceeded the cost it was by less than \$500. On the other hand, in 2018-2019 in Shingle Creek there were eight reviews that cost more than the review fee by an average of \$350; and four that exceeded the fee by an average of \$2,200. There was no one reason why, but projects with floodplain impacts, stream crossings, or complicated, lengthy highway projects generally require more effort to review.

We've looked at what other joint powers organizations do for project review fees (and there aren't many). Basically, we see two options: continuing the same basic structure but tweaking to add fees for factors we know add complexity to the review; or charging the actual cost to conduct the review.

- 1) Continue current fee structure but increase fees across the board (see attached).
 - a. Consider add-on fees for more complex projects that include floodplain, wetland, and road crossing impacts.
 - b. Consider for linear projects have a higher fee for highway projects
- 2) Charge a base fee. When costs exceed the base fee, invoice another increment. Refund any balance >\$50-100 (the cost to process the check) when Applicant has completed all the conditions of approval.
- 3) Other

This is on the agenda for ongoing discussion and eventual recommendation to the Commissions.

CURRENT REVIEW FEES, Effective October 1, 2014

Project Fees		Current	Suggested
Single Family Lot		\$300	\$300
Single Family Residential Development, density less than 3 units per acre			
	Total Site <15 acres	1,500	1,800
	Total Site 15-29.99 acres	1,800	2,000
	Total Site ≥30 acres	2,500	2,500
All Other Development			
	Total Site <5 acres	1,700	1,800
	Total Site 5-9.99 acres	2,200	2,200
	Total Site 10-19.99 acres	2,200	2,500
	Total Site ≥20 acres	3,000	3,000
Variance Escrow		2,000	2,000
Street/Utility Project		1,100	1,100
County or state highway project			1,500
<i>Add-ons:</i>			
Projects with floodplain impacts			300
Projects with stream crossings			1,000

Table 1. Shingle Creek project review fees compared to actual costs.

2018	Project	Review Fee	Actual Cost	Under (Over)
SC2018-01	Crystal MAC Nature Area	1,100.00	837.00	263.00
SC2018-02	Arbor Lakes Business Bldg C & D	3,000.00	702.90	2,297.10
SC2018-03	The Village at Arbor Lakes	-	416.40	(416.40)
SC2018-04	Park 81	3,000.00	2,821.50	178.50
SC2018-05	Luther Mazda Mitsubishi	2,200.00	1,323.90	876.10
SC2018-06	Outdoor Storage and Impound	1,700.00	1,940.10	(240.10)
SC2018-07	Lower Twin Lake Boat Launch	1,700.00	1,096.20	603.80
SC2018-08	Arbor Lakes Business Park Streets	1,100.00	841.40	258.60
SC2018-09	Public Storage, Zachary Lane	-	193.40	(193.40)
SC2018-10	Waterwalk	1,700.00	1,728.90	(28.90)
SC2018-11	Arbor Lakes Industrial	2,200.00	2,197.60	2.40
SC2018-12	Becker Park	2,200.00	2,627.10	(427.10)
SC2018-13	Northland IV	2,200.00	3,010.20	(810.20)
	TOTAL 2018	22,100.00	19,736.60	2,363.40
2019	Project	Review Fee	Actual Cost	Under (Over)
SC2019-01	New Hope City Hall-North	2,200.00	2,508.40	(308.40)
SC2019-02	Rockford Road/I 494 Interchange	1,100.00	2,462.30	(1,362.30)
SC2019-03	Windsor Ridge	2,200.00	2,348.00	(148.00)
SC2019-04	CSAH 81	1,100.00	3,963.80	(2,863.80)
SC2019-05	Park Center High School	2,200.00	2,866.10	(666.10)
SC2019-06	Twin Lake N Parking Lot	1,700.00	4,247.10	(2,547.10)
SC2019-07	Silver Creek on Main Expansion	1,700.00	904.00	796.00
SC2019-08	The Woods at Taylor Creek	1,800.00	2,195.00	(395.00)
SC2019-09	Lake Road Apartments	1,700.00	3,744.80	(2,044.80)
SC2019-10	IBEW Local Union 292 Corp. Office	2,200.00	1,613.90	586.10
	TOTAL 2019	17,900.00	26,853.40	(8,953.40)

Table 2. West Mississippi review fees compared to actual costs.

2018	Project	Review Fee	Actual Cost	Under (Over)
WM2018-001	Urbana	2,200.00	1,916.40	283.60
WM2018-002	Coon Rapids Dam Regional Park	2,200.00	1,358.00	842.00
WM2018-003	Boulder Estates	1,500.00	1,952.90	(452.90)
WM2018-004	9001 Wyoming Ave N	3,000.00	1,203.80	1,796.20
WM2018-005	Champlin Park High School Addns	1,700.00	945.60	754.40
WM2018-006	Champlin Drive HyVee	-		-
WM2018-007	North Park Business Center	-	244.80	(244.80)
WM2018-008	Brooklyn Park- Champlin Interceptor	1,100.00	661.20	438.80
	TOTAL 2018	11,700.00	8,282.70	3,417.30
2019	Project	Review Fee	Actual Cost	Under (Over)
WM2019-001	Oak Village	2,200.00	1,515.60	684.40
WM2019-002	Emery Village	1,700.00	3,662.90	(1,962.90)
WM2019-003	610 Crossings 2 nd Addition Regional Pond	2,200.00	1,105.20	1,094.80
WM2019-004	Hwy 169 and 101 st Ave Interchange	1,100.00	1,467.00	(367.00)
WM2019-005	Data Recognition Center Addition	2,200.00	2,259.00	(59.00)
WM2019-006	Pemberly	2,200.00	3,240.50	(1,040.50)
WM2019-007	MCES Brooklyn Park-Champlin Interceptor Phase II	1,100.00	1,530.90	(430.90)
WM2019-008	North Park Business Center Building 3	2,200.00	3,195.00	(995.00)
WM2019-009	Coon Rapids Dam Regional Park Phase II	2,200.00	1,080.90	1,119.10
WM2019-010	Mississippi Crossing	1,700.00	2,470.70	(770.70)
	TOTAL 2019	18,800.00	21,527.70	(2,727.70)
2020	Project	Review Fee	Actual Cost	Under (Over)
WM2020-001	River Park Improvement	2,200.00	1,743.70	456.30
WM2020-002	CBPAMES Building Addns and Renovations	1,700.00	714.80	985.20
WM2020-003	Kurita	2,200.00	764.50	1,435.50
WM2020-004	610 Junction	2,200.00	1,731.20	468.80
WM2020-005	94 th Ave N	1,100.00	852.40	247.60
	TOTAL 2020	9,400.00	5,806.60	3,593.40

Filamentous Algae Fact Sheet

What are Filamentous Algae?

Filamentous algae are non-toxic, common aquatic plants that grow around the world. They are overall benign and an important part of the aquatic ecosystem. However, blooms can become a nuisance. In some cases, blooms can be so active that decay can reduce dissolved oxygen in the water column, posing a risk to fish and other aquatic life.

Filamentous algae blooms are masses of long, stringy, hair-like strands. Usually green in color, they may be yellow, grayish or brown. They grow on the surface of hard objects, but they can break loose and form floating mats. These algae are quite different than other common aquatic vegetation. These algae strands are made up of individual cells that are bound together to form the filaments. These cells take up nutrients directly from the water, not from the sediment through roots.

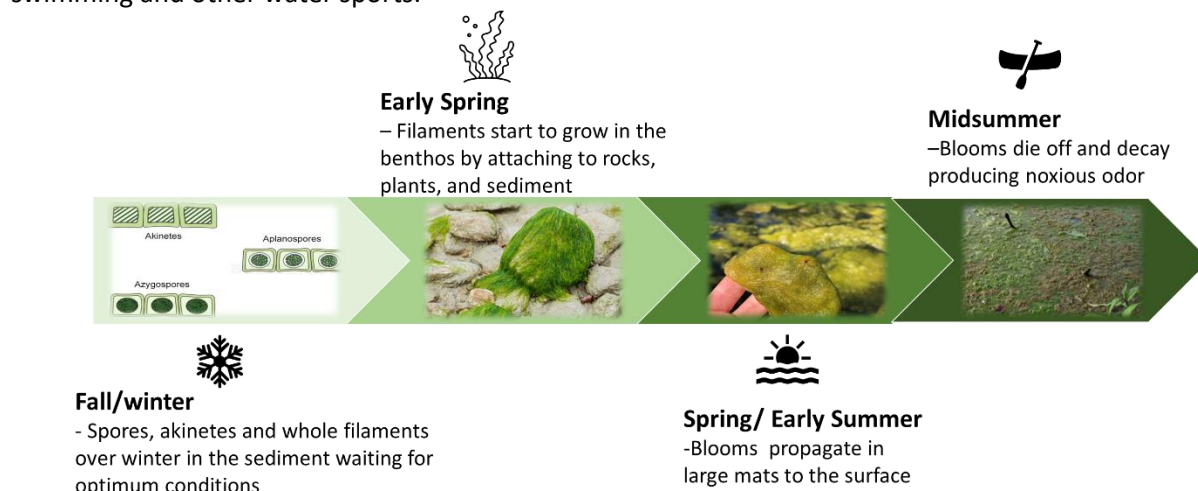


Filamentous algae (photo: MPCA).

Filamentous algae do have some benefits. They stabilize bottom sediments and provide food for waterfowl and cover for fish. Algae also support insects and other small aquatic animals, which are important foods for bluegills, small mouth bass, and largemouth bass.

When Filamentous Algae Become a Problem

Filamentous algae are *non-toxic*. However, that does not mean that they cannot negatively affect water quality. Mats of algae can limit how oxygen moves between the water and the air. They can cause shadows that prevent other photosynthetic organisms from growing. This can cause low-oxygen conditions that may lead to fish kills and bad odors. Large mats may also interfere with boating, swimming and other water sports.



Filamentous algae lifecycle (photo: BiologyWise)

Filamentous Algae Fact Sheet

Filamentous algae grow when clear water, underwater surfaces and high nutrients are available. A warm, early spring increases the potential for a filamentous algae bloom. These algae are often the first to capitalize on sunlight and nutrients because they are more tolerant of cooler spring temperatures than other types of submerged vegetation and algae.

How to Control Filamentous Algae

The first step to control filamentous algae blooms is to prevent or limit growth by limiting nutrients in the lake. After a bloom is established there are physical, biological, and chemical control options, many of which require a DNR permit. A combination of strategies may be necessary if the bloom is severe.

	Prevent Influent Nutrients	Physical	Chemical & Biological Applications
Strategies	<ul style="list-style-type: none"> Use smart fertilizer practices Contain yard and pet waste Plant native shoreline buffers 	Manual harvesting <ul style="list-style-type: none"> Raking Netting Automated harvesters	Commercial algaecide <ul style="list-style-type: none"> Copper sulfates Endothall Bacteria and enzyme additives
Application Effectiveness	Year-round nutrient control	<ul style="list-style-type: none"> Short term Small-scale Labor intensive 	<ul style="list-style-type: none"> Seasonal local control Multiple applications may be necessary Effective together with other strategies
Permits	Permit NOT required	Permit required <ul style="list-style-type: none"> Area > 2,500 sf Shore > 50 ft of shoreline Use of automated controls 	Permit required

Filamentous Algae Blooms Following Alum Treatments



Filamentous algae bloom (photo: MNDNR)

Spring filamentous algae blooms are not uncommon after lake nutrient management such as an alum treatment. Water clarity is increased, which allows more sunlight to filter through to the lake bottom. Typical alum treatments only target the deepest lake sediments. However, under the right conditions, phosphorus in spring runoff or early-season sediment release can kick start filamentous algal growth. Scientists and lake managers are experimenting with applying a light dose of alum in the shallow areas to try to limit this response. The Shingle Creek Watershed Management Commission will consider this approach on future alum treatments.