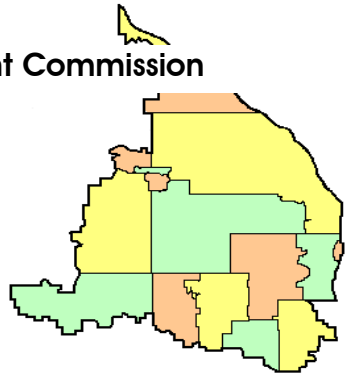
Shingle Creek Watershed Management Commission
West Mississippi Watershed Management Commission

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



December 1, 2022

Commissioners ***and***
Technical Advisory Committee Members
Shingle Creek and West Mississippi
Watershed Management Commissions
Hennepin County, Minnesota

The agenda and meeting packets are available on the Commission's web site.
http://www.shinglecreek.org/minutes--meeting-packets.html ***and***
http://www.shinglecreek.org/tac-meetings.html

Dear Commissioners and Members:

Regular meetings of the Shingle Creek and West Mississippi Watershed Management Commissions will be held Thursday, December 8, 2022, in the Aspen Room at Plymouth Community Center, 14800 34th Avenue North, Plymouth, MN.

Lunch will be served at 12:00 noon and the meetings will convene concurrently at 12:45.

The Technical Advisory Committee (TAC) will meet at 11:00 a.m., prior to the regular meeting.

Please make your meal choice from the items below and email me at judie@jass.biz to confirm your attendance and your meal selection by noon, Tuesday, December 6, 2022.

Thank you.

Regards,

Judie A. Anderson
Administrator

cc: Alternate Commissioners, Member Cites, Troy Gilchrist, TAC Members
Stantec Consulting Services, BWSR, MPCA, HCEE

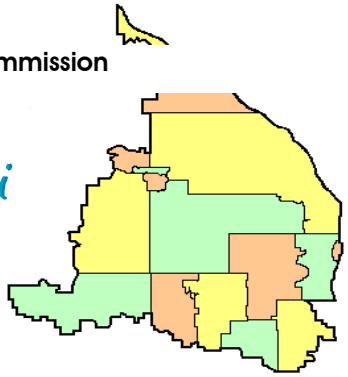
Z:\Shingle Creek\Meetings\Meetings 2022\12_Notice_Regular Meetings.docx

Order your deli sandwich box lunch. Sandwiches come with lettuce, tomato and mayo. As an alternative you may specify your sandwich with wheat bread or as an unwich (lettuce wrapped).

1 Pepe – Ham and cheese
2 Big John – Roast beef
3 Totally Tuna – Tuna salad and cucumber
4 Turkey Tom – Turkey
5 Vito – salami. capocollo, cheese, onion, oil and vinegar, oregano-basil (no mayo)
6 The Veggie – double cheese, avocado spread, cucumber
14 Bootlegger Club – Roast beef and turkey

Shingle Creek Watershed Management Commission
West Mississippi Watershed Management Commission

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



A combined regular meeting of the Shingle Creek (SC) and West Mississippi (WM) Watershed Management Commissions will be convened Thursday, December 8, 2022, at 12:45 p.m. Agenda items are available at http://www.shinglecreek.org/minutes--meeting-packets.html. *Black typeface denotes SCWM items, blue denotes SC items, green denotes WM items.*

A G E N D A | December 8, 2022

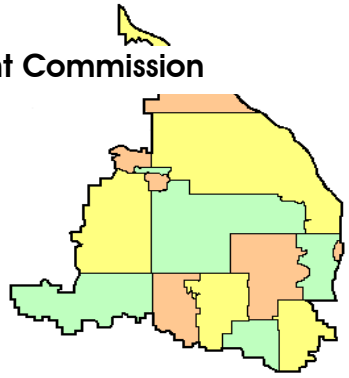
		1.	Call to Order.
	SCWM	**a.**	Roll Call.
√	SCWM	**b.**	Approve Agenda.*
√	SCWM	**c.**	Approve Minutes of Last Meeting.*
		2.	Reports.
√	SC	**a.**	Treasurer's Report and Claims** - voice vote.
√	WM	**b.**	Treasurer's Report and Claims** - voice vote.
	SCWM	**3.**	Open forum.
		4.	Project Reviews.
√	SC	**a.**	Opportunity Site, Brooklyn Center.
√	SCWM	**b.**	Rules and Standards for Linear Projects.*
	SCWM	**5.**	Fourth Generation Watershed Management Plan. The draft plan is *available on the SCWM website homepage under 'What's New' [http://www.shinglecreek.org/].*
√	SCWM	**a.**	Boundary Adjustments.*
		6.	Third Generation Plan.
√	SCWM	**a.**	Annual Progress Review.*
	SCWM	**7.**	Cost Share Projects.
√	SC	**a.**	Highland Gables Cost Share Request.*
	SC	**b.**	Minneapolis Cost Share Request.
		8.	Grant Opportunities.
√	SC	a.	MPCA Climate Resiliency Grant.*
	WM	**b.**	Clean Water Fund Grant Results – verbal.
		9.	Education and Public Outreach.
	SCWM	**a.**	Next WMWA meeting –Tuesday, December 13, 2022, at 8:30 a.m., via Zoom.
		10.	Communications.
	SCWM	**a.**	Staff Report – no report this month.
	SCWM	b.	Communications Log.*
	SCWM	**11.**	Other Business.
		a.	Reminder of Commissioner Appointments for cities of Osseo, Plymouth and Robbinsdale.
		b.	Solicitations of Interest Proposals were published in Nov. 28 edition of the *State Register.*
	SCWM	**12.**	Adjournment.

Z:\Shingle Creek\Meetings\Meetings 2022\12 Agenda Regular meeting.docx

* In meeting packet or emailed ** Supplemental email / Available at meeting ***Previously transmitted **** Available on website √ Item requires action

Shingle Creek Watershed Management Commission
West Mississippi Watershed Management Commission

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



REGULAR MEETING
MINUTES
November 10, 2022

(Action by the SCWMC appears in blue, by the WMWMC in green and shared information in black.
*indicates items included in the meeting packet.)

I. A joint meeting of the Shingle Creek Watershed Management Commission and the West Mississippi Watershed Management Commission was called to order by Shingle Creek Chairman Andy Polzin at 12:50 p.m. on Thursday, November 10, 2022, in the Aspen Room, Plymouth Community Center, 14800 34th Avenue North, Plymouth, MN.

Present for Shingle Creek were: Alex Prasch, Brooklyn Park; Burt Orred, Jr., Crystal; Karen Jaeger, Maple Grove; Ray Schoch, Minneapolis; Bill Wills, New Hope; John Roach, Osseo; Andy Polzin, Plymouth; Diane Spector, Katie Kemmitt, and Todd Shoemaker, Stantec; Troy Gilchrist, Kennedy & Graven; and Judie Anderson, JASS. Not represented: Brooklyn Center and Robbinsdale.

Present for West Mississippi were: Alex Prasch, Brooklyn Park; Gerry Butcher, Champlin; Karen Jaeger, Maple Grove; John Roach, Osseo; Diane Spector, Katie Kemmitt, and Todd Shoemaker, Stantec; Troy Gilchrist, Kennedy & Graven; and Judie Anderson, JASS. Not represented: Brooklyn Center.

Also present were: James Soltis, Brooklyn Center; Mitchell Robinson, Brooklyn Park; Heather Nelson, Champlin; Mark Ray, Crystal; Mark Lahtinen, Maple Grove; Bob Grant and Nick Macklem, New Hope; Amy Riegel and Ben Scharenbroich, Plymouth; and Richard McCoy and Mike Sorensen, Robbinsdale.

II. Agendas and Minutes.

Motion by Schoch, second by Orred to approve the **Shingle Creek agenda.*** *Motion carried unanimously.*

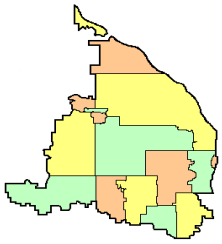
Motion by Roach, second by Prasch to approve the **West Mississippi agenda.*** *Motion carried unanimously.*

Motion by Schoch, second by Orred to approve the **minutes of the October 13, 2022, regular meeting and public hearing.*** *Motion carried unanimously.*

Motion by Jaeger, second by Roach to approve the **minutes of the October 13, 2022, regular meeting and public hearing.*** *Motion carried unanimously.*

III. Finances and Reports.

A. Motion by Schoch, second by Orred to approve the Shingle Creek **November Treasurer's Report* and claims** totaling $88,880.36. Voting aye: Prasch, Orred, Jaeger, Schoch, Wills, and Polzin; voting nay: none; absent: Brooklyn Center and Robbinsdale.



B. Motion by Roach, second by Jaeger to approve the **West Mississippi November Treasurer's Report* and claims** totaling $9,166.59. Voting aye: Prasch, Jaeger, and Roach; voting nay: none; absent – Brooklyn Center and Champlin.

IV. Open Forum.

Orred stated that there is no water in the MAC wildlife refuge in Crystal.

V. Project Reviews.

A. Linear Project Review Thresholds.*

New project review requirements are now in effect (as of October 1, 2022) for the Shingle Creek and West Mississippi Commissions. One of the changes is that linear projects that create or disturb one acre or more of impervious surface are now subject to Commission requirements. Under the previous rules, linear projects were subject to Commission requirements only if they created one acre or more of impervious surface.

Under the new requirement, most neighborhood street projects could come to the Commissions for review because they almost always disturb more than one acre. Staff recommends maintaining the threshold for Commission review – when a linear project creates more than one acre of new impervious surface. This clarification can be made to the Rules as a housekeeping update with no plan amendment required.

This topic was discussed at the Technical Advisory Committee (TAC) meeting earlier today. Discussion centered on two issues – the differentiation between "create" and "disturb," and the impact of underlying soils. It was recommended by the members that the Commissions follow the MPCA guidance. It was also recommended that definitions be added to the rules; otherwise, they should remain as currently written. The TAC will continue this discussion at its December meeting.

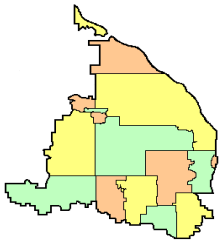
[Butcher arrived 1:14 p.m.]

B. Chloride Management Requirements for Project Applicants.*

The Shingle Creek and West Mississippi TAC and Commissions have a thorough understanding of how road salt (chloride) use for winter safety can negatively impact water bodies. Shingle Creek is impaired for chloride and its condition has not improved since the Shingle Creek Chloride TMDL was published. Road salt can contaminate drinking water, have negative impacts on aquatic organisms, and corrode infrastructure, among other impacts.

To help minimize sources of chloride in the watershed, the TAC and Commissions have been more frequently recommending to cities approval of development projects pending submittal of a chloride management plan from developers. The purpose of a chloride management plan is to ensure proper winter maintenance BMPs are used for developments in the watershed to minimize the amount of excess chloride applied to pavement and to reduce the amount of chloride that makes its way to water bodies in the watersheds.

There are some difficulties with requiring chloride management plans from project applicants. The entity submitting project plans for permitting often doesn't have a strong relationship with the entity who will ultimately be doing winter maintenance, making it difficult to ensure management plans get upheld and implemented. Winter maintenance crews are often contracted out especially for large developments. Requiring



chloride management plans, however, may help increase awareness of chloride issues in the watershed and be an additional tool to educate people on the negative impacts of salt use.

Staff have researched chloride management plan requirements from various cities and watersheds in the Metro Area to understand what is currently being done, what is working well, and what options exist for Shingle Creek and West Mississippi to require a chloride management plan with project applications. They reviewed chloride management requirements from Nine Mile Creek and Coon Creek Watershed Districts, Mississippi Watershed Management Organization, and the cities of Edina, Bloomington, and Plymouth, as well as the draft Winter Maintenance Management Plan templates created for the Hennepin County Chloride Initiative by Fortin Consulting (included in the meeting packet). Chloride management plans, as a requirement for development, are a relatively new idea and haven't been implemented in many places, so there was not much overall feedback from the watersheds and cities on how requiring chloride management plans have been going.

Based on the review described above, Staff proposed four potential options for the Commissions to implement a chloride management requirement with project submittals ranging from 1 (easier to implement) to 3 (more difficult/resource intensive to implement):

1. Do not add a chloride management plan requirement and instead continue efforts on chloride education and outreach in the watersheds.

2. Require project applicants to name an individual or multiple individuals responsible for winter chloride management onsite.

3. Require project applicants to submit a Chloride Management Plan using the templates provided in the Winter Maintenance Management Plan created for the Hennepin County Chloride Initiative by Fortin Consulting. Project applicants would use the calculator to choose which template to use: basic, intermediate, or detailed.

4. Add chloride management requirements to the Operations and Maintenance agreements between the site owner and the City.

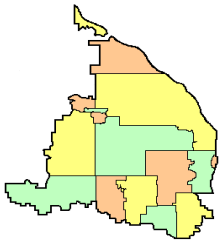
Staff recommends Option 1, the Commission refrain from adding any additional requirements to project review submittals and continue to focus on chloride education and outreach in the watersheds.

Members of the TAC concurred. This topic will be addressed as part of the "Low Salt No Salt" campaign next year and added to the Commissions' 2023 Work Plans which will be considered at the January 12, 2023, meeting.

VI. Fourth Generation Watershed Management Plan.*

A. A review draft of the Fourth Generation Watershed Management Plan was posted on the Commissions' website in early October, and a notice was emailed to Commissioners, TAC members, city staff members, and other stakeholders that it was available for review. The Commission received comments from the Board of Soil and Water Resources, Minnesota Pollution Control Agency, and Metropolitan Council. In addition to providing links to resources and commending the Commissions for emphasizing a commitment to climate change and environmental justice, agencies provided a few informal comments that are summarized below. No comments warrant any significant changes to the Plan.

1. The Plan should clearly state how a municipality could adopt the whole Plan or portions to act as their Local Surface Water Management Plan [Met Council]



2. Consider more commitment to reducing chlorides [MPCA]

3. Consider adding protection strategies for lakes that have been delisted [MPCA]

B. The next step in the planning process is to proceed to the 60-day review period. During this period, the member cities and other review agencies will be asked for formal comments on the Plan. Upon completion of the 60-day review, the Commissions must hold a public hearing to take further public comment. Following any revisions in response to the comments, the Commissions must then send the revised Plan, a compilation of all the comments received, the responses, and a summary of how the Plan was revised in response to comments to the Board of Water and Soil Resources. BWSR staff will review the Plan and then make a recommendation to BWSR's Metro Water Planning Committee, who will review the Plan and make a recommendation to the full BWSR Board to either approve the Plan or require revisions. After approval by the BWSR Board, the Plan will come back to the Commissions for final adoption. The law provides BWSR 90 days for this review process, but it can be completed in less time.

Motion by Schoch, second by Roach to initiate the 60-day review process. *Motion carried unanimously.*

Motion by Butcher, second by Jaeger to initiate the 60-day review process. *Motion carried unanimously.*

C. The updated **draft plan** is available on the Shingle Creek and West Mississippi website homepage under "What's New" (http://www.shinglecreek.org/). [Notice of the formal review was emailed on November 16, 2022.]

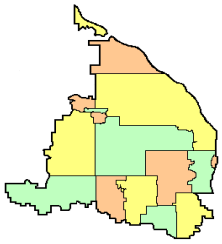
VII. Watershed Boundaries.*

With the Commission's review of the proposed updated legal boundaries at the September Commission meeting, the proposed boundary line and draft letters of concurrence were sent to the neighboring watershed organizations for their review and concurrence. Staff have received comments from Mississippi WMO, Elm Creek WMC, and Bassett Creek WMC with clarifications on drainage patterns along the shared boundary.

The Stantec team met with representatives from Mississippi WMO and Bassett Creek WMC to discuss the recommended revisions to the proposed boundary and has responded to the comments received through the review by Elm Creek WMC's member cities. Comments received were based on specific local knowledge of municipal storms sewer networks and drainage patterns and presented meaningful refinement to the accuracy of the proposed boundary. Staff is in the process of making the recommended edits to distribute a final draft boundary to each of the neighboring watershed organizations. Review by municipalities will follow the neighboring watershed concurrence. The meetings targeted for boundary review and concurrence at upcoming Watershed Commission meetings are: Bassett Creek – November 16; Elm Creek – December 14; and Mississippi – January 10.

After watershed and municipal concurrence, the boundary update will be submitted to Hennepin County, so the County can update the watershed's special taxing district. Submittal by July 1st of an updated boundary map and a list of parcels within the new boundaries will ensure the update is included in the following year's taxes.

VIII. Grant Opportunities.



A. Minneapolis Cost Share Request.*

Representatives from the City of Minneapolis and Houston Engineering were present at the TAC meeting to submit a cost share request from the City of Minneapolis to the Shingle Creek Commission for improvements proposed adjacent to 46th Avenue and Shingle Creek. The proposed improvements would replace a failed and eroded outlet to Shingle Creek and incorporate green infrastructure to manage and convey runoff to the creek rather than through traditional pipes. The green infrastructure consists of two rain gardens, a dry swale, and a step pool system consisting of three pools discharging into the creek. In their application received last month, the City requests the maximum cost-share amount of $50,000.

The City prepared preliminary designs for two options with the estimated cost of the stormwater work at between $151,000 (Option B) and $163,000 (Option A). The higher cost of option A is due to the incorporation of larger step-pools adjacent to Shingle Creek.

Staff reviewed the preliminary plans and noted the following benefits of the project:

1. Replacing failed "gray" infrastructure (pipe) with the more natural aesthetic of green infrastructure.

2. This is a "pilot project" for Minneapolis and may serve as an example for future outfall stabilization projects.

3. Improving water quality (Table 1) for an area with no existing stormwater management.

4. Adding green space for the surrounding community.

Table 1. Water quality benefits of the proposed project.

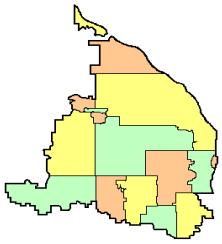
	Volume Captured (cf)	TSS Reduction (lb/yr)	TP Reduction (lb/yr)	Normalized Cost ($/lb TP)
Proposed Green Infrastructure*	**2,134**	**216**	**1.2**	**$4,200-$4,600**

*Water quality benefits represent both Options A and B.

Staff recommends that the City address the following comments as the project proceeds to final design:

1. Document plunge pool stability:
  a. Effect of Shingle Creek flows
  b. Effect of pipe flows
2. Provide MIDS BMP parameters/MIDS file to confirm modeling corresponds to the design.
3. Conduct soil borings to verify design infiltration rates.
4. Provide pretreatment to ensure the functionality of the credited system.
5. Provide a reinforced EOF at the dog leg of swale for 100-yr event.
6. Provide a revegetation plan (native species recommended).
7. Verify that a public easement (or equivalent) is dedicated.
8. Execute and record an O & M Agreement prior to release of any funds.

With the revisions above, Staff recommended approval of this cost share application. TAC members concurred with this recommendation. Upon Commission approval, the City will submit 90% design plans. The TAC has also requested the City to look at the velocities for a 100-year flow event to make sure the step pools are properly sized.



Motion by Schoch, second by Orred to approve this project subject to the recommended design changes. *Motion carried unanimously.* At January 1, 2022, the balance in the City Cost Share Fund was $329,210.

B. MPCA Climate Resilience Grants.*

The Minnesota Pollution Control Agency (MPCA) is taking applications for the Planning Grants for the Stormwater, Wastewater, and Community Resilience program. $395,000 is available to support climate-planning projects in communities across Minnesota. This funding will help communities assess vulnerabilities and plan for the effects of Minnesota's changing climate in three areas: (1) Improving stormwater resilience and reducing localized flood risk; (2) Improving the resilience of wastewater systems; and (3) Adapting community services, ordinances, and public spaces.

This was a new grant program in 2021, and the Commission approved submitting a grant application to use the Shingle Creek HUC8 model to estimate the potential impacts of future precipitation patterns. Unfortunately, it was not funded. Supposedly the DNR is currently doing some modeling for at least some parts of the West Mississippi watershed, but Staff have not seen it and can't say whether it is suitable for such a modeling exercise.

Staff recommend that Shingle Creek reapply this year using the same general work plan as last year. Last year the grant program funded grants to a few other WMOs and cities to undertake essentially the same activities:

1. Model and map midcentury precipitation scenarios to create projected flood inundation areas for the 1%+ 24-hour rainfall event and the 1%+ 10 day event. A 'plus' is a rainfall depth taken from the 90th percentile estimate for the given rainfall frequency. FEMA often evaluates not only the 1% storm event but also the 1%+ storm event as a way to provide perspective on the range of values one COULD expect in the 1% event. The State Climatology Office also suggests using the 90th percentile as a proxy for midcentury precipitation.

2. Identify potential future flooding risks in the watershed by reviewing known flooding areas, infrastructure, structures, and emergency vehicle routes in or in close proximity to predicted future hazardous flood conditions.

3. Develop policy recommendations for using the scenario data. For example, this modeling could be used to help the cities and county better understand how to properly design new infrastructure such as culverts, bridges, etc. that would be expected to have a mid-century useful life.

Completing this type of resiliency modeling is called out in the Fourth Generation Plan as a priority implementation action. The cost of undertaking this work was estimated last year as just under $25,000, with a grant request of about $22,000 and a 10% local match of about $2,500. Staff have not yet updated the estimate but believe it will be in that ballpark.

Applications are due January 12, 2023. The TAC has recommended moving forward with an application. If the Commission approves pursuing this grant, Staff will bring a draft workplan and application to the Commission at their December meeting. The level of effort to prepare the application and associated documents will be minimal since much of what was prepared last year can be reused.

Motion by Schoch, second by Orred directing Staff to develop an application to pursue this grant for consideration at the December meeting. *Motion carried unanimously.*

C. Watershed Based Implementation Funding. The Shingle Creek and West Mississippi Convene Groups' recommendations have been submitted to the Board of Water and Soil Resources (BWSR), which is currently reviewing the associated work plans.

IX. Education and Public Outreach.

A. The **West Metro Water Alliance (WMWA**) will meet via Zoom at 8:30 a.m., December 13, 2022.

B. At the November meeting the members discussed the shared employment individual's duties. The County Board will consider this position at their meeting at the end of November, after which time a job description will be written.

C. It was reported that the WMWA educator, Jessica Sahu Teli, has been busy with classroom and community-based activities. She is a passionate individual and has been very enthusiastically accepted by her audiences.

D. The West Metro Water Alliance (WMWA), which is a partnership of Shingle Creek and West Mississipi, Elm Creek, and Bassett Creek WMOs, contracts with a licensed teacher to provide education and outreach, primarily to 4th graders through the Watershed PREP program, but also at other school and community events. The professional services agreement* with the current educator has expired and is in need of renewal. Shingle Creek acts as the fiscal agent for WMWA, so the agreement is between Shingle Creek and that individual, who is an independent contractor. The Commission's attorney has drafted the agreement and Staff recommend that the Commission authorize its execution.

Motion by Prasch, second by Schoch to renew the Education Agreement

X. Communications.

A. Staff Report. No report this month.

B. October Communications Log.* No items required action.

XI. Other Business.

XII. Adjournment. There being no further business before the Commissions, the joint meeting was adjourned at 1:50 p.m.

Respectfully submitted,

Judie A. Anderson
Recording Secretary
JAA:tim

ZZ:\Shingle Creek\Meetings\Meetings 2022\November 10 2022 meeting minutes.docx

SHINGLE CREEK WATERSHED MANAGEMENT COMMISSION

PROJECT REVIEW SC2022-06: Opportunity Site

Owner: Chris Osmundson
Company: Alatus LLC
Address: 80 S 8th St Suite 4155, Minneapolis, MN 55402

Engineer: Rhonda Pierce
Company: Pierce Pini & Associates
Address: 9298 Central Ave NE, Suite 312 Blaine, MN 55434

Phone: (763) 537-1311
Email: rhonda@piercepini.com

Purpose: Redevelopment of approximately 16 acres into residential, entrepreneurial spaces, and an event center within a larger 68-acre redevelopment area.

Location: Multiple properties at the northeast corner of Bass Lake Road and Shingle Creek Parkway (Figure 1).

Exhibits:

1. Project review application and project review fee of $2500, dated 6/24/22, received 6/29/22.
2. Opportunity Site Stormwater Assessment Draft, by Bolton & Menk Inc., dated 6/22/22, received 6/24/22.
3. Hydrologic calculations, Bolton & Menk, dated 11/29/22, received 11/29/22.
4. Civil Plans, by Pierce Pini, dated 10/27/22, received 10/28/22.
5. Pipe Sizing Calculations, by Bolton & Menk Inc., dated 9/28/22, received 9/29/22.
6. Roof Runoff Calculations, by Bolton & Menk Inc., dated 9/28/22, received 9/29/22.
7. Opportunity Site Memo, by Bolton & Menk, dated 11/29/22, received 11/29/22.
8. Opportunity Site Public Infrastructure, Phase 1, by Bolton & Menk, dated 11/29/22, received 11/29/22.

Findings:

1. The proposed project is the construction of a 16-acre mixed-use space with five buildings surrounding parking, sidewalks, green spaces. The site is 16 acres. Following development, the site will be 80 percent impervious with 12.8 acres of impervious surface, a decrease of 1.4 acres. Phase 1 is a portion of the larger 68-acre Opportunity Site. Development of future phases within the Opportunity Site will be subject to Commission review and conformance with the overall Opportunity Site stormwater management plan.
2. The complete project application was received on 6/24/22. The applicant requested a 60-day review extension on August 4, 2022 and a second extension on October 12, 2022. To comply with the 60-day review requirement, the Commission must approve or deny this project no later than the 12/8/22 meeting. Sixty calendar days expire on 12/26/22.

3. To comply with the Commission's water quality treatment requirement, the site must provide ponding designed to NURP standards with dead storage volume equal to or greater than the volume of runoff from a 2.5" storm event, or BMPs providing a similar level of treatment - 85% TSS removal and 60% TP removal. Infiltrating 1.3-inches of runoff, for example, is considered sufficient to provide a similar level of treatment. If a sump is used the MnDOT Road Sand particle size distribution is acceptable for 80% capture.

   No stormwater practices are proposed on the Phase 1 site. Runoff will be routed off-site to a sedimentation pond and two infiltration basins as part of the regional stormwater system for the 68-acre Opportunity Site. The applicant submitted a water quality model (P8) showing the system provides 95% TSS and 64% TP removal for the Opportunity Site. The applicant meets Commission water quality treatment requirements.

4. Commission rules require that site runoff is limited to predevelopment rates for the 2-, 10-, and 100-year storm events. Runoff from the site is routed to a sedimentation pond and two infiltration basins. The applicant meets Commission rate control requirements (Table 1).

Table 1. Runoff from site (cfs).

Drainage Area	2-year event		10-year event		100-year event	
	Pre-	Post-	Pre-	Post-	Pre-	Post-
Summit Drive	39	28	40	38	53	52
John Martin Drive	42	7.0	71	9.5	70	14
Opportunity Parkway (Shingle Creek)	27	11	52	25	49	38

5. Commission rules require the site to infiltrate 1.0 inch of runoff from new impervious area within 48 hours. The applicant proposes to meet the abstraction requirement for the 68-acre Opportunity Site (including the Phase 1 site). The new impervious area on this site is 51.4 acres, requiring infiltration of 186,600 cubic feet within 48 hours. The applicant proposes two infiltration basins. The basins have a combined volume of 222,700 cubic feet to infiltrate the required volume within 48-hours. The applicant meets Commission volume control requirements.

6. The erosion control plan includes rock construction entrances, silt fence surrounding detention ponds/infiltration basins, inlet protection, rip rap at inlets, slope checks, and native seed specified on the pond slopes. The erosion control plan meets Commission requirements.

7. The National Wetlands Inventory does not identify any wetlands on site. The applicant meets Commission wetland requirements.

8. There are no Public Waters on this site. The applicant meets Commission Public Waters requirements.

9. There is no FEMA-regulated floodplain on this site. The low floor elevations of the proposed buildings (849') are at least two feet higher than the high-water elevation of the sedimentation pond and infiltration basins (844.24') according to Atlas 14 precipitation. The applicant meets Commission floodplain requirements.

10. The site is in a Drinking Water Management Area but is outside of the Emergency Response Area. Therefore, infiltration is permitted, but infiltrated water must first filter through 1 foot of soil, the top four inches of which are amended topsoil, and the bottom 8 inches of which are tilled. The applicant proposes using 30 inches of 80% Sand, 10% organic compost, 10% topsoil (Mix E in the MN Stormwater Manual). The applicant meets Commission drinking water protection requirements.

11. A public hearing on the project was conducted on July 14, 2022 as part of the Planning Commission and City Council review of this project, meeting Commission public notice requirements.

12. A draft Operations & Maintenance (O&M) agreement between the applicant and the City of Brooklyn Center was not provided.

13. A Project Review Fee of $2500 has been received.

Recommendation: Approve subject to the following conditions:

1. After construction of the infiltration basins, demonstrate double-ring infiltrometer or witness test that the site can meet the design infiltration rate of 4.25 inches/hour for Infiltration Basins 1 & 2.

2. Provide a complete O&M agreement between the applicant and the City of Brooklyn Center for all stormwater facilities on the project site.

3. Revise the EOF or berm elevation. The EOF shall be at least 0.5' below top of berm. Sheet 52 shows the berm is at 848', but the EOF is at 847.81'.

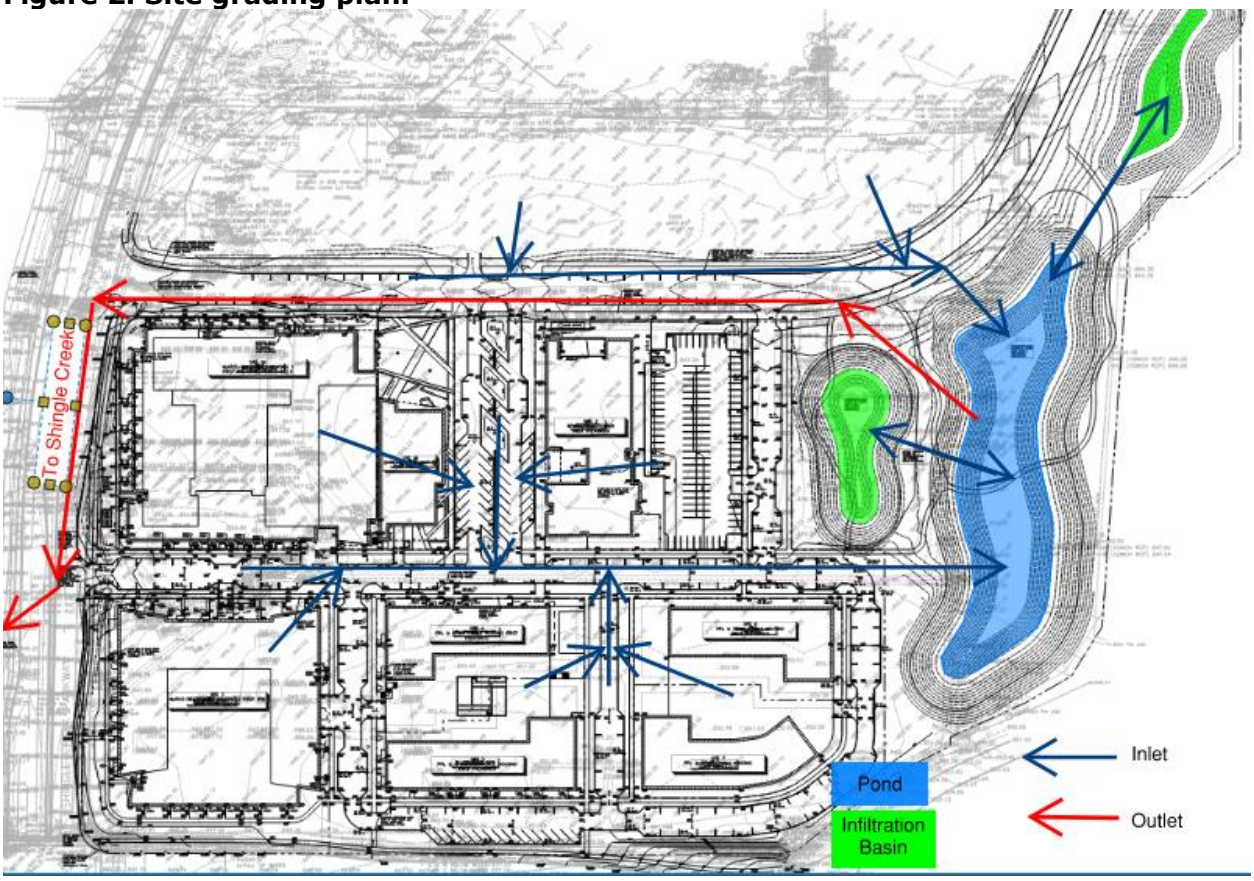
Stantec, Inc.
Engineers for the Commission

Todd Shoemaker, P.E. 12/1/2022

SC2022-06: Brooklyn Center Opportunity Site

Figure 1. Site location.

Figure 2. Site grading plan.



Stantec

Memo

To: Shingle Creek/West Mississippi WMC TAC

From: Todd Shoemaker PE

Date: November 30, 2022

Subject: Linear Project Review

Recommended Commission Action	Approve updated Rule A (Definitions) and "Project Review Thresholds."

INTRODUCTION

During the November 10, 2022 meetings, the TAC and Commissions discussed implementation of new thresholds for linear projects that became effective on October 1, 2022. TAC and Commission members agreed that review of linear projects would be conducted by the Commission for projects that create one or more acres of new impervious surface. Member cities would review projects that fully reconstructed one or more acres of new impervious surface. This is consistent with past implementation of Commission project reviews.

TAC members discussed in more depth, however, the definition of "fully reconstructed" and how the Commission standards may apply, specifically related to project disturbance area, disconnected project locations, mill and overlay projects, and full depth reclamation projects. Staff has reviewed Commission rules, definitions, and available guidance and notes the following considerations and recommendations.

CONSIDERATIONS

The "Project Review Thresholds" document serves as a "cheat sheet" for the Commission rules. That document had not been updated based on the new rules, and therefore, still referenced using disturbed area as the threshold for linear projects. An updated version is attached to this memo and now specifically identifies that linear project review thresholds are based on impervious area.

Staff also reviewed definitions stated in the October rules. We suggest a few refinements to improve clarity regarding linear projects: fully reconstructed impervious; full depth reclamation; and a figure to better show the differences between mill & overlay, full depth reclamation, and full reconstruction.

Another clarification requested by the TAC was regarding a project that may disturb several disconnected locations (i.e., bus stops for a new bus route or a linear utility project). Collectively, the

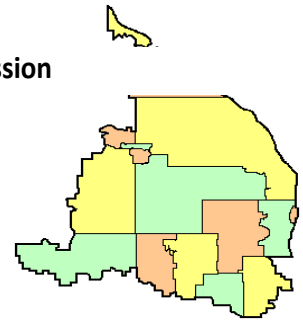
locations could exceed the Commission project review threshold but not individually. Staff added the Minnesota Pollution Control Agency's "Common Plan of Development" definition to Rule A (attached).

RECOMMENDATION

Staff recommends Commission approval to clarify the current versions of Rule A and "Project Review Thresholds" in accordance with the attached documents.

Shingle Creek Watershed Management Commission

West Mississippi Watershed Management Commission



PROJECT REVIEW THRESHOLDS

Table 1: Project review site size and disturbance area thresholds for all land uses except detached single-family residential.

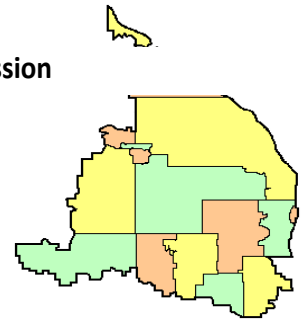
All Land Uses Except Detached Single-Family Residential			
Development Projects			
City Project Review (site size)			**Commission Project Review (site size)**
0.5 acres to < 1 acre	**≥ 1 acre to < 5 acres**		**≥5 acres**
Abstract 1.1" runoff from all impervious surface	Meet Commission rate, volume, and water quality requirements for the entire site		Meet Commission rate, volume, and water quality requirements for the entire site
Redevelopment Projects			
City Project Review (disturbance area)			**Commission Project Review (disturbance area)**
0.5 acres to < 1 acre	**≥ 1.0 acres to < 5 acre**		**≥5 acres**
Incorporate permanent water quality BMPs	<50% disturbed	Meet Commission rate, volume, and water quality and requirements for the disturbed area	Meet Commission rate, volume, and water quality requirements for the entire site
	≥50% disturbed	Meet Commission rate, volume, and water quality requirements for the entire site	
Linear Projects			
City Project Review			**Commission Project Review**
≥ 1.0 acres new and fully reconstructed impervious area if < 1.0 acres new impervious area OR ≥ 1.0 acres fully reconstructed impervious area			**≥ 1.0 acres new impervious area**
Meet Commission rate, volume, and water quality requirements for the new and/or fully reconstructed impervious area			Meet Commission rate, volume, and water quality requirements for the new and/or fully reconstructed impervious area

Table 2: Project review site size and disturbance area thresholds for detached single-family residential developments.

Detached Single-Family Residential Land Uses		
Development Projects		
City Project Review (site size)		**Commission Project Review (site size)**
≥ 1 acre to < 15 acres		**≥15 acres**
Meet Commission rate, volume, and water quality requirements for the entire site		Meet Commission rate, volume, and water quality requirements for the entire site
Redevelopment Projects		
City Project Review (disturbance size)		**Commission Project Review (disturbance area)**
≥ 1 acre to < 15 acres		**≥15 acres**
~~*Redevelopment projects*~~		~~*Redevelopment projects*~~
<50% disturbed	Meet Commission rate, volume, and water quality requirements for the disturbed area	Meet Commission rate, volume, and water quality requirements for the entire site
≥50% disturbed	Meet Commission rate, volume, and water quality requirements for the entire site	

Shingle Creek Watershed Management Commission

West Mississippi Watershed Management Commission



PROJECT REVIEW THRESHOLDS

Other Project Review Thresholds:

~~1. Linear projects that create or disturb one acre or more of impervious surface must meet Commission requirements.~~

~~2.~~1. Plans of any land development or individual site development adjacent to or within a lake, wetland, or a natural or altered watercourse as listed in the final inventory of Protected Waters and Wetlands for Hennepin County, as prepared by the DNR. Projects impacting wetlands where the Commission acts as LGU for Wetland Conservation Act administration must be reviewed by the respective Commission regardless of size.

~~3.~~2. Plans for any land development or site development within the 100-year floodplain as defined by the Flood Insurance Study for the member city.

~~4.~~3. Plans of any land development or site development regardless of size if such review is requested by a member city.

RULE A - DEFINITIONS

For the purposes of these Rules, unless the context otherwise requires, the following words and terms shall have the meanings set forth below. References in these Rules to specific sections of the Minnesota Statutes or Rules include amendments, revisions, or recodifications of such sections. The words "shall" and "must" are mandatory; the word "may" is permissive.

Abstraction. Removal of stormwater from runoff, by such methods as infiltration, evaporation, transpiration by vegetation, and capture and reuse, such as capturing runoff for use as irrigation water.

Agricultural Activity. The use of land to produce agronomic, horticultural or silvicultural crops, including nursery stock, sod, fruits, vegetables, flowers, cover crops, grains, Christmas trees, and grazing.

Alteration or Alter. When used in connection with public waters or wetlands, any activity that will change or diminish the course, current, or cross-section of public waters or wetlands.

Applicant. Any person or political subdivision that submits an application to the Commissions for a project review under these Rules.

Best Management Practices (BMPs). Techniques proven to be effective in controlling runoff, erosion and sedimentation including those documented in the Minnesota Construction Site Erosion and Sediment Control Planning Handbook (BWSR 1988), Protecting Water Quality in Urban Areas (MPCA 2000), and the Minnesota Stormwater Manual (MPCA 2005) as revised.

Biofiltration. Using living material to capture and/or biologically degrade or process pollutants prior to discharging stormwater, such as directing runoff through a vegetated buffer or to a rain garden or vegetated basin with an underdrain.

Bioretention. A terrestrial-based (upland, as opposed to wetland) water quality and water quantity control process. Bioretention employs a simplistic, site-integrated design that provides opportunity for runoff infiltration, filtration, storage and water uptake by vegetation.

Buffer Strip. An area of natural, unmaintained, vegetated ground cover abutting or surrounding a watercourse or wetland.

BWSR. The Minnesota Board of Water and Soil Resources.

Commission. The Shingle Creek or West Mississippi Watershed Management Commission, as applicable.

Commissioners. The Board of Commissioners of the Shingle Creek or West Mississippi Watershed Management Commissions.

Compensatory Storage. Excavated volume of material below the floodplain elevation required to offset floodplain fill.

Common Plan of Development. A common plan of development or sale means a contiguous area where multiple, separate and distinct land disturbing activities may be taking place at different times, on different schedules, under one proposed plan. A "common plan" may consist of non-contiguous separate projects. In this case, for discrete construction projects that are located within a larger common plan that are at least one fourth mile apart, each project (e.g., individual structure) can be treated as a separate plan of development or sale provided no land disturbing activity is proposed between the projects.

County. Hennepin County, Minnesota.

Dead Storage. The permanent pool volume of a water basin or the volume below the runout elevation of a water basin.

Detention Basin. Any natural or manmade depression for the temporary storage of runoff.

Development. The construction of any structure on or the subdivision of land.

Drain or Drainage. Any method for removing or diverting water from waterbodies, including excavation of an open ditch, installation of subsurface drainage tile, filling, diking, or pumping.

Erosion. The wearing away of the ground surface as a result of wind, flowing water, ice movement, or land disturbing activities.

Erosion and Sediment Control Plan. A plan of best management practices (BMPs) or equivalent measures designed to control runoff and erosion and to retain or control sediment on land during the period of land disturbing activities in accordance with the standards set forth in these Rules.

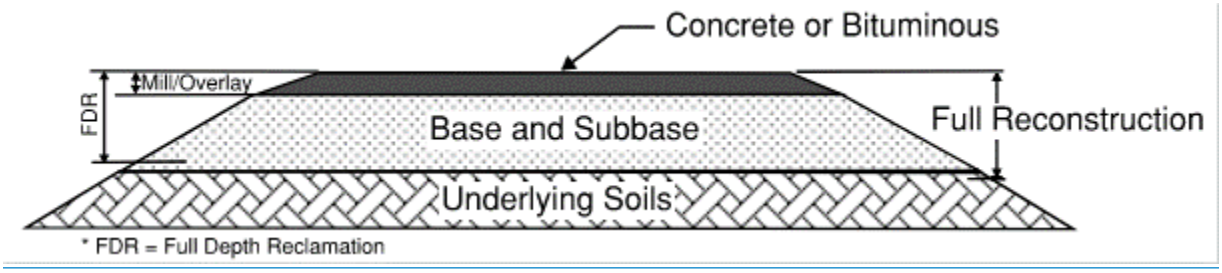
Excavation. The artificial removal of soil or other earth material.

Fill. The deposit of soil or other material by artificial means.

Filtration. A process by which stormwater runoff is captured, temporarily stored, and routed through a filter bed to improve water quality and slow down stormwater runoff.

Floodplain. The area adjacent to a waterbody that is inundated during a 100-year flood.

Fully Reconstructed Impervious. –Areas where impervious surfaces have been removed down to the underlying soils. Activities such as structure renovation, mill and overlay projects, full depth reclamation projects, and other pavement rehabilitation projects that do not expose underlying soils beneath the structure, pavement, or activity are not considered fully reconstructed (see figure below). Maintenance activities such as catch basin repair/replacement, utility repair/replacement, pipe repair/replacement, lighting, and pedestrian ramp improvements are not considered fully reconstructed.



Full Depth Reclamation. A rehabilitation method in which the full thickness of the asphalt pavement is pulverized and blended with a predetermined portion of underlying materials (base and/or subbase) to provide an upgraded, homogeneous material.

Impaired Water. A waterbody that does not meet state water quality standards and that has been included on the MPCA Section 303(d) list of Impaired Waters of the state.

Impervious Surface. A surface compacted or covered with material so as to be highly resistant to infiltration by runoff. Impervious surface shall include roads, driveways and parking areas, whether or not paved, sidewalks greater than 3 feet wide, patios, tennis and basketball courts, swimming pools, covered decks and other structures. Open decks with joints at least ¼ inch wide, areas beneath overhangs less than 2 feet wide, and sidewalks 3 feet or less wide shall not constitute impervious surfaces under these Rules.

Infiltration. The passage of water into the ground through the soil.

Infiltration Area. Natural or constructed depression located in permeable soils that capture, store, and infiltrate the volume of stormwater runoff associated with a particular design event.

Interested Party. A person or political subdivision with an interest in the pending subject matter.

Land Disturbing Activity. Any activity on property that results in a change or alteration in the existing ground cover (both vegetative and non-vegetative) an/or the existing soil topography. Land disturbing activities include, but are not limited to: development, redevelopment, demolition, construction, reconstruction, clearing, grading, filling, stockpiling, excavation, and borrow pits. The use of land for agricultural activities shall not constitute a land disturbing activity under these Rules. Routine vegetation management, and pavement milling/overlay activities that

do not disturb the material beneath the pavement base will not be considered land disturbance or fully reconstructed impervious surface.

Landlocked Basin. A basin that is 1 acre or more in size and does not have a natural outlet at or below the 100-year flood elevation as determined by the 100-year, 10-day runoff event.

Linear project. Linear projects are projects with construction of new or fully reconstructed roads, trails, sidewalks, or rail lines that are not part of a common plan of development or sale.

Low Opening. The low opening is the lowest elevation of an enclosed area, such as a basement, that allows surface water to into the enclosed area. Examples of low openings, include but are not limited to doors and windows. Foundation wall cracks, drainage seepage through drain tile, and sewer backup elevations are not low openings.

Member City. Any city wholly or partly within the Commission's boundary that has executed the Joint Powers Agreement.

MnDOT. The Minnesota Department of Transportation.

MPCA. The Minnesota Pollution Control Agency.

Municipality. Any city wholly or partly within the Commission's boundary.

NPDES. National Pollutant Discharge Elimination System.

NRCS. The Natural Resource Conservation Service.

NURP. The Nationwide Urban Runoff Program developed by the Environmental Protection Agency to study stormwater runoff from urban development.

Ordinary High Water Level (OHW). The elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape. The ordinary high-water level is commonly the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the OHW level is the elevation of the top of the bank of the channel. For reservoirs and flowages, the OHW level is the operating elevation for the normal summer pool. For Public Waters and Public Waters Wetlands, the Minnesota Department of Natural Resources (DNR) determines the OHW.

Owner. The owner of a parcel of land or the purchaser under a contract for deed.

Parcel. A parcel of land designated by plat, metes, and bounds, registered land survey, auditor's subdivision, or other accepted means and separated from other parcels or portions by its designation.

Person. Any individual, trustee, partnership, unincorporated association, limited liability company or corporation.

Political Subdivision. A municipality, county or other political division, agency or subdivision of the state.

Project. A space, parcel, or parcels of real property owned by one or more than one person which is being or is capable of being developed or redeveloped as a single project.

Public Health and General Welfare. Defined in Minnesota Statutes, Section 103D.011, Subdivisions 23 and 24.

Public Waters. Any waters as defined in Minnesota Statutes, Section 103G.005, Subdivision 15.

Public Waters Wetland. Any wetland as defined in Minnesota Statutes, Section 103G.005, Subdivision 15a.

Redevelopment. Land-disturbing activity that creates or replaces impervious surface on a parcel that is fully or partially occupied by buildings and/or impervious surface except for Linear Transportation Projects.

Runoff. Rainfall, snowmelt or irrigation water flowing over the ground surface.

Sediment. Soil or other surficial material transported by surface water as a product of erosion.

Sedimentation. The process or action of depositing sediment.

Shoreland Protection Zone. Land located within a floodplain or within 1,000 feet of the OHW of a public water or public waters wetland.

Site. A space, parcel, or parcels of real property owned by one or more than one person which is being or is capable of being developed or redeveloped as a single project.

Standard. A required level of quantity, quality, or value.

Stormwater Management Plan. A plan for the permanent management and control of runoff prepared and implemented in accordance with the standards set forth in these Rules.

Structure. Anything manufactured, constructed, or erected which is normally attached to or positioned on land, including portable structures, earthen structures, roads, water and storage systems, drainage facilities and parking lots.

Subdivision or Subdivide. The separation of a parcel of land into two or more parcels.

TMDL. The Total Maximum Daily Load is the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. "TMDL" can also refer to a study that calculates that load, or to the allocation of that allowable load to its various sources. An Implementation Plan may be part of the TMDL study, or it may be a separate document that sets forth the steps that will be taken to achieve the TMDL.

Underlying Soils. Material located beneath the base and subbase layers of a road reconstruction project. Material located beneath the subbase could be native soils or fill material.

Volume Management. The retention and abstraction of a certain volume of stormwater runoff onsite through techniques such as infiltration, evapotranspiration, and capture and reuse.

Water Basin. An enclosed natural depression with definable banks capable of containing water that may be partly filled with public waters.

Waterbody. All water basins, watercourses and wetlands as defined in these Rules.

Watercourse. Any natural or improved stream, river, creek, ditch, channel, culvert, drain, gully, swale, or wash in which waters flow continuously or intermittently in a definite direction.

Water Resources Management Plan. The watershed management plan for the Commission adopted and implemented in accordance with Minnesota Statutes, Section 103B.231.

Watershed. Region draining to a specific watercourse or water basin.

Wetland. Land transitional between terrestrial and aquatic systems as defined in Minnesota Statutes, Section 103G.005, Subdivision 19.

Wetland Conservation Act (WCA). Minnesota Wetland Conservation Act of 1991 as amended.

Stantec

Memo

To: Shingle Creek/West Mississippi WMC TAC & Commissions

From: Todd Shoemaker, PE

Date: November 30, 2022

Subject: SC/WM legal boundary revision update and contract amendment request

Requested Action	For discussion. Each Commission should by motion approve the contract amendment and allocate funds from their respective Cost Share Project accounts.

UPDATES

- Bassett Creek WMC issued their concurrence letter on November 16, 2022.
- An amendment to the Bassett Creek WMC letter may be necessary due to a forthcoming City of Robbinsdale project.
- Staff completed final boundary edits based on comments from the City of Champlin and the Elm Creek WMC.
- We expect the Elm Creek WMC will consider the boundary update at their December 14th meeting.
- We expect the Mississippi WMC will consider the boundary update at their January 10th meeting.
- After preparation by legal counsel, we will distribute concurrence letter templates to affected cities and request official action.
- After receipt of all watershed and municipal concurrence letters, the boundary update will be submitted to Hennepin County, so the County can update the watershed's special taxing district. Submittal by July 1st of an updated boundary map and a list of parcels within the new boundaries will ensure the update is included in the following year's taxes.

CONTRACT AMENDMENT

Updating the legal boundary has required more time than originally budgeted by staff. Therefore, we request the TAC and Commission consider authorizing an additional $10,000 to complete the update.

At the June 2022 meeting, the SC and WM Commissions authorized a scope of work and budget of $27,900, split equally between each Commission, for the legal boundary update. The approved budget included $19,000 for the boundary analysis and reporting and was based on adjusting approximately 200-300 parcels. Upon completion of the analysis, though, the actual number of parcels evaluated was

between 1,000 and 1,500. Related to that number, we found more discrepancies than expected between the existing hydrologic boundary for the Shingle Creek and Elm Creek WMCs. These two factors, in turn, resulted in more time to evaluate “micro” features between hydrologic boundaries:

- Areas with storm sewer intersecting the defined hydrologic boundary,
- Discrepancies/gaps between neighboring hydrologic boundaries,
- Outlets not clearly identified,
- Pumped systems, and
- Multiple storm sewer lines with an unclear drainage direction.

Should the Commissions approve this amendment, staff recommend that the additional $10,000 cost be split equally between the two watersheds and funds be reallocated from each Commission’s Cost Share Projects accounts, both of which are carrying balances well above the maximum recommended by the Cost Share Policy. (Shingle Creek has about $330,000 and West Mississippi has about $390,000).

Stantec

Memo

To: Shingle Creek/West Mississippi WMO Commissioners

From: Todd Shoemaker PE
Diane Spector
Katie Kemmitt

Date: December 1, 2022

Subject: 2022 Annual Progress Review

Recommended Commission Action	Review, discuss, and accept the attached 2022 Annual Progress Review.

The Third Generation Watershed Management Plan states that the Commissions will annually review progress toward Third Generation goals, and that this evaluation will become part of the Annual Report. There is no specific format for such an annual review. Since the Third Generation Plan was adopted, the Board of Water and Soil Resources (BWSR) adopted revised Minnesota Rules 8410 that requires WMOs to review progress every two years.

The purpose of the annual review is first to determine progress towards the goals, and second to be sure the Commissions stay on track to reach them. The annual review is also an opportunity to discuss whether the goals and actions in the Plan still make sense or if they should be considered for modification or enhancement, perhaps to add in new priorities. Ideally, this annual review is also an opportunity to start thinking about your next year's work plan.

Review of Progress

As we close out the Third Generation Plan in anticipation of adopting the final Fourth Generation Plan in spring 2023, this will be our final review of progress toward our Third Generation goals. Attached is matrix showing the final review of progress. You may remember this format from the Performance Review completed as part of the Fourth Generation Plan process. This matrix has been updated to include 2022 activities. These findings will be reported in your 2022 Annual Report to BWSR.

2022 Highlights

Some non-routine highlights of the past year include:

<u>FOURTH GENERATION PLAN</u>

- The Commissions spent a considerable time on developing the Fourth Generation Plan, completing a draft that was made available for informal review and then starting the formal review period, which will run from November 2022 to January 2023. Aside from preparing the actual plan document and the 10-Year Implementation Plan, the Commissions:
    - Participated in a joint Equity in Watershed Management workshop with the Bassett Creek WMO to talk about strategies for enhanced inclusion and equity in our work as stewards of

natural and water resources in the watersheds. The workshop included presentations by County, Metro Blooms, and Mississippi WMO staff, personal reflections on Environmental Justice work by the Executive Director of a nonprofit that serves diverse and underrepresented communities, as well as small group discussions and reflections.
  - Undertook a major update to both the legal and hydrologic boundaries between the watersheds and neighboring Elm Creek, Bassett Creek, and Mississippi WMOs.
  - Refreshed the website and added an interactive Story Map providing users map-based links to water quality, natural resource, and project data.

CAPITAL AND COST SHARE PROJECTS

- Worked with the City of Robbinsdale to undertake the second alum treatment on Crystal Lakes and on the second year of carp removals on Crystal Lake.
- Worked with the City of Plymouth and the Bass Lake Improvement Association on the third year of curly-leaf pondweed treatment and to complete a grant-funded aquatic vegetation translocation project to test ways of increasing plant diversity in Bass Lake.
- Continued to monitor conditions in Meadow Lake following completion of the drawdown in winter 2021-2022 and prepare for potential alum and aquatic vegetation treatments in 2023.
- Completed work on the Connections IOI and Bass Creek Stream Restoration Projects.
- Executed a Clean Water Fund Grant with BWSR and a cooperative agreement with the City of Plymouth for the Palmer Creek Estates channel stabilization project. Design is now complete, and it is expected to be constructed in winter 2022-2023.
- The Commission by Minor Plan Amendment created a new Capital Projects Maintenance Fund intended to support the completion of ongoing activities needed to continue the benefits achieved by capital projects.
- Shingle Creek had previously awarded a Partnership Cost Share grant to the City of Brooklyn Park and Metro Blooms for water quality and sustainable landscaping site improvements at the Brooks Gardens Apartments near Shingle Creek. In 2022, that work was awarded a Local Sustainability Impact award by the Minnesota Environmental initiative.

GRANTS

- Worked with the City of Brooklyn Park and Hennepin County to prepare and submit a Clean Water Find grant application for the Mississippi Riverbank Stabilization Project.
- Prepared an application to the MPCA to complete a Flood Resiliency and Mapping study in 2023.
- Met with the Shingle Creek and West Mississippi Watershed Based Implementation Funding (WBIF) Convene Groups four times to identify and select funding priorities for their $95,501 and $75,000 2022 WBIF awards. As part of that work, the four WMOs in WMWA plus the Richfield-Bloomington WMO agreed to pool some of their WBIF resources to fund a shared Education and Outreach Coordinator with Hennepin County.
- In 2018, the 11 WMOs in Hennepin County elected to pool 10% of their WBIF grants to fund the Hennepin County Chloride Initiative (HCCI), recognizing that properly managing chloride use was a common water quality issue. The group explored various management topics and approaches, which has culminated in the development of a professional marketing campaign called “Low Salt No Salt Minnesota,” which will be rolled out in 2023 by each of the WMOs and many cities.

Water Quantity

Third Generation Goals	Progress Toward Goals	Expected Completion	Status
A.1 Maintain the existing 100-year flood profile throughout the watersheds.	Ongoing.	Completed. Assumes rules and standards requiring 100-yr runoff rates to not exceed predevelopment rates limits any increase in profile.	Complete & ongoing
A.2 Determine ecological low flows for Shingle and Bass Creeks	Not yet completed.	Will not be completed.	Not met

Water Quantity Actions:

Third Generation Actions	Completed in 2022	Completed to Date	Expected Completion	Status
a. Maintain and update as necessary a calibrated hydraulic model of Shingle Creek and its tributaries	Updated flood mapping still working through the DNR/FEMA process.	Completed work on the HUC8* study. Model is usable.	Model is fully functional but new approved flood maps will likely take 2-4 years.	Complete
b. Maintain rules and standards requiring new development and redevelopment to control the rate and volume of runoff discharged from their sites and update those standards as necessary.	Updated rules and standards to reflect new NPDES requirements for linear projects and make general housekeeping revisions.	Rules and standards revised as necessary to reflect new standards and practices.	Will continue to monitor industry developments and regulations and revise rules and standards as necessary.	Complete & ongoing
c. Develop a sustainable water budget for each watershed and an action plan for management activities necessary for its achievement	None.	None.	Will not be completed.	Not met

*HUC = Hydrologic Unit Code

Water Quality

Third Generation Goals	Progress Toward Goals	Expected Completion	Status
B.1 As lake water quality improves and lakes are removed from the State's Impaired Waters list, implement management strategies to protect lake water quality. It is anticipated that Schmidt, Lower Twin, and Ryan Lakes will be removed in 2014.	Schmidt, Lower Twin, and Ryan are removed from the 303(d) list. The curly-leaf pondweed on Upper Twin has been monitored and treated for 3 years. About 40% of the target biomass of carp have been removed. Plymouth continues enhanced street sweeping in Schmidt Lake area.	Will continue to implement protection strategies as funding and opportunities are available.	Complete & ongoing
B.2 Implement phosphorus and sediment load reduction actions sufficient to achieve de-listing from the Impaired Waters list for Bass, Eagle, Crystal, and Middle Twin Lakes.	Alum treatments for Bass Lake were completed in 2019 and 2020. Alum treatments for Crystal Lake and carp removals were completed in 2021 and 2022. Bass Lake will be Delisted in 2024.	Projects are underway for Crystal, not clear at this time whether additional actions will be necessary to meet the state standards goal. Eagle Lake is slated for management in 2023-2025. Middle Twin likely won't meet goal until more improvement is made to Upper Twin.	Bass completed, others not completed
B.3 Improve water clarity in the balance of the lakes by 10% over the average of the previous ten years.	Success is variable. Alum treatments for Pomerleau completed in 2019 and 2020 and lake now meets state standard.	Pomerleau now meets standard, and if this persists may be delisted by 2024. Will continue to implement load-reduction projects as funding and opportunities are available.	Pomerleau completed, others not completed
B.4 Improve at least 30% of the length of Shingle Creek to meet Corridor Study and TMDL design standards.	As of 2022, 3.42 miles, or 30.6% of the 11.15 miles have been restored.	Completed and ongoing	Complete
B.5 Maintain nondegradation of all waterbodies compared to 1985 conditions.	Review of water quality data at the Shingle Creek outlet site shows TSS concentrations have decreased 25% since 2000 and TP by 35%. Need more data to evaluate lake progress.	Will continue to implement load-reduction projects as funding and opportunities are available.	Complete & ongoing

Water Quality Actions:

Third Generation Actions	Completed in 2022	Completed to Date	Expected Completion	Status
a. Maintain and update as necessary calibrated P8 models for each lakeshed in Shingle Creek and the major drainage areas of West Mississippi.	None.	P8 models for each lakeshed, calibrated to XPSWMM. Models updated as necessary for TMDL reviews.	Will make updates to lakeshed models as necessary as next round of the TMDL 5 Year Reviews.	Complete & ongoing
b. Maintain rules and standards requiring new development and redevelopment to control the total phosphorus and total suspended solids discharged from their sites and update those standards as necessary.	Updated rules and standards to reflect new NPDES requirements for linear projects and make general housekeeping revisions.	Rules and standards revised as necessary to reflect new standards and practices.	Will continue to monitor industry developments and regulations and revise rules and standards as necessary.	Complete & ongoing
c. Conduct an intensive BMP assessment for at least 25% of that part of the watershed that developed prior to Commission rules in 1984 and achieve 25% of the recommended load reduction within 10 years of the analysis.	*Shingle:* None. *West Miss:* None.	*Shingle:* Completed assessments on 3,387 acres of 23,497 acres developed prior to 1984, or 14%. *West Miss:* Completed assessments on 1,495 acres of 7,023 acres developed prior to 1984, or 21%.	*Shingle:* Did not meet goal, but additional assessments expected in 2023-2024. More achievable goal is 15%, or 3,525 acres. *West Miss:* Did not achieve goal.	*Shingle:* Not complete *West Miss:* Not complete
d. Contribute 25% of the cost of TMDL implementation capital projects (up to $250,000).	*Shingle:* No CIPs but contributing $200,000 to three 2022 cost share programs. *West Miss:* No CIPs but contributing $150,000 to two 2022 cost share programs.	*Shingle:* Contributed $4,369,450 to 31 projects since 2013. *West Miss:* Contributed $1,131,050 to 16 projects since 2013.	Will continue to contribute to projects submitted to the Commissions' CIP.	On track

Third Generation Actions	Completed in 2022	Completed to Date	Expected Completion	Status
e. Pursue grant and other funding to implement improvement projects and feasibility studies.	Received $95,501 (SC) and $75,000 (WM) Watershed Based Implementation Funding from BWSR. One CWF application pending.	Since 2013 received 21 grants totaling $3,635,963.	Will continue to seek grant funding for projects and special studies.	Complete & ongoing
f. Prepare and implement an Annual Monitoring Plan and conduct monitoring necessary to evaluate water quality conditions and trends in the lakes and streams in the two watersheds.	Completed and approved by the Commissions in February 2022.	Completed annually.	Will continue to complete annually.	Complete & ongoing
g. Evaluate progress toward achieving TMDL goals every five years following adoption of the respective Implementation Plans.	Shingle Creek DO and Biotic Review underway.	Have completed review of chloride, all the lakes.	Shingle Creek DO and Biotic Review will be completed in 2022-23. All 5 Year Reviews of all TMDLs are expected to be completed by 2023.	Completed

Groundwater

Third Generation Goals	Progress Toward Goals	Expected Completion	Status
C.1 Infiltrate stormwater runoff from new impervious surface.	New requirements incorporated into Third Gen Plan and enforced for ongoing development.	Will continue to enforce and to urge voluntary compliance where infiltration is not required.	Complete & ongoing
C.2 Identify opportunities for and implement projects to infiltrate runoff from existing impervious surface.	Have completed five subwatershed assessments that have identified infiltration BMPs.	Will continue to implement volume reduction projects as funding and opportunities are available.	Complete & ongoing
C.3 Work with the appropriate state agencies to incorporate groundwater assessment into the sustainable water budget analysis for each watershed	Not yet completed.	Will not be completed.	Not complete

Groundwater Actions:

Third Generation Actions	Completed in 2022	Completed to Date	Expected Completion	Status
a. Maintain rules and standards requiring new development and redevelopment to abstract or infiltrate stormwater runoff from new impervious surface and update those standards as necessary.	Updated rules and standards to reflect new NPDES requirements for linear projects and make general housekeeping revisions.	Rules and standards revised as necessary to reflect new standards and practices.	Will continue to monitor industry developments and regulations and revise rules and standards as necessary.	Complete & ongoing
b. Conduct an intensive BMP assessment for at least 25% of that part of the watershed that developed prior to Commission rules in 1984 and achieve 25% of the recommended volume reduction within 10 years of the analysis.	*Shingle:* None. *West Miss:* None.	*Shingle:* Completed assessments on 3,387 acres of 23,497 acres developed prior to 1984, or 14%. *West Miss:* Completed assessments on 1,495 acres of 7,023 acres developed prior to 1984, or 21%.	*Shingle:* Did not meet goal, but additional assessments expected in 2023-2024. More achievable goal is 15%, or 3,525 acres. *West Miss:* Did not achieve goal.	*Shingle:* Not complete *West Miss:* Not complete
c. Coordinate with the Minnesota DNR and other agencies to develop an action plan addressing surficial groundwater elevation issues in northern Brooklyn Park and the associated impacts on wetlands and Lake Success	None.	Preliminary conversations.	Will not be completed.	Not complete

Wetlands

Third Generation Goals	Progress Toward Goals	Expected Completion	Status
D.1 Maintain the existing functions and values of wetlands identified in the Commissions' Water Quality Plan as high priority.	Have not yet set up a process for evaluating this.	Not clear.	Not complete
D.2 Informed by the sustainable water budget study, improve functions and values of wetlands.	Will not be completed	Will not be completed	Not complete

Wetland Actions:

Third Generation Actions	Completed in 2022	Completed to Date	Expected Completion	Status
a. Adopt a wetland replacement sequencing policy.	None.	Rules and Standards include a sequencing policy.	Will continue to monitor regulatory needs and trends and consider rules and standards revisions as necessary.	Complete & ongoing
b. Identify wetland restoration opportunities and implement projects to restore wetland functions and values or to create new wetland acreage.	None.	Minor vegetation enhancement on Wetland 639W project.	Will continue to pursue grant funds and implement projects as funding is available.	Complete & ongoing

Drainage Systems

Third Generation Goals	Progress Toward Goals	Expected Completion	Status
E.1 Continue current Hennepin County jurisdiction over County Ditch #13	Continue current jurisdiction.	Will continue current jurisdiction unless otherwise agreed to.	Complete

Drainage System Actions:

Third Generation Actions	Completed in 2022	Completed to Date	Expected Completion	Status
a. Periodically reconsider the appropriate jurisdiction over County Ditch #13.	None.	Considered during development of the Fourth Gen Plan, no change.	Will reconsider as requested.	Complete

Commission Operations and Programming

Third Generation Goals	Progress Toward Goals	Expected Completion	Status
F.1 Identify and operate within a sustainable funding level that is affordable to member cities.	Commissions continue to operate within the Assessment Cap specified in the JPA.	Ongoing.	Complete & ongoing
F.2 Foster implementation of TMDL and other implementation projects by sharing in their cost and proactively seeking grant funds.	Contributed to 17 Shingle projects and to 6 West Miss projects since 2013. Established City BMP and Partnership Cost Share programs and contributed to 16 BMP retrofits in SC and 1 in WM. Received over $3 million in grants.	Will continue to cost-share through the county levy and to pursue grant funds and implement projects as funding is available.	Complete & ongoing
F.3 Operate a public education and outreach program that meets the NPDES Phase II education requirements for the member cities.	Shingle Creek and West Mississippi partner with Bassett Creek and Elm Creek and other agencies and nonprofits to provide education and outreach through the West Metro Water Alliance (WMWA). An annual report is provided to the member cities for the NPDES annual report.	Ongoing, in partnership with WMWA and other organizations.	Complete & ongoing
F.4 Operate a monitoring program sufficient to characterize water quantity, water quality, and biotic integrity in the watersheds and to evaluate progress toward meeting TMDL goals.	The Commissions operate ongoing lake, stream, and wetland monitoring programs using both commission technical staff and volunteers.	Complete & ongoing	Complete & ongoing
F.5 Maintain rules and standards for development and redevelopment that are consistent with local and regional TMDLs, federal guidelines, source water and well head protection requirements, sustainable water yields, nondegradation, and ecosystem management goals.	Updated rules and standards to reflect new NPDES requirements for linear projects and make general housekeeping revisions.	Will continue to monitor industry developments and regulations and revise rules and standards as necessary.	Complete & ongoing
F.6 Serve as a technical resource for member cities.	The Commissions maintain an ongoing Technical Advisory Committee.	Ongoing.	Complete & ongoing

Commission Operations and Programming Actions:

Third Generation Actions	Completed in 2022	Completed to Date	Expected Completion	Status
a. Annually review the budget and Capital Improvement Program.	Reviewed the budget and CIP, prepared a plan amendment to revise the CIP.	Established a process and schedule for annual review and modification of the CIP.	Ongoing annually.	Complete & ongoing
b. Maintain an Education and Public Outreach Committee (EPOC) that is charged with developing and implementing an annual education and outreach plan.	Most of the EPOC business is done in conjunction with WMWA. Continually updated website and registered nearly 7,300 unique page views January-November. Posted to social media and achieved 264 Facebook followers	Most of the EPOC business is done in conjunction with WMWA.	Ongoing.	Complete & ongoing
c. Prepare and implement an annual monitoring plan and summarize the results in an annual water quality report.	Monitoring plan approved by the Commissions in February 2022 and Annual Water Quality Report approved in April 2022.	Completed annually.	Ongoing annually.	Complete & ongoing
d. According to the schedules set forth in TMDL Implementation Plans, every five years evaluate progress toward meeting TMDL water quality goals, and adjust the Implementation Plans as necessary to achieve progress.	Shingle Creek DO and Biotic Review underway.	Have completed review of chloride and all lake TMDLs.	Shingle Creek DO and Biotic Review will be completed in 2022-2023. All 5 Year Reviews of all TMDLs are expected to be completed by 2023.	Complete & ongoing
e. Every five years or as necessary review the development rules and standards for adequacy and make revisions as necessary.	Updated rules and standards to reflect new NPDES requirements for linear projects and make general housekeeping revisions.	Rules and standards revised as necessary to reflect new standards and practices.	Will continue to monitor industry developments and regulations and revise rules and standards as necessary.	Complete & ongoing

Third Generation Actions	Completed in 2022	Completed to Date	Expected Completion	Status
f. Continue research projects on innovative and cost-effective stormwater management practices and technologies.	Completed submerged aquatic vegetation translocation project on Bass Lake	Received several grants to study modular green roofs, the Paired Intersection Study, and the Biochar- and Iron-Enhanced Sand Filters Project.	Will continue to seek grant resources and partnerships to conduct BMP research.	Complete & ongoing
g. Coordinate water resources management between the Commissions and the member cities.	Maintained an ongoing Technical Advisory Committee.	Maintained an ongoing Technical Advisory Committee.	Ongoing.	Complete & ongoing

Stantec

Memo

To: Shingle Creek WMC TAC/Commissioners

From: Todd Shoemaker PE
Lucas Clapp, EIT

Date: December 1, 2022

Subject: Cost Share Request by Metro Blooms for the construction of two rain gardens and a natural playground at Highland Gables.

Recommended Commission Action	Approval of cost-share request

Metro Blooms submitted a Partnership Cost Share Program application on behalf of Dwell Management Group for improvements at Highland Gables Apartments (Figure 1). The proposed improvements include two rain gardens and a playground constructed out of natural products (Figure 2). Metro Blooms requests a cost-share amount of $49,992.67.

The cost of the nature playground is $12,524.00 and includes the removal of 480 square feet of turf lawn for native plantings in the nature play area. Metro Blooms considers the nature play area integral for families and youth to be able to connect with nature and learn through play and realizes that 100% of the mulch, edging, and fabric don't pertain directly to a storm water BMP, but Metro Blooms is hoping the Commission will consider funding these items as part of broader goals of community engagement and education. The cost for the construction of the two raingardens and community engagement is $37,468.67.

Stantec has reviewed the preliminary plans and notes the following benefits of the project:

- Improving water quality (Table 1) by capturing untreated impervious area.
- Community engagement and outreach.
- Project is in the “most vulnerable area” of the Human Vulnerability map in the Hennepin County Climate Change plan.

Table 1. Water quality benefits of the proposed project.

	Volume Captured (cf)	TSS Reduction (lb/yr)	TP Reduction (lb/yr)	Normalized Cost ($/lb TP)
Two Raingardens*	2,000	140	0.74	$1700**

*Double counted roof area was recalculated using MIDS
**Assumes cost-share is limited to raingarden construction and community engagement ($37,468.67).

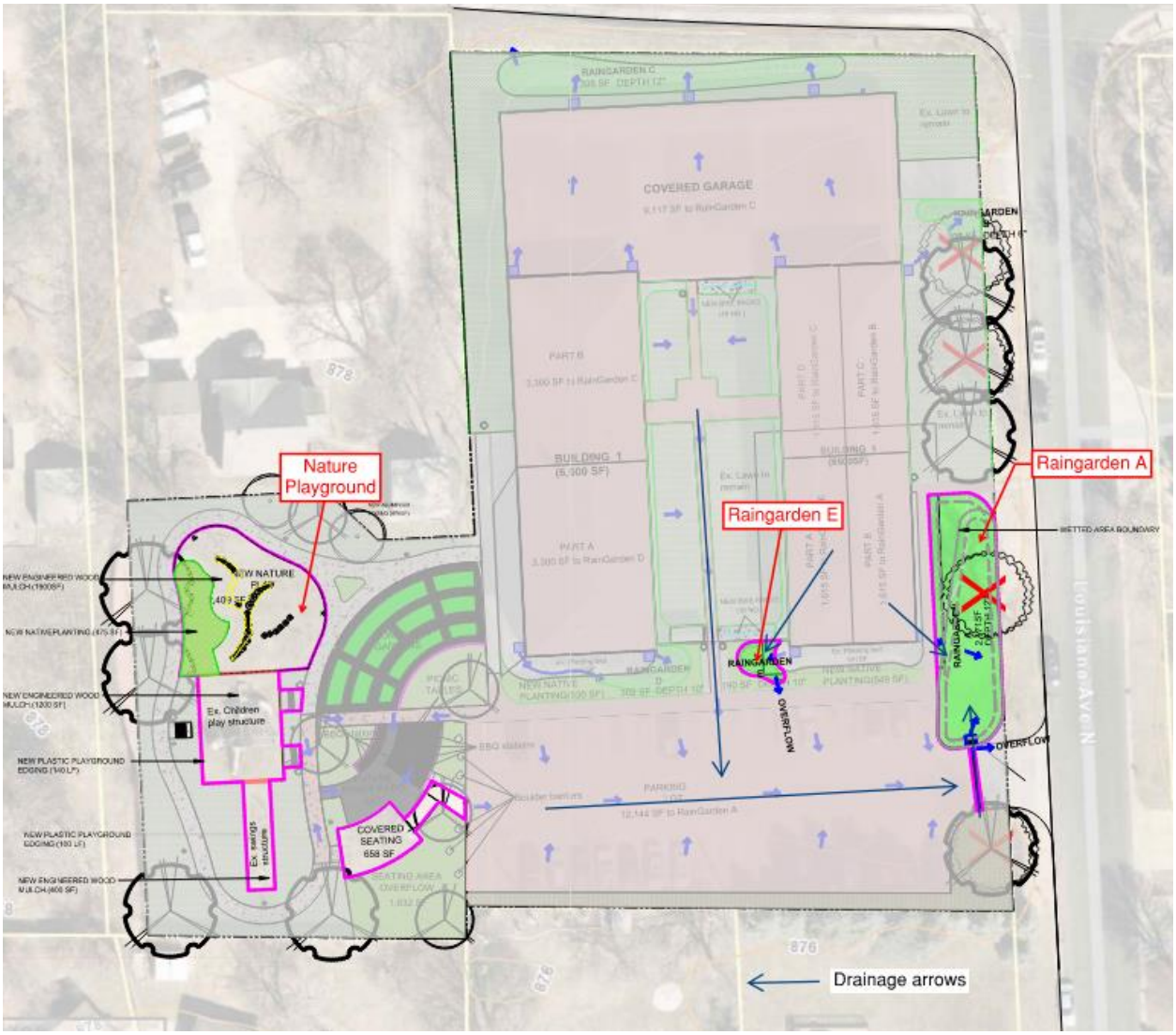
Stantec recommends approval with the following conditions:

1. Conduct soil borings to verify design infiltration rates.
2. Execute and record an Operations and Maintenance Agreement prior to release of any funds.

With the conditions noted above and the concurrence of the TAC, staff recommends approval of this cost share application with the amount to be determined based on TAC and Commission discussion. The balance in the Partnership Cost Share Fund is $104,000.

Figure 1. Project Location

Figure 2. Project Design Plans.



.

Stantec

Memo

To: Shingle Creek/West Mississippi WMO Commissioners/TAC

From: Todd Shoemaker, PE
Diane Spector

Date: December 1, 2022

Subject: MPCA Climate Resilience Grants

Recommended TAC/ Commission Action	Discuss and suggest any revisions. TAC consider making a recommendation to the Shingle Creek Commission regarding submittal of the application. Commission consider authorizing staff to submit the application.

The MPCA is now taking applications for the Planning Grants for Stormwater, Wastewater, and Community Resilience program (attached). $395,000 is available to support climate-planning projects in communities across Minnesota. This funding will help communities assess vulnerabilities and plan for the effects of Minnesota's changing climate in three areas:

- Improving stormwater resilience and reducing localized flood risk
- Improving the resilience of wastewater systems
- Adapting community services, ordinances, and public spaces

This was a new grant program in 2021, and the Commission approved submitting a grant application to use the Shingle Creek HUC8 model to estimate the potential impacts of future precipitation patterns. Unfortunately, it was not funded. In November you authorized development of an application for submittal this year using the same general work plan as last year. Last year the grant program did fund grants to a few other WMOs and cities to undertake essentially the same activities:

1. Model and map midcentury precipitation scenarios to create projected flood inundation areas for the 1%+ 24-hour rainfall event and the 1%+ 10 day event. A 'plus' is a rainfall depth taken from the 90th percentile estimate for the given rainfall frequency. FEMA often evaluates not only the 1% storm event but also the 1%+ storm event as a way to provide perspective on the range of values one COULD expect in the 1% event. The State Climatology Office also suggests using the 90th percentile as a proxy for midcentury precipitation.
2. Identify potential future flooding risks in the watershed by reviewing known flooding areas, infrastructure, structures, and emergency vehicle routes in or in close proximity to predicted future hazardous flood conditions.
3. Develop policy recommendations for using the scenario data. For example, this modeling could be used to help the cities and county better understand how to properly design new infrastructure such as culverts, bridges, etc. that would be expected to have a mid-century useful life.

One modification to last years' application added to the attached draft is some planning time to work with city Diversity and Inclusion (D & I) coordinators to conduct outreach to vulnerable communities

that may be more at risk from potential future flood risk. This grant prioritizes (but is not limited to) communities with higher concentrations of low-income residents, people of color and non-English speakers, including tribal communities. As you recall, much of the lower watershed including large parts of Minneapolis, Brooklyn Center, Brooklyn Park, Robbinsdale, Crystal, and New Hope are located in these MPCA-identified areas for Environmental Justice. Hopefully adding some more active outreach to better understand needs and impacts will be the oomph this application needs to be selected for funding.

Completing this type of resiliency modeling is called out in the Fourth Generation Plan as a priority implementation action. The cost of undertaking this work is estimated as $29,710, with a grant request of $26,200 and a local match of $3,510. (A minimum 10% match is required.)

Applications are due January 12, 2023. Staff suggests the TAC recommend and the Commission approve submittal of the grant application.

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Planning Grants for Stormwater, Wastewater, and Community Resilience

Application

FY 2023

Doc Type: Grant Application

Instructions: Read the complete *Request for Proposal (RFP)* and other associated documents before submitting this application.

Check the SWIFT Supplier Portal and the Minnesota Pollution Control Agency (MPCA) Planning Grants for SWC Resilience webpage for the most recent updates.

Applications are due no later than 4:00 p.m. Central Time (CT) on Thursday, January 12, 2023.

Submit application, workplan and budget (as Microsoft Word and Excel documents) per the instructions listed in Section 7 and 8 of the RFP.

1. Project information

Organization name: Shingle Creek Watershed Management Commission

Organization address: 3235 Fernbrook Lane N

City: Plymouth State: MN Zip code: 55447 County: Hennepin

Contact name: Judie Anderson Title: Administrator

Phone: 763-553-1144 Email address: judie@jass.biz

Organization type:

☐ Tribal government

☒ Local/Regional government (plus select one below)

- ☐ City
- ☐ County
- ☐ Town/Township
- ☐ Soil and Water Conservation District
- ☒ Watershed Management Organization
- ☐ Watershed District
- ☐ Regional Development Commission
- ☐ Metropolitan Council of the Twin Cities Region

Project focus area (choose one):

☒ Stormwater Resilience Planning

☐ Community Resilience Planning ☐ Wastewater Resilience Planning

Grant requested: $ 26,210 + Matching funds: $ 3,510 = Total project cost: $ 29,710

	Yes	No
1. Is applicant the sole source of matching funds for this project?	☒	☐
If **no,** is supporting documentation of commitment for cash or in-kind matching funds from outside organizations involved in the project attached?	☐	☐
If **no,** explain:		
2. Is applicant in compliance with Minnesota's tax and environmental regulatory requirements?	☒	☐
If **no,** explain:		

Project Title: Shingle Creek Resiliency Flood Modeling and Mapping

2. Project Details

2. What is the purpose of this project and with whom will you share the results: *The purpose of this project is to identify areas and infrastructure in the Shingle Creek watershed in Hennepin County that could be vulnerable to future flooding due to changing precipitation patterns, to start a community conversation about those future risks, and to identify and prioritize actions to increase stormwater climate resiliency. The results will be shared with the nine cities having land in the watershed, other government and institutional stakeholders, and potentially impacted property owners.*

3. What is the need for this project, and how will the planning that is proposed make a meaningful difference to the community in preparing for Minnesota's changing climate, including human health impacts? *The Shingle Creek Watershed Management Commission in partnership with the Minnesota DNR recently updated flood mapping for the Shingle Creek HUC 8 watershed. The proposed project would build on that work and add a climate resilience dimension by undertaking additional modeling to map two additional precipitation scenarios to represent the current best estimate of midcentury precipitation depths. The current watershed model is used to regulate and manage flood risk in the watershed and to identify infrastructure in need of protection or replacement. While the 44.5 square mile watershed is almost entirely developed, the nine cities in the watershed are continuously updating and replacing public infrastructure such as roads and utilities as well as facilities such as parks and trails. These investments will have a useful life of 50 years of more. As changing precipitation patterns accelerate, to protect public investment and maximize that useful life it is valuable to project where future flood risks may influence engineering decisions made today. A culvert being replaced today may need to be upsized to accommodate tomorrow's 1% streamflow event. Identifying where those future impacts might be and where priority actions should be considered will allow public, institutional, and private stakeholders to properly plan for the future.*

4. How will information about current Minnesota climate trends and projections of future climate conditions affecting the general location of the project be used in the methodology of this planning project: *The applicant's engineer has been in contact with Dr. Kenny Blumenfeld of the State Climatology Office, who has provided the state's best advice for predicting midcentury precipitation. Based on this input we have selected two additional precipitation events to model to "bracket" the potential midcentury risk area.*

5. Using the MPCA's criteria and interactive mapping tool (recently updated on the MPCA website with data from a five-year 2016-2020 summary of the American Community Survey), will the geographic area specifically addressed by the proposed planning project include one or more MPCA identified environmental justice (EJ) areas of concern, or an environmental justice area? ☒ Yes ☐ No

   If yes:

   a. Will the planning to be undertaken by this project yield benefits for communities within these EJ areas of concern? ☒ Yes ☐ No

i. If yes, describe these communities and how they will benefit: *The MPCA Interactive Environmental Justice Mapping Tool indicates that approximately half of the Shingle Creek watershed in the cities of north Minneapolis, Brooklyn Center, Brooklyn Park, Robbinsdale, Crystal, and New Hope fall within areas defined with high concentrations of poverty and or percentage of BIPOC residents. Properties in these communities tend to be older with a higher percentage of rentals. Infrastructure also tends to be older and originally designed to convey only the 1-2 year rain event whereas newer suburbs design to at least the 10 year event. This means increasingly intense precipitation will put those older communities at higher risk of critical infrastructure and private property flooding. Identifying those areas of increased risk well in advance of that change will provide the communities with a head start at planning and being proactive rather than reactive.*

ii. If yes, describe how the planning completed for this project will address concerns about equitable resilience for these communities compared with others within the geographic area covered by the project: *As noted above, the areas of EJ concern are often older with less resilient infrastructure compared to areas within the same watershed that may have more recently developed. Identifying those areas of increased risk well in advance of that change will provide the communities with a head start at planning and being proactive rather than reactive.*

b. Will these communities be provided the opportunity to have a voice in decision-making through substantive engagement as part of the planning completed for this project? ☒ Yes ☐ No
If yes, describe specifically how this will be done; if no, explain why not: *Several of the cities that are members of the joint powers WMO have D & I coordinators, and we will rely on their expertise and experience to reach out to affected EJ communities in a way that they have found works best within their communities.*

6. What are the potential barriers or challenges for this planning project, and how will they be addressed? *We do not foresee and significant barriers.*

7. How will this planning project result in assignment of responsibility for follow-up action(s) to increase local resilience: *One of the deliverables is a prioritized list of potential actions with an assignment of responsibility. The Shingle Creek Watershed Commission is a Joint Powers Organization comprised of and driven by nine member communities. This group is accustomed to joint planning and have worked together successfully on a number of surface water management projects. The Commission recently developed its Fourth Generation Watershed Management Plan, which establishes four priorities for 2023-2032, including:*

- ***Engage and educate.*** *Expand the public education and outreach program to reach more stakeholders, including vulnerable communities and historically underrepresented groups.*
- ***Develop climate resiliency and sustainability.*** *Anticipate and proactively work to understand and minimize adverse impacts from changing environmental and climate conditions.*

8. How will this project position a tribal/local government to pursue funding as needed to do follow-up implementation of the resilience project(s) for which planning was completed: *The outcome is a prioritized list of the most cost effective actions that could be taken, assuring funders that the actions proposed would have the biggest and most effective impact and support of stakeholders.*

3. Experience and qualifications

1. Describe **applicant's** experience and qualifications related to the applicant's role in the proposed planning project: *The Shingle Creek Watershed Management Commission has an ongoing contract with a consulting engineer to provide technical services as necessary, including serving as the Watershed Engineer as well as other services. Stantec Consulting Services, and formerly Wenck Associates, now part of Stantec, completed the HUC-8 EPA SWMM model update for the Shingle Creek watershed as well as some other watersheds in the Metro Area. Hydrologic and hydraulic*

modeling is a core service provided by staff in Stantec's Twin Cities offices. Several professional engineers in the local Water Resources group are Certified Floodplain Managers or are in the process of earning that certification. The project team are very familiar with the Shingle Creek watershed and have served that watershed for nearly 20 years. The proposed project manager is Todd Shoemaker, PE, CFM with lead modeler Erik Megow, PE, who completed the HUC-8 model update. Other modelers and GIS professionals will assist with the work.

2. Will anyone outside your organization be responsible for work performed? ☐ Yes ☒ No

   If yes, provide name of organization(s) and contact information, experience, and qualifications related to the proposed project, and describe the role of the outside organization(s) in the project:

3. Provide detailed information about the qualifications and experience – including with similar projects – of all the specific people who will work on this project, both within the applicant organization and from outside organization(s):

   Todd Shoemaker, PE, CFM. *Mr. Shoemaker is the Watershed Engineer for Shingle Creek and West Mississippi and has nearly 20 years of experience in water resources and environmental engineering. His water resources expertise includes watershed and stormwater management, hydrologic/hydraulic and water quality computer modeling, floodplain management and regulation, wetland restoration and permitting, as well as streambank stabilization.*

   - ***Shingle Creek Watershed Commission.*** *Used the updated EPA SWMM HUC8 model to test various scenarios evaluating emergency pumping options from a pond system and a lake with no natural outlet to develop an emergency pumping plan that minimized lake level impacts on a downstream receiving water.*
   - ***City of Dubuque, IA.*** *Mr. Shoemaker developed a 600-acre hydrology and hydraulics model using XP-SWMM to investigate flooding of a land-locked basin. He used 1D and 2D elements of the model to simulate surface flow into and out of the land-locked basin, which was used to show neighbors the source of flooding and where water went when it overflowed.*
   - ***City of Davenport, IA.*** *Developed a 65-square mile hydrology and hydraulics model using the EPA SWMM computer model to predict high water levels, flow rates, and velocities for current and anticipated future land use conditions. The model was used to identify stream reaches with high erosion potential and may serve as an update to the City's Flood Insurance Rate Map produced by FEMA.*
   - ***Coon Creek Watershed District (CCWD).*** *Mr. Shoemaker worked with GIS staff to update the existing CCWD HydroCAD model subwatershed maps and integrated the new GIS maps with an XP- SWMM model. The XP-SWMM model allows the CCWD to more accurately predict the high water elevations due to additional capabilities of XP-SWMM compared to HydroCAD.*

   Erik Megow, PE. *Erik is a Water Resources Engineer with over twelve years of experience as a consulting engineer. His primary expertise is stormwater best management practice design, regulatory review, hydraulic and hydrology modeling, stream restoration and stabilization design, floodplain analysis, stormwater management, and surface water mixing zone modeling. Erik has experience and is proficient using XP-SWMM, PC-SWMM, EPA-SWMM, HydroCAD, HEC-RAS, HY8, CORMIX, P8, MIDS, Qual2k, ArcMap (GIS), & ArcGIS Pro.*

   - ***Shingle Creek Watershed Commission.*** *Converted the Commission's existing XP SWMM model to EPA SWMM and completed the required HUC-8 flood risk assessment update.*
   - ***Elm Creek Watershed Commission****. Revised the Commission's draft HUC8 model to better reflect current conditions and improve calibration and completed the required HUC-8 flood risk assessment update.*
   - ***Minnehaha Creek Watershed District.*** *Converted the Commission's existing XP SWMM model to EPA SWMM and completed the required HUC-8 flood risk assessment update.*

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Planning Grants for Stormwater, Wastewater, and Community Resilience

Budget

Doc Type: Grant Application

					I.	II.	III.	IV.	V.
Cost category	Cost ($/unit)		Quantity (Qty/Unit)		Grant funds	Budgeted cash match	Budgeted in-kind match	Total budgeted match (II + III)	Total budget (I + IV)
Task 1 of 3:									
Task 1: Model Scenarios and Mapping									
Project Manager	$220.00	hour	2	hour	$440.00			$0.00	$440.00
Engineer	$178.00	hour	8	hour	$1,424.00			$0.00	$1,424.00
Modeler	$145.00	hour	32	hour	$4,640.00			$0.00	$4,640.00
GIS	$145.00	hour	40	hour	$5,800.00			$0.00	$5,800.00
								$0.00	$0.00
Total 1a					$12,304.00	$0.00	$0.00	$0.00	$12,304.00
Task 1 - Total					**$12,304.00**	**$0.00**	**$0.00**	**$0.00**	**$12,304.00**
Task 2 of 3: Vulnerability and Risk Assessment									
Subtask 2a: Identification of At-Risk Infrastructure									
Project Manager	$220.00	hour	4	hour	$880.00			$0.00	$880.00
Engineer	$178.00	hour	8	hour	$1,424.00			$0.00	$1,424.00
Modeler	$145.00	hour	2	hour	$290.00			$0.00	$290.00
Field Tech	$139.00	hour	12	hour	$1,668.00			$0.00	$1,668.00
								$0.00	$0.00
Total 2a					$4,262.00	$0.00	$0.00	$0.00	$4,262.00
Subtask 2b: Prioritizing Future Flood Hazard Mitigation Needs									
Project Manager	$220.00	hour	20	hour	$4,400.00			$0.00	$4,400.00
Engineer	$178.00	hour	16	hour	$2,848.00			$0.00	$2,848.00
Modeler	$145.00	hour	4	hour	$580.00			$0.00	$580.00
Planner	$195.00	hour	16	hour		$3,120.00		$3,120.00	$3,120.00
								$0.00	$0.00
Total 2b					$7,828.00	$3,120.00	$0.00	$3,120.00	$10,948.00
Task 2 - Total					**$12,090.00**	**$3,120.00**	**$0.00**	**$3,120.00**	**$15,210.00**
Task 3 of 3: Final Reporting									
Task 3: Final Report and Project Deliverables									

Cost category	Cost ($/unit)		Quantity (Qty/Unit)		Grant funds	Budgeted cash match	Budgeted in-kind match	Total budgeted match (II + III)	Total budget (I + IV)
Engineer	$178.00	hour	2	hour	$356.00			$0.00	$356.00
Modeler	$145.00	hour	8	hour	$1,160.00			$0.00	$1,160.00
GIS	$145.00	hour	2	hour	$290.00			$0.00	$290.00
Planner	$195.00	hour	2	hour		$390.00		$390.00	$390.00
								$0.00	$0.00
Total 3a					$1,806.00	$390.00	$0.00	$390.00	$2,196.00
Task 3 - Total					**$1,806.00**	**$390.00**	**$0.00**	**$390.00**	**$2,196.00**

Totals					**$26,200.00**	**$3,510.00**	**$0.00**	**$3,510.00**	**$29,710.00**

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Planning Grants for Stormwater, Wastewater, and Community Resilience

Project workplan

Doc Type: Grant Application

Project title:

Shingle Creek Resiliency Flood Modeling and Mapping

Statement of project details

The purpose of this project is to identify areas and infrastructure in the Shingle Creek Watershed that could be vulnerable to future flooding due to changing precipitation patterns, to start a community conversation about those future risks, and to identify and prioritize actions to increase stormwater climate resiliency.

Goal statement, project deliverable(s), tasks, and subtasks

Goal statement: The goal of this project is to develop hydrologic and hydraulic tools using the latest data and midcentury precipitation scenarios from the State Climatologist's Office to identify public, institutional, and private infrastructure that may be vulnerable to future flooding, to help the cities in the watershed and other stakeholders effectively plan, prioritize, and protect critical infrastructure before those issues occur.

Project deliverables: Updated flood modeling using the latest models and topographic data and maps showing potential future vulnerabilities for each of the proposed precipitation scenarios. A list of critical areas needing updated planning and design standards and/or infrastructure improvements to increase resilience and a prioritized plan of action.

Task 1 of 3: Model Scenarios and Mapping
The Shingle Creek HUC-8 watershed in Hennepin County has updated hydrologic/hydraulic models and preliminary flood hazard maps that reflect the most up to date conditions and Atlas 14 precipitation depths. While these tools can be used to assess current flood risk, they are backward-looking, using past precipitation records to attempt to predict future conditions. This task is using those H & H tools to undertake resiliency modeling and mapping to plan for future precipitation scenarios. Planning for pre-hazard mitigation projects will reduce long term flood associated costs along with providing a safer and more enjoyable environment for residents and property owners. The deliverables for this task include updated flood modeling and maps showing potential future flooding vulnerable areas for each of the proposed precipitation scenarios.

Subtask 1: Midcentury Flood Scenario Modeling and Mapping

Brief description of activities involved: Hydrologic and hydraulic modeling and projected flood inundation areas mapping for the 1% and 0.2% rainfall events from the EPA SWMM model have been recently updated for the Shingle Creek HUC-8 watershed. Atlas 14 rainfall depths are expressed as a range, with the commonly used "1%" and "0.2%" events actually the midpoint of that range of precipitation depths. This task is modeling and mapping midcentury precipitation scenarios to create projected flood inundation areas for the "1%+" 24-hour rainfall event and for the "1%+" 10-day event. A "plus" indicates a rainfall depth taken from the 90th percentile estimate for the given rainfall frequency. FEMA often evaluates Special Flood Hazard Areas for not only the 1% storm event but also for a 1%+ storm event as a way to provide perspective on the range of values one COULD expect in the 1% event. The State Climatology Office also suggests using the 90th percentile as a proxy for midcentury precipitation when planning and designing long-lived transportation projects. This is how resiliency and risk will be evaluated for this project – a range of values rather than just one precipitation depth point. The HUC8 modeling determined that the 10-day snowmelt event is the critical event for Shingle Creek, so modeling the 10-day+ event will help to bracket the future risk.

Timeframe: Project Inception (assumed April 2023) – August 2023
Name and Title of person(s) responsible: Consulting engineers – Todd Shoemaker, P.E. Watershed Engineer; watershed Technical Advisory Committee (TAC)

Task 2 of 3: Vulnerability and Risk Assessment

This task is the review of the flood mapping results with community stakeholders to identify and inventory potential infrastructure impacts and other vulnerabilities and risks and to discuss potential future actions by cities and other stakeholders and a preliminary plan of action. The deliverable for this task is a prioritized list of critical areas that would benefit from infrastructure improvements or further planning to increase resilience.

Subtask 2a: Identification of At-Risk Infrastructure

Brief description of activities involved: The updated flood maps for each of the four midcentury precipitation scenarios (1% and 0.2% unchanged; 1%+ 24-hour and 1%+ 10 day event) will be the starting point for identifying potential future vulnerabilities and flooding risks in the watershed. Critical infrastructure, structures, and emergency vehicle routes will be added to the maps in GIS. This will reveal where there are facilities in or in close proximity to hazardous flood conditions. The watershed Technical Advisory Committee (TAC), which is comprised of engineering and water resources professionals from each of the nine cities in the watershed, will also contribute information regarding known flooding areas in their communities. Where necessary, field surveys will ground truth this data. Where structures are potentially impacted, low floor elevations will be surveyed.

Timeframe: August 2023 – December 2023
Name and Title of person(s) responsible: Consulting engineers – Todd Shoemaker, P.E. Watershed Engineer; watershed TAC, city staff

Subtask 2b: Prioritizing Future Flood Hazard Mitigation Needs
Brief description of activities involved: This task is the identification of structural and nonstructural actions the Watershed Commission and other stakeholders could take. These actions might include options such as floodproofing or relocation of critical infrastructure, stream restoration and stabilization, modifications to future land use planning or zoning, or sizing information for future culvert, bridge opening, or other infrastructure updates. In this task we will also work with city D & I coordinators to undertake outreach to vulnerable communities that might be disproportionately impacted by that future flood risk to better understand their needs, concerns, and options. The final step is developing policy and technical guidance for the cities and Watershed Commission to guide improvement actions, community outreach needs, and development or redevelopment in those potential future higher risk areas. These actions will be prioritized (for example: immediate need, 5-15 years out, 20-30 years out), and responsible party(ies) and funding sources identified.

Timeframe: October 2023 – April 2024
Name and Title of person(s) responsible: Consulting engineers – Todd Shoemaker, P.E. Watershed Engineer; watershed TAC, city staff

Task 3 of 3: Final Report and Project Deliverables

Subtask 3: Final Grant Report and Submit Project Deliverables

Brief description of activities involved: Prepare a consultant's report detailing the modeling conducted, how future precipitation was incorporated into the model, and conclusions and recommendations. Prepare a final grant project report using the MPCA template approximately one month prior to the end of the grant agreement or at completion of the project, whichever occurs first. Respond promptly to any requests by the MPCA authorized representative for additional information and/or corrections to the report. Provide electronic files of all project deliverables to the MPCA authorized representative prior to the end of the grant agreement on June 30, 2024, or at the completion of the project, whichever occurs first.

Timeframe: May – June 2024
Name and Title of person(s) responsible: Consulting engineers – Todd Shoemaker, P.E. Watershed Engineer

SHINGLE CREEK / WEST MISSISSIPPI WATERSHED MANAGEMENT COMMISSION
MONTHLY COMMUNICATION LOG
November 2022

Date	From	To	SC	WM	Description
11/9/22	David Tupper, Southview Design	Diane Spector	X		Email inquiring whether SC review required for shoreline wall repair on Bass Lake. Referred to DNR
11/14/22	Danny McCullough, Three Rivers Park District	Todd Shoemaker & Ed Matthiesen	X		Three Rivers Park District interested in partnering with SC WMC in next 5 years to improve fishing access to creek immediately north and south of Palmer Lake. Ed subsequently walked the creek with Danny and identified two creek sections for concept development in 2023.
11/16/22	Bob Leba, SRF	Todd Shoemaker		X	Preliminary coordination of stormwater management for Hwy 252/I-94 interchange reconstruction
11/21/22	Ed Matthiesen	Met Council	X		Commission review of the proposed Blue Line Light Rail Transit will re-start in 2023. Commission review will likely exceed standard review time and fees; therefore, Ed contacted Met Council to update the previous contract with new personnel and budget by the CPI.
11/21/22	Laura Scholl, Metro Blooms	Todd Shoemaker & Ed Matthiesen	X		Discuss partner cost share application for Highland Gables.