

MINUTES

December 13, 2018

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 11:05 a.m., Thursday, December 13, 2018, at the Clubhouse at Edinburgh USA, 8700 Edinbrook Crossing, Brooklyn Park, MN.

Present were: Andrew Hogg, Brooklyn Center; Todd Tuominen, Champlin; Mark Ray, Crystal; Derek Ashe, Maple Grove; Ben Scharenbroich, Plymouth; Richard McCoy and Marta Roser, Robbinsdale; Ed Matthiesen and Diane Spector, Wenck Associates, Inc.; Judie Anderson, JASS; and Laura Cummings, WSB Associates.

Not represented: Brooklyn Park, Minneapolis, New Hope, and Osseo.

Also present were: Harold E. Johnson, Osseo; and Andy Polzin, Plymouth.

- I. Motion by Ray, second by Hogg to **approve the agenda*** as revised. *Motion carried unanimously.*
- II. Motion by Ray, second by Scharenbroich to **approve the minutes** of the October 25, 2018 meeting.* *Motion carried unanimously.*
- III. **Twin Lake/Ryan Creek Flood Analysis.***

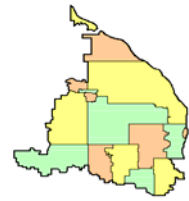
Wenck Associates has submitted a proposal to survey and investigate the channel and hydraulic capacity of Ryan Creek from upstream of the weir outlet of Lower Twin Lake to its outfall at Shingle Creek. Wenck will survey the creek, creating a hydrologic and hydraulic (H&H) model for the areas identified in the overview accompanying the proposal. It is assumed the city of Minneapolis will televise the 49th Avenue storm sewer. The proposal estimates the cost of this work will total \$18,000. The generalized scope is as follows:

- A. Survey and assess the overall condition of Ryan Creek including channel profile.
- B. Update hydrology by using existing Twin Lake H&H models.
- C. Create a HEC-RAS Model for Ryan Creek, from Lower Twin Lake to Shingle Creek.
- D. Create figures outlining the high-water levels (HWLs) and hydraulic capacity along Ryan Creek for various storm events (1-, 5-, 10-, 50-, and 100-yr).
- E. Create memo detailing the overall condition of the creek and its hydraulic capacity.

Motion by Ray, second by Scharenbroich to approve this proposal. Fifty-percent of the cost of the project will be borne by the Shingle Creek Commission, with the balance to be paid by the cities of Brooklyn Center, Crystal, Robbinsdale, and possibly Minneapolis, dependent on the latter's willingness to participate financially beyond the cost of the televising. *Motion carried unanimously.*

IV. Cost Share Projects.

A. **Brooklyn Center*** is requesting cost sharing by the Shingle Creek Commission to bring road salt brining equipment in-house. They currently go to Brooklyn Park to get their brine, which has many disadvantages.



The estimated project cost is \$100,000. Members discussed the eligibility of cost-sharing equipment vs. projects and agreed that the resultant reduction of chloride runoff to waterbodies in the watershed is well in line with the Commission's goal of more effective and reduced use of chloride. Motion by Ray, second by Asche to approve a cost-share expenditure of 50%, not to exceed \$50,000. *Motion carried unanimously.*

B. Crystal* is also requesting cost sharing by the Shingle Creek Commission in the amount of \$50,000 to offset a portion of the design costs of the Becker Park Stormwater Infiltration Project. Members discussed the possible duplication of Commission funding on this project, but it was agreed that the cost-share funds were not duplicative of the CIP funding awarded in 2018 for installation of underground storage to treat runoff from the site. Motion by Asche, second by Tuominen to approve the request from the City of Crystal. *Motion carried unanimously.*

C. Champlin* is requesting cost-sharing for the Mississippi Crossing Underground Infiltration System and Storm System Outlet to the Mississippi River to support new and existing uses at Mississippi Point Park. The system will treat stormwater prior to discharging into the river, reducing the rate of flows as well as the amount of total phosphorus and total suspended solids discharged. The City is requesting \$196,690 from the Cost-Share program of the West Mississippi Commission for this \$393,375 project. Motion by Ray, second by McCoy to table action on this project. It appears to consist of multiple projects and may be eligible as a Capital Project. *Motion carried unanimously.*

The total available city cost-share funds are: Shingle Creek - \$240,000, and West Mississippi - \$235,000. Applications are accepted until funds are encumbered.

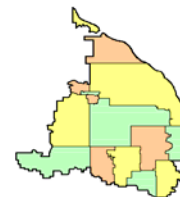
D. Related topics, future TAC meetings.

1. Policy clarifying the use of cost-share funds for street sweeper upgrades or other "non-capital" projects;
2. Clarification of CIP vs. cost share, is it one or the other; and
3. Consideration of increasing the per project cap from \$250,000 and the self-imposed levy cap of \$500K/year.

V. Crystal Lake Management Plan.*

Staff's December 7, 2018 memo describes the scope and budget for this potential project. The Crystal Lake Nutrient TMDL Five Year Review has been completed and provided a review of progress toward meeting the load reductions identified in the TMDL. The Shingle Creek Commission and stakeholders (Hennepin County, cities of Robbinsdale and Minneapolis, property owners) have implemented several actions to improve the biological integrity in the lake. Two actions have not yet been completed – aquatic vegetation management and fish community management. New data will be required to enhance an internal load reduction project.

The City of Robbinsdale is interested in pursuing a wholistic lake management approach that would provide both ongoing internal phosphorus removal and management of invasive fish and aquatic vegetation species. This approach would include a whole-lake alum treatment to seal the sediments and reduce release into the hypolimnion while continuing the withdrawal and treatment of water from both the bottom and surface layers to maximize the efficiency of the P removal and extend the life of the alum treatment. Since a recent fish survey found carp levels approaching the nuisance threshold; the proposed lake management plan would also include rough fish management.



At present there is limited aquatic vegetation present in the lake, but there is the potential for a bloom of invasive species as water clarity improves. Aquatic vegetation management should also be considered in the plan.

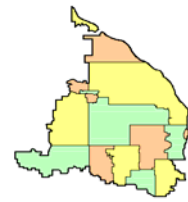
A. Internal loading, sediment release. The current internal load reduction project was designed as a flocculation treatment facility that withdraws and treats nutrient-rich hypolimnetic (deep-lake) water from Crystal Lake. After being withdrawn from the lake, water is treated using aluminum sulfate (alum) to remove phosphorus (P), and the treated water is discharged back to the lake. While treating water from the hypolimnion has shown effectiveness (70 percent of required load reductions achieved), the treatment facility tends to produce unpleasant odors that have prompted complaints from residents who use the park where the facility is located, which limits the amount of time the facility can withdraw water from the hypolimnion. The field of sediment chemistry has evolved over the years and the current, more refined approach holds the potential to reduce treatment costs by thousands of dollars.

Staff's memo describes Wenck's process in calculating the most effective alum dosing determination for Crystal Lake. The information provided by the data collection will not only enable an alum dose appropriate for the conditions found in Crystal Lake, but also allow for a more accurate cost estimate that will include alum application, follow-up sediment coring to determine the effectiveness of the first treatment, a second alum application, and a final sediment coring that will show the final effectiveness of the overall treatment. Additional water quality monitoring and observation will also be required. Estimated cost for feasibility studies and data collection = \$12,920. Estimated cost for internal loading implementation and execution = \$165,440-\$194,840.

B. Fish Community Management. A fish survey conducted in September 2018 indicates that the carp population is at the critical impairment threshold, but it is not past the threshold, suggesting that while carp are certainly contributing to the water quality issues in Crystal Lake, they are not the sole reason. The carp identified in the survey were relatively small in size, suggesting that the carp issues in the lake are likely to worsen with time as the fish grow. Because conducting a carp population survey in September is not the most ideal time, a follow-up survey is recommended for the summer of 2019 to refine the density calculation and to determine a recommended course of action. Options could vary from no action to active removal of carp. Costs for the fish management portion of the project are estimated to be \$50,540.

C. Aquatic Vegetation Management. Aquatic vegetation surveys carried out in 2013 and 2018 yielded similar results in the extreme lack of submerged aquatic vegetation, confirming the lake does not currently support native pondweed species common in healthy shallow and deep lakes throughout Minnesota. Upon completion of the alum treatments and fish management practices (if required), water clarity would be improved, and a positive vegetative response would be anticipated. Exactly what that response would look like is unknown. A desirable outcome would be one in which a diverse system of native vegetation becomes established, out-competing aquatic invasive species (AIS) but remaining below nuisance levels.

Because small amounts of AIS have been observed in the lake during the recent surveys (curly-leaf pondweed and Eurasian milfoil) and anecdotal evidence suggests these species used to be at nuisance levels along the northwest shore, the possibility exists that AIS begin to establish themselves, requiring active management. Because a vegetation survey took place in 2018 and major changes to the vegetation population would not be anticipated prior to the alum treatments, aquatic vegetation management is not proposed to commence until following the alum treatments and assumed carp removal.



An estimate of the aquatic plan management program, assuming that some herbicide spot treatments will be required to control AIS, is \$13,400.

Project management for the overall project totals \$4,000. The timeline for these tasks ranges from February 2019 to August 2020.

D. Funding Sources. The Commission's CIP includes generic "Lake Internal Load Improvement Projects," which could include rough fish removal and installation of fish barriers, chemical treatment such as alum, drawdowns, whole-lake aquatic vegetation treatment, etc. The Crystal Lake Management Plan could, with a Minor Plan Amendment, fall under that project which would be funded 100% by the Commission through the county tax levy to be certified in 2019 and collected in 2020. The Commission and Robbinsdale could also consider applying for a Clean Water Fund grant to fund a portion of the costs.

1. The Commission and City could begin this project in spring 2019 if the City was willing to up front costs incurred prior to the receipt of tax levy proceeds approximately July 2020. In this scenario the Commission probably would not apply for a CWF grant for implementation since a significant share of the cost would have already been incurred by the time a grant agreement was executed, and those costs would not be eligible to match grant funds. McCoy indicated that funding for this project is not included in the City's 2019 budget.

2. If the Commission and the City decide to wait until 2020 to start, the Commission could undertake a Minor Plan Amendment and certify a levy as well as apply for a Clean Water Fund grant in 2019. The timeline noted above would then be pushed back a year.

Motion by Ray, second by Hogg to proceed under scenario 2. above. *Motion carried unanimously.*

VI. Minneapolis Subwatershed Assessment Update.*

The Shingle Creek Commission received a Clean Water Fund Accelerated implementation grant to complete a subwatershed assessment for that part of Minneapolis that is in the Shingle Creek watershed, about 2,046 acres. Modeling of the three sub-basins (tributary to Crystal Lake, tributary to Ryan Lake, tributary to Shingle Creek) has been completed and Staff have met with the city to strategize potential BMP locations. Attached to Staff's December 7, 2018 memo are figures showing the results of pollutant export modeling in terms of pounds of TP and TSS per year. Most of the focus will be on the areas contributing at higher rates. They are also looking at what can be accomplished on Park Board land, opportunities for a regional pond, and tree trenching on county roadways. The process will also include outreach to the public.

VII. Other Business.

A. The next meeting of the Technical Advisory Committee is scheduled for 8:30 a.m., Thursday, January 24, 2019, at Crystal City Hall.

B. The meeting was adjourned at 12:18 p.m.

Respectfully submitted,

Judie A. Anderson
Recording Secretary