



Bassett Creek Watershed Management

MEMO

To: BCWMC Commissioners and Alternate Commissioners
From: BCWMC Technical Advisory Committee
Date: December 6, 2021

RE: Discussions and Recommendations on XPSWMM Updates, Flood Control Project Items, and Future Assessment Needs

The BCWMC Technical Advisory Committee met on November 22nd via Zoom to discuss several items. Discussion and recommendations included below. Attendees included:

City/Partner	Technical Advisory Committee Members and Others
Crystal	Mark Ray
Golden Valley	Eric Eckman
Medicine Lake	Susan Wiese
Minneapolis	Liz Stout, Katie Kowalczyk
Minnetonka	Sarah Schweiger
New Hope	Dave Lemke, Nick Macklem
Plymouth	Ben Scharenbroich, Chris LaBounty
Robbinsdale	Richard McCoy
St. Louis Park	Erick Francis
Others	Laura Jester, Administrator; Karen Chandler and Jim Herbert, Commission Engineers

1 Revisit XPSWMM Model Update Timing

At their meeting in August, the BCWMC approved the TAC’s recommendations regarding the timing and budget for XPSWMM model updates and requested that the timing of future model updates be revisited and confirmed at a future TAC meeting. (Background: August [TAC memo](#) to BCWMC and [August meeting minutes](#))

The TAC again discussed the timing of future updates and continues to recommend that no specific schedule be set for model updates. The TAC noted that larger but less frequent updates would be more cost effective. There was consensus that cities should be annually polled not only to submit data as previously agreed, but also to gather their thoughts or recommendations on the potential need for a model update. This information would be gathered prior to BCWMC budget setting. The TAC agreed that

several factors should be annually considered to determine whether or not a model update should be scheduled including:

- the number of potential locations needing updates
- the location or magnitude of the new projects, especially if located along/directly impacting the Bassett Creek trunk system (versus upstream watershed areas)
- specific requests to update from BCWMC member communities
- advance knowledge of larger CIP projects that could directly impact the Bassett Creek trunk system (e.g. large city or MnDOT project slated in upcoming years that might impact the trunk system)

2 Review Latest Costs for Flood Control Project (FCP) Inspections and Consider Budget Implications

Commission Engineer Jim Herbert asked for the TAC's thoughts on overall Commission responsibilities regarding the Flood Control Project (FCP) and provided information regarding the schedule and recent costs of FCP inspections. He reviewed the Commission's current inspection program for the FCP features (approved with [FCP policy in 2016](#)) including:

- Annual inspection of all non-tunnel FCP features
- Inspection at least every 5 years of the double box culvert
- Inspection every 10 years of the 2nd Street Deep Tunnel
- Inspection every 5 years of the 3rd Avenue Deep Tunnel (in conjunction with City of Minneapolis I-94 tunnel inspection)

Engineer Herbert noted that he recommends the Commission revise the schedule to disconnect the 3rd Avenue tunnel inspections from the City of Minneapolis I-94 tunnel inspection. He asked the TAC to review the following proposed inspection program for the FCP features:

- Annual inspection of all non-tunnel FCP features (*no change*)
- Inspection every 5 years of the double box culvert (*no change*)
- Inspection every 10 years of the 3rd Avenue and 2nd Street deep tunnels (*requires lowering of the Mississippi River Middle Pool to dewater the tunnels*) (*no change*)
- Additional inspection of the 3rd Avenue and unsubmerged portions of the 2nd Street deep tunnels (at 5 years between the 10-year inspections of entire deep tunnel) (*disconnects additional 3rd Avenue inspection from City's I-94 tunnel inspection and adds the unsubmerged portion of the 2nd Street tunnel*)
 - a. Option 1: additional detailed deep tunnel inspections of 3rd Ave. tunnel and unsubmerged portions of 2nd St. tunnel and comprehensive report.
 - b. Option 2: additional less comprehensive deep tunnel inspections of 3rd Ave tunnel and unsubmerged portions of 2nd St. tunnel and technical memorandum.

The TAC agreed this was an appropriate revision and recommended option 2, a less comprehensive inspection of the unsubmerged tunnel section to identify major changes that may require attention.

There was also discussion about new technologies that might be used for improved data collection, or more efficient or less costly inspections including the use of drones or mapping voids with infrared technology or ground penetrating radar (GPR). There was consensus that the Commission Engineer should continue to explore and research various methods and technologies for inspections that might gather better data or be more efficient at gathering data.

The TAC also reviewed recent costs of FCP inspections and briefly discussed the possible need to set aside more than the current \$25,000 annually for the inspection program (see "current" vs

“recommended” cost in Table 1). Due to the unknown impact of using new and different technologies, the TAC recommends discussing the cost issue at a future meeting closer to annual budget discussions.

TAC Recommendations on Flood Control Project:

- A. The TAC recommends no modifications to the Commission’s overall tunnel responsibilities and existing policy.
- B. The TAC recommends the Commission revisit the question of FCP inspection expenses in early 2022 during the annual budgeting process.
- C. The TAC recommends considering new technologies as part of the inspections prior to performance of future inspections.
- D. The TAC recommends a revision to the inspection schedule as noted in the following table:

Table 1. Recommended Flood Control Project Inspection Program

Item	Current/ Recommended Inspection Cycle	Cost/Inspection ¹	20-Year Cost ^{1,2} Current/Recommended
Annual inspection of the FCP features, except double box culvert and the deep tunnel	Annually	\$15,000	\$200,000/\$300,000
Double box culvert inspection (NASSCO) ³	Every 5 years	\$45,000	\$128,000/\$180,000
Deep tunnel (2 nd St. & 3 rd Ave.) inspection (NAASCO) ³	Every 10 years	\$65,000	\$90,000/\$130,000
Two additional deep tunnel inspections of 3 rd Ave tunnel and unsubmerged portions of 2 nd St. tunnel (Option 2 from above - non-NASSCO) ⁴	At 5 years between the 10-year inspections (two total inspections)	\$20,000	\$10,000/\$40,000
Total²			\$428,000/\$650,000

¹ 2021 dollars

² Simple summation (annualized or present worth not calculated)

³ Tunnel condition inspection based on pipeline assessment and certification program developed by the National Association of Sewer Service Companies (NASSCO)

⁴ Brief tunnel inspections looking for significant changes without coding existing or new defects or preparing detailed report, includes preparation of technical memorandum.

3 While no recommendations were brought forward, the TAC also discussed:

- **Internship Possibilities for Student from Dougherty Family College**

At the TAC meeting in July several cities indicated they might be able to house and utilize a student intern from Dougherty Family College. Alternate Commissioner McDonald Black and staff have since sought more information on possible tasks for an intern and physical spaces that might be available to house an intern. While many cities may have some tasks for an intern to do, only Golden Valley noted they might

be able to house an individual. It was noted that many cities already have intern staff and/or GreenCorps members who utilize their flexible spaces and perform tasks similar to those an intern from DFC would perform. Administrator Jester will continue to work with Alternate Commissioner McDonald Black and cities to determine if a DFC intern is possible in BCWMC.

- **Climate Resiliency Grant and Inventory/Assessment Needs for 2025 Watershed Plan Development**

The TAC briefly discussed the MPCA's new Climate Resiliency Grant application and agreed it was a good opportunity for the Commission to seek funding for a vulnerability assessment and infrastructure inventory using the XPSWMM model to model impacts of larger events (like a 500-year event).

The TAC also discussed assessments and inventories that might be needed to help prioritize and target implementation with the next 10-year management plan. It was recognized that flood potentials and hazards will be important to assess, even if grant funding isn't approved. The TAC noted the importance of maintaining current assessments and models, which may be more important than developing/using new and different tools. Aside from the need to assess flood vulnerabilities, the TAC had no strong opinions on other assessments or inventories needed.