

elm creek Watershed Management Commission

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Technical Advisory Committee Meeting Minutes February 9, 2022

I. A virtual meeting of the **Technical Advisory Committee (TAC)** of the Elm Creek Watershed Management Commission was convened at 9:33 a.m., Wednesday, February 9, 2022.

In attendance: Heather Nelson, Champlin; Kevin Mattson, Corcoran; Nico Cantarero, Stantec, Dayton; Derek Asche, Maple Grove; Matt Danzl, Hakanson-Anderson, Medina; Ben Scharenbroich, Plymouth; Ross Mullen, Ed Matthiesen, and Diane Spector, Stantec; James Kujawa, Surface Water Solutions; Rebecca Carlson, Resilience Resources; Kurt Guentzel and Kevin Ellis, Hennepin County Dept. of Environment and Energy (HCEE); Brian Vlach, Three Rivers Park District; and Amy Juntunen and Judie Anderson, JASS.

Not represented: Rogers.

Also in attendance: Ken Guenthner, Corcoran; Nathan Campeau, Joe Waln, and Heather Lau, Barr Engineering, and Jeff Weiss, Minnesota Department of Natural Resources (MNDNR).

II. Motion by Scharenbroich, second by Cantarero to approve the **agenda**. * *Motion carried unanimously.*

III. Motion by Scharenbroich, second by Cantarero to approve the **minutes*** of the January 12, 2022, meeting. *Motion carried unanimously.*

IV. **Third Party Review of Preliminary HUC-8 Model.**

A. Stantec February 2, 2022, update.* The MNDNR partnered with the Federal Emergency Management Agency (FEMA) to update the base flood elevation across the watershed for a future Flood Insurance Study (FIS). Member cities of the Elm Creek Watershed Management Commission (Commission) noted significant differences between the flood elevations in the 2016 FIS compared to the preliminary Elm Creek Floodplain Modeling and Mapping HUC-8 study (Preliminary HUC-8 Study) completed by Barr Engineering.

In some locations, the Preliminary HUC-8 results show a base flood (“100-year” or 1%-annual exceedance-probability event) that is up to 7’ or 8’ higher than the reported 2016 FIS elevations. Based on historic flooding reports and historic knowledge in the watershed, these results are outside of expected flooding conditions, even considering climate change impacts (more rain in a shorter amount of time). The base flood elevation published in the FIS sets the floodplain inundation extents and is particularly important as there are local, state, and federal regulations governing development. For example, existing single-family homes with a federally backed mortgage (approximately 95% of all mortgages) are required to buy subsidized flood insurance that may cost between a few hundred to tens of thousands of dollars per year. The floodplain also substantially increases costs for new construction due to the increased cost associated with bringing in fill (i.e., raising ground level) to reduce flood risk, which leaves the area undeveloped.

The purpose of this update is to provide a work scope to make revisions to the Preliminary HUC-8 based on Stantec’s Third-Party Review, which identified four reasons the Preliminary HUC-8 base flood elevations were so much larger than the 2016 FIS. In summary, the recommendations from the Third-Party Review were:

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1. **Recommendations for the hydrologic model:** Include floodplain storage, especially in the upper watershed, to account for off-channel floodplain storage on the landscape.

2. **Recommendations for the hydraulic model:**

a. Revise the hydraulic model with the best available data collected by the member cities and provided in the Third-Party Review. *Benefit: Model will use all surveyed structures and as-built drawings previously provided to the Commission, resulting in improved model accuracy.*

b. Modify reaches (streams/watercourses) that are modeled as broken up segments and not as a continuous reach. *Benefit: This will provide more accurate flood elevations.*

Update: On January 20, 2022, Derek Asche, chair of the TAC, and Ross Mullen, representing the Commission, met with Jeff Weiss of the MNDNR Floodplain Group to present the Third-Party Review. The MNDNR acknowledged the existing hydrologic and hydraulic model problems and that the MNDNR has made similar such revisions in the other Twin Cities HUC-8 watersheds; however, the MNDNR stated that they have neither time nor financial resources available to complete the recommended revisions as the number of revisions exceeds those of other watersheds and they are under no contractual obligation to make such changes. The MNDNR said all such revisions to the hydrologic and hydraulic models (and thus the floodplain maps) must be made by the Commission.

The following discusses Stantec's approach to build on the diagnostic work completed for the Third-Party Review and to make the recommended revisions to the model. *(Numbering corresponds to that used in Stantec's document.)*

1.0 **Hydrologic Model (HEC-HMS) Updates. Budget: \$7,700**

a. Replace the Muskingham-Cunge shortened simplified trapezoidal bank-width cross sections with reservoir routing, to account for the full storage and attenuation of the floodplain for up to 55 watersheds. *Benefit: Provide a better estimate of peak streamflows for the regulatory flood events.*

b. Rerun the calibration events included in "Elm Creek Narrative and QAQC Documentation" (Barr Engineering Co., 2021) to verify that the model calibration is still valid. The goal is to preserve or improve the calibration as indicated by an improved Nash-Sutcliffe Efficiency Index (a commonly used statistical measurement indicating "goodness of fit").

2.0 **Hydraulic Model (HEC-RAS) Updates. Budget: \$4,700**

a. Update the hydraulic model with the updated flows from the hydrologic model (HEC-HMS) as described in the preceding section for the 10%, 2%, 1%, 0.2%-annual-exceedance-events. *Benefit: Provide a better estimate of peak water surface elevations for the regulatory flood events.*

b. Update 52 bridges, culverts, weirs, and dams based on construction drawings, survey, and as-built data as shown in the Third-Party Review. (Stantec was not able to locate better data for an additional 27 structures).

c. Add the Elm Creek Dam (Mill Pond Dam) to the model based on City of Champlin as-builts.

d. Update the model to correct the stream alignments at:

1) *County Ditch 16* east of Brockton Lane (CR 101). The modeled stream alignment is through a series of stormwater ponds to the east of the intersection of Vagabond Lane and south of Bass Lake Road. The modeled alignment of County Ditch 16 will be corrected to show the watercourse is piped beneath Vagabond Lane to the north.

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2) *Unnamed Tributary to Elm Creek (HEC-RAS Reach ElmCreek_BR4)* just southeast of the intersection of Hackamore Road (CR 47) and Brockton Lane (CR 101) in Plymouth. The modeled stream alignment appears to show a temporary construction alignment of the creek. The alignment will be updated to follow the permanent alignment of the watercourse.

Benefit: Model will use all surveyed structures and as-built drawings previously provided to the Commission, resulting in improved model accuracy.

e. As directed by the MNDNR, either recombine model reaches that were split at stream confluences in the Preliminary HUC-8 model or update the boundary conditions of the existing severed reaches. It is unclear why the modeled reaches were separated; however, the severed reaches have resulted in disparate base flood elevations from one stream to the next. *Benefit: Provide: ????*

f. Run the updated the hydraulic model (per items 1 through 4 above) with the updated flows from the hydrologic model (HEC-HMS) as described in the preceding section for the 10%, 2%, 1%, 0.2%-annual-exceedance-events. *Benefit: Provide a better estimate of peak water surface elevations for the regulatory flood events.*

3.0 Memorandum of Updates. Budget: \$2,300 Stantec will prepare a memorandum describing the updates to the hydrologic and hydraulic models. The memorandum will discuss the revised model results for the calibration events in the “*Elm Creek Narrative and QAQC Documentation*” (Barr Engineering Co., 2021). The memorandum will be a documentation of changes that were made by Stantec and will be an addendum to the previously submitted materials to the MN DNR. Stantec will follow the same protocol and standards defined by FEMA.

- 4. Deliverables.** Stantec will provide the following deliverables:
- Updated hydrologic (HEC-HMS) model in version 4.3 (same as used for the Preliminary HUC-8 analysis)
 - Updated hydraulic (HEC-RAS) model in version 5.07 (same as used for the Preliminary HUC-8 analysis)
 - Memorandum describing the model updates.

- 5. Assumptions:**
- Our understanding is based on a working version (not final version) of the HEC-HMS model provided by the MNDNR to Stantec on January 24, 2022
 - Based on our discussion with Jeff Weiss on January 20, 2022, Stantec will not produce mapping products for the MNDNR, such as depth grids, inundation shapefiles, cross-sections, or stream centerlines as the MNDNR does not require these deliverables.
 - Stantec will not analyze or determine the floodway extents.
 - No additional model modifications will be made based on MNDNR review comments.

6. Schedule. The MNDNR has indicated that any rework must be completed by March 31, 2022. The MNDNR is partnered with the University of Minnesota-Duluth to create mapping products, which is contracted to begin in May 2022 and be delivered to FEMA by September 2022.

B. Barr Engineering February 2, 2022, Additional Services Outline.* In January 2022, Barr learned of hydrologic modeling concerns expressed by another consultant in a third-party review (Stantec’s

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December 22, 2021, correspondence to ECWMC member cities) and through comments from the MNDNR. Following notification of these concerns, Barr performed an internal review using senior technical staff not involved in the original project. Based on this review, they concluded that some adjustments to the hydrologic modeling were warranted. Barr staff were also notified that additional data not provided to Barr as part of the original modeling effort might better inform the hydraulic modeling. The work Barr completed under the original contract incorporated the best data available at the time. Given this information, Barr recommends that additional work be performed, as outlined hereafter. *(Numbering corresponds to that used in Barr's document.)*

Barr recommends the following tasks and has provided corresponding estimated budget ranges to complete the FEMA floodplain hydrologic and hydraulic modeling. A range of budget estimates are presented because Barr has not obtained all of the MNDNR comments or had a chance to provide the MNDNR with the results of our internal review. Barr will provide detailed budgets if desired by the Commission. Barr's understanding is that the MNDNR will be performing all floodmapping services at the conclusion of hydraulic modeling, so this scope does not include any floodmapping tasks.

1a. Barr proposes to correct the **hydrologic modeling** deficiencies identified by MNDNR and Barr's post-project internal review. Their internal review identified areas where the hydrologic modeling approach should be changed to account for flow attenuation from storage. Barr will perform this work at no cost to the Commission or the MNDNR. The scope of the updates will be developed based on further discussion with the MNDNR and will include one round of review with the Commission and MNDNR. Estimated Cost: \$0

1b. Stantec's December 22, 2021, Third-Party Review Correspondence Comments. Barr will address the comments identified in the referenced correspondence consistent with MNDNR comments and our internal review. Recognizing that there can be multiple appropriate hydrologic modeling methods used in this watershed, Barr does not believe additional changes are necessary to the hydrologic modeling methodology. If, after further discussion, the Commission would like to change the methodology as Stantec has suggested, Barr could make those changes. Changing the hydrologic modeling approach would require a recalibration of the model to the stream gage. This second hydrologic update includes one round of review with the Commission and MNDNR. Estimated Cost: \$10,000–\$25,000

2. Most of the significant **hydraulic modeling** updates stem from newly available hydraulic structure data. Barr will update the hydraulic models with any new flows from Tasks 1 and 2 and with new hydraulic structure data. The Stantec memo also recommends updating boundary conditions, a relatively minor task (up to 2 hours). Barr will perform this work at no charge if further discussion with the MNDNR indicates this change is desired. The overall hydraulic update includes one round of review with the Commission and MNDNR. Estimated Cost: \$5,000–\$15,000

3. Proposed Schedule. Barr's understanding is that the schedule for completing this work is not known. Barr will work with the Commission and MNDNR to meet the Hennepin County floodplain mapping project schedule.

C. TAC Discussion.

Corcoran: We have been doing LOMRs for anyone near the floodplain.

Plymouth and Corcoran: Current is not reasonable model.

Maple Grove: Agree, needs to be more aligned with what we see.

Dayton: Agree, [this mode] puts city staffs in tough position.

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Champlin and Medina: Agree.

Mullen: 7-8 foot is in Medina headwaters, huge wetland complex upstream, storage was excluded from the analysis, trying to tie hydraulics and hydrology together.

Wahl: fixes will include the Medina wetland complex

Campeau: internal audit showed attenuation issue, agree best structural information should be included

Maple Grove: When did Barr become aware of 7-8 foot disparity?

Campeau: a week ago.

Unknown: This was discussed at length summer-fall 2020

Maple Grove: Commission may not feel they got that communication.

Kujawa: Does Atlas 14 precipitation affect these flows?

Waln: Ten-day 24-hour storm.

Mullen: As you go downstream, disparities are smaller.

Vlach: Remind individuals that TRPD and the Commission are cooperatively monitoring so we have quite a bit of monitoring data that could be used.

Unknown: Can cities use model to provide specific information to, say, property owners? Flood risk. How can they figure out what elevations make sense?

Kujawa: Nice to have comparison of 100-year before and now.

Mullen: Can do some visuals.

Corcoran: Is March 31 deadline realistic?

Weiss: Could accept later than that.

Maple Grove: Can we go to April 30?

Weiss: Yes.

Maple Grove: Could be mid-May?

Weiss: FIS developed based on existing development, not fully developed.

Unknown: Additional calibration points add more complexity, look at where TRPD models.

Plymouth: why was TRPD data not used:

Barr: not aware of data.

Waln: There was additional data we were not aware of at the time.

Campeau: May not be old enough.

Guentzel: Why such a range of costs?

Campeau: Only had two days to come up with budget. We don't have all the comments. After reading, not much difference in hydrology costs. Agreement with DNR on what appropriate hydrology should be used. On hydraulic side, don't know how many structures will need to be added.

Dayton: Can be some dedicated outreach to city staffs.

Campeau: After Task 1 would have hydrologic model ready for DNR. Not a lot of difference. Biggest difference is the methodology.

Mullen: Task 1 and Task 1a and both Task 2s correlate.

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Campeau: Task 1b would probably go away.

Corcoran: Are the end products comparable?

Maple Grove: Looking for a table of the crossings.

Plymouth: Visual components work for me, too.

Champlin: Is it possible to add an additional layer?

Weiss: We generally layer the existing and the proposed.

Medina: Do we need to make a recommendation today?

Weiss: will be more watersheds in the end.

Guenther: We have apples to apples comparison and what the deliverables are.

Unknown: March approve proposal, work in in May. Comments from cities in June. Commission approve in July. Outputs – figures, tables, GIS, SHAPE files, story map. Interactive mapping takes more time. Cities have sit-down for personalized presentations, model calibration , stakeholder meetings, extra locations.

Maple Grove: Stakeholder meetings between May and July. RFP out this week. Along with Weiss' memo. Back by March 2 for packet. Discuss and recommend March 9.

Weiss: Process is playing out well.

V. Cost Share Policy.*

The Cost Share Policy calls out the Commission's maximum annual share of the cost of a capital project to be up to \$250,000 and its maximum annual ad valorem tax levy to be \$500,000. Due to the rising cost of projects, it is anticipated future projects will exceed those limits.

Motion by Scharenbroich, second by Nelson to eliminate the annual cost of a capital project, set the maximum annual ad valorem levy at \$750,000, retain the 25% of project cost to be borne by the Commission, and recommend these revisions to the Commission. *Motion carried unanimously.*

Members are reminded to review the current CIP and to make any adjustments, revisions, and additions in anticipation of discussing the Capital Improvement Program at the March meeting. Staff will send a reminder of this request and an Exhibit A with which to add projects to the spreadsheet.

VI. Operations and Maintenance Agreements.*

Often development projects are approved contingent upon receipt of an Operations and Maintenance (or other) agreement. This agreement is usually between the city and the project owner and requires approval by the Commission's technical staff. In some cases, this agreement cannot be generated until final plat occurs, sometime years into the future.

Since the City in which the project resides is ultimately responsible for having such an agreement in place to document the future operations and maintenance of the stormwater pond/device/structure, Staff were concerned that the language in the Commission's Rules is inadequate for this purpose. If such language were to be included as a condition for final approval of a project, it would remind cities that this is their responsibility, and Commission staff would not have to undertake the lengthy and costly process of ascertaining that the agreements are in place.

At the January meeting, Staff presented a possible remedy for this process. Members expressed concerns that the proposed language may not adequately address this issue and requested Staff to go back to the Commission's attorney with their concerns.

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In the February meeting packet, Staff's memo has been updated to reflect Commission attorney Joel Jamnik's response. Jamnik indicated that Rules B.6 and B.7 of the Commission's procedural requirements do not affect his earlier recommendation.

Motion by Cantarero, second by Scharenbroich to revise the approving language to read: "Conditions of approval for project reviews and agreements implementing those conditions that bind future owners of the project shall be recorded to provide notice to future owners of the conditions of approval and the future owners' continuing operation and maintenance obligations." Motion carried unanimously. This revision is effective upon approval by the Commission at its March 9, 2022, meeting.

In checking with Steve Christopher, BWSR Board Conservationist, he indicated that the "changes recommended to the Elm Creek Watershed Management Commission in the February 2, 2022 memo from you to the Elm Creek TAC Members fall under Minnesota Rule [8410.0140 Plan Amendments Subp. 1a](#). Changes not requiring an amendment. Specifically, the changes meet [Section] F. adjustments to how an organization will carry out program activities within its discretion. There are no proposed changes to the existing goals, priorities or outcomes and this will aid the Commission in achieving its stated objectives within the Watershed Management Plan."

VII. 2022 Work Plan.

Included in the meeting packet was a copy of the **proposed 2022 Work Plan**.^{*} Members were requested to review it and to contact the administrative office with proposed updates/revisions. They were also encouraged to review the final PRAP report, which was available at the January regular meeting, and incorporate responses to the Board of Water and Soil Resources' (BWSR's) recommendations in their updates. A final draft of the 2022 Work Plan will be presented for approval at the March TAC and regular meetings.

VIII. Watershed Based Implementation Funding (WBIF).

The Board of Water and Soil Resources (BWSR) biennially appropriates funding for a program called Watershed-Based Implementation Funding (WBIF). The WBIF funding is allocated to targeted watersheds to be distributed according to guidelines agreed upon by the eligible entities in the allocation area ("the Partnership"). The BWSR Board approved allocations for fiscal year 2022, including \$297,774 to the Elm Creek allocation area which will become available July 1, 2022.

The BWSR Funding Policy for the program specifies that each Partnership will include one decision-making representative from each watershed district and/or watershed management organization, soil and water conservation district, county with a current groundwater plan, and up to two decision-making representatives from municipalities within the allocation area. For the Elm Creek allocation area, that would include the Elm Creek WMC, Hennepin County in its capacity as the county SWCD, and up to two cities. Other parties may participate in discussions regarding the use of the funding, but only the decision-making representatives may make the final recommendation to BWSR. The city and watershed representatives may be TAC members or Commissioners.

Staff recommends that at their meetings today the TAC and Commission discuss which two persons the cities would like to represent them at the first official convene meeting to be held at the March 9, 2022, meeting, and who should represent the watershed. Hennepin County will also be asked to designate a representative, and BWSR will be formally represented as well. At that meeting the group will begin discussing options for the use of the funds.

Staff further recommends that the TAC and Commission start thinking about their priorities and objectives for the funding. Activities eligible for funding span a very wide range of options, but all must be

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focused on prioritized and targeted cost-effective actions with *measurable water quality results*. Funding is not limited to capital projects; anything in the Third Generation Plan's Implementation Plan may be eligible as long as its end goal is the protection and improvement of water quality. As a reminder, the Implementation Plan included four broad areas: 1) Regulation and Project Reviews; 2) Monitoring; 3) Education and Outreach; and 4) TMDL/WRAPS Implementation. This latter category encompasses a) Load reduction through land use change; b) Targeted load reduction through subwatershed assessments; c) Agricultural outreach; and d) Capital projects in the plan or a subsequently amended CIP.

Nelson and Cantarero volunteered to represent the cities. Guentzel and/or Ellis will represent Hennepin County. A representative from the Commission will be chosen at the regular meeting.

IX. Other Business.

A. Included in the meeting packet was an update from Jim Herbert, Barr Engineering, announcing a new wiki page in the Minnesota Stormwater Manual dedicated to guidance on crediting proprietary **manufactured treatment devices** (MTDs).

B. Topics for future TAC meetings.

1. Review RFP responses – Floodplain Mapping.
2. Follow-up - PRAP subcommittee meeting.
3. Watershed-wide TMDL 5-year review.
4. Follow-up - Convene meeting, FY22-23 WBIF program.
5. Consider projects for 2022 Stormwater, Wastewater and Community Resilience

Planning Grants.

6. Consider projects/programs as line items in 2023 Operating Budget (by April 2022).
7. Review Project Review Fee Schedule.
8. Others?

X. There being no further business, the meeting was adjourned at 11:27 a.m.

Respectfully submitted,



Judie A. Anderson
Recording Secretary

JAA:tim

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