DEPARTMENT OF NATURAL RESOURCES

April 11, 2022

Mr. Doug Baines
Chair
Elm Creek Watershed Management Commission
3235 Fernbrook Lane
Plymouth, MN 55447

Dear Mr. Baines,

At the March 2022 Elm Creek Watershed Management Commission (ECWMC) meeting, the Commission approved a scope of work and budget for Stantec to update the modeling work for the Elm Creek Watershed for the Twin Cities HUC8 project. I commend the Commission for taking this step. There are several ways the previously submitted modeling can be improved, and it seems likely that the approved scope of work will result in improved and more accurate modeling.

ECWMC completed a third-party review and submitted comments and recommendations to MN DNR in a memorandum dated January 22, 2022. MN DNR responded to the comments and recommendations in a memorandum dated February 14, 2022 (attached). The RFP for the scope of work ECWMC approved in March was sent on February 18.

One of the recommendations included in the 2-14-2022 memorandum was not included in the RFP or the approved scope of work. Since this item was not discussed at the March TAC meeting nor at the March ECWMC meeting, I would like to request the ECWMC to consider this recommendation and potentially amend the scope of work approved in March. The recommendation stated:

> "Some watersheds contain significant lengths of multiple streams, and then the flows generated from the HEC-HMS model are distributed proportionally to each stream. We recommend that the Commission subdivide those watersheds to more accurately model flows going to each stream and to create a more direct correlation between HEC-HMS results and flows used in the HEC-RAS model. Examples include but are not limited to EC35, EC26, EC19, EC16, EC3, DC1, RC2, SFRC2, and SFRC7."

For additional clarification, the watershed subdivisions could be limited to those watersheds listed above.

As the recommendation states, subdividing these watersheds will improve the model accuracy and create a better correlation between the hydrology (HEC-HMS) results and the hydraulic (HEC-RAS) model. This task could also impact the recalibration of the model, which is a task included in the scope of work. Therefore, this task should be completed prior to recalibrating the model.

We recognize that this additional task will result in additional cost for ECWMC; however, as a reminder, MN DNR is also completing additional work at no cost to ECWMC. MN DNR has agreed to complete the creation of the

floodplain delineations and depth grids for the revised modeling on behalf of the Commission. These were deliverables had a budgeted cost of $16,000 ECWMC's scope of work with Barr Engineering. If MN DNR did not agree to complete this work with the floodplain delineations and depth grids, then the Commission would need to complete these tasks for the revised model to be accepted.

Sincerely,

Jeff Weiss Digitally signed by Jeff Weiss
Date: 2022.04.11 13:22:14
-05'00'

Jeff Weiss, PE, CFM
Floodplain and Surface Water Engineer

CC: Judie Anderson, JASS

Equal Opportunity Employer

To: Elm Creek Watershed Management Commissioners and Member Cities

From: Erik Megow, PE
Ross Mullen, PE, CFM and
Jim Kujawa

Date: March 22, 2022

Subject: Proposed rules revisions regarding low floor/freeboard

INTRODUCTION AND PURPOSE

Rule D.3.b.i.7 of the 2015 Elm Creek Watershed Management Commission Third Generation Plan states, "*The low floor shall be at minimum two feet above the critical event 100-year elevation and a minimum one foot above the emergency overflow elevation of nearby waterbodies and stormwater ponds".*

The ambiguity in Rule D.3.b.i.7 has prompted some questions on the part of technical staff, member community, and members of the Technical Advisory Committee (TAC), such as:

- *What was the policy goal for the rule?*
    - *Limit surface water flooding?*
    - *Limit groundwater-induced flooding, including:*
        - *seepage through foundation walls*
        - *structure failures at foundation walls caused by hydrostatic pressure?*
        - *structural failure caused by buoyancy forces on footings?*
    - *Cascade failure from a combination of the above (e.g. a power outage occurs simultaneous with a flood and sump pump without battery backup is unable to pump groundwater away from the foundation).*

- *Under the low floor rule, what constitutes a "stormwater pond or waterbody"? Are localized depressions used to convey stormwater runoff to catch basins included?*

- *What constitutes "nearby"? Are structures not immediately adjacent to the floodplain that have proposed lowest floors beneath the floodplain elevation subject to the rules? How far away must structures be placed to be exempt from these rules?*

The Commission's technical staff and TAC met to discuss rules revisions for the low floor rules based on the risk to structures at the June and December 2021 TAC meetings. The Commission's technical staff and TAC have also reviewed freeboard rules required by state agencies, member cities, and adjacent watersheds as listed in Table 1. Freeboard is the technical term applied to the vertical height between the 100 Year event peak flood stage and the lowest regulatory height that a structure must be built to. Minnehaha Creek Watershed District is the only jurisdiction that uses the low opening as the regulatory height instead of the low floor (used by all other entities reviewed in Table 1).

Table 1 Freeboard Policies by ECWMC Technical Staff and the Technical Advisory Committee

State Agencies	Cities		Watersheds
Minnesota Department of Natural Resources	Elm Creek WMC Member Cities	Champlin	Coon Creek Watershed District
		Corcoran	
		Dayton	Minnehaha Creek Watershed District
		Maple Grove	
		Medina	Shingle Creek and West Mississippi WMCs
		Plymouth	
		Rogers	

The Commission's technical staff and TAC have determined that transition from the existing rules to a three-tiered approach based on the unique flood risk posed to structures based on the flooding source without over complication of the ECWMC's rules.

The Commission's technical staff and TAC recommend the tiered approach to recognize the differences in flood risk from large waterbodies that may have flood stages that last weeks or months from those of small stormwater ponds and waterbodies where the flood stages last hours or days. The flood risk, especially that caused by groundwater sources, is significantly lower to structures surrounding these small stormwater ponds and waterbodies.

Exhibit A shows a diagram of the proposed freeboard requirements.

TIMELINE

This rule shall go into effect as soon as Commissioner's approve the revisions and a Minor Plan Amendment is approved by the Minnesota Board of Soil and Water.

REVISIONS

1. Revise Rule A to include the definition of “Low Opening”.

    a. “*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.”*

2. Revise Rule D.3.b.i.7

    a. Existing: “*The low floor elevation shall be at minimum two feet above the critical event 100-year elevation and at minimum one foot above the emergency overflow elevation of nearby waterbodies and stormwater ponds.”*

    b. Proposed: *“Structures shall be elevated according to the following criteria based on the flooding source.*

        i. *Structures that are within the closed basin of naturally landlocked waterbodies and outside of the effective Federal Emergency Management Agency floodplain as shown on the Flood Insurance Rate Map and outside of the Commission’s floodplain shall meet the following criteria:*

            1. *The low floor must be at minimum one foot above the normal water level and*
            2. *The low floor must be at least two feet above the back-to-back 100-year 24-hour flood elevation.*

        ii. *Structures within the proposed Federal Emergency Management Agency and/or within the Commission’s floodplain (excluding FEMA Zone A areas) shall meet the following criteria:*

            1. *The Low Floor must be at minimum two feet above the 100-year flood elevation and at least one foot above the emergency overflow.*

        iii. *Structures that are within the closed basin of naturally landlocked waterbodies and the Federal Emergency Management Agency and/or Commission’s floodplain shall have a low floor elevation at whichever elevation highest elevation calculated from the following:*

            1. *The low floor must be at minimum one foot above the normal water level and*
            2. *The low floor must be at least two feet above the back-to-back 100-year 24-hour flood elevation.*
            3. *The low floor must be at minimum two feet above the 100-year flood elevation.*

        iv. *Structures near the maximum inundation extents caused during the high-water level of nearby stormwater ponds and/or waterbodies that are outside of a naturally landlocked waterbody basin, Federal Emergency Management Agency floodplain, and the Commission’s floodplain shall meet the following criteria:*

1. *The Low Floor must be at minimum one foot above the normal water level of hydraulically or hydrologically connected waterbodies (as determined by paragraph d. below) and*
2. *The Low Opening must be at least two feet above the 100-year flood elevation and*
3. *The Low Opening should be at least one foot above the emergency overflow and*
4. *Hydrogeological analyses demonstrating a structure is outside of the lateral transmissivity zone of groundwater flow mounding caused by the 100-year event on hydraulically or hydrologically connected waterbodies and based on the duration of the flood hydrograph in those hydraulically or hydrologically connected waterbodies, to the satisfaction of the Commission's engineer, may be used to exempt structures from the above rules.*
5. *Structures located greater than 200-feet away from the high- water level inundation of hydraulically or hydrologically connected waterbodies (as determined by paragraph d. above) are exempt from the above rules.*
6. *The emergency overflow should be an overland flow section, where possible, but piped outlets with appropriate conveyance capacity that are designed to limit clogging may be used as determined by the Commission's Engineer*

v. Structures adjacent to localized depressions use to route stormwater to waterbodies and stormwater ponds are exempt from these requirements.

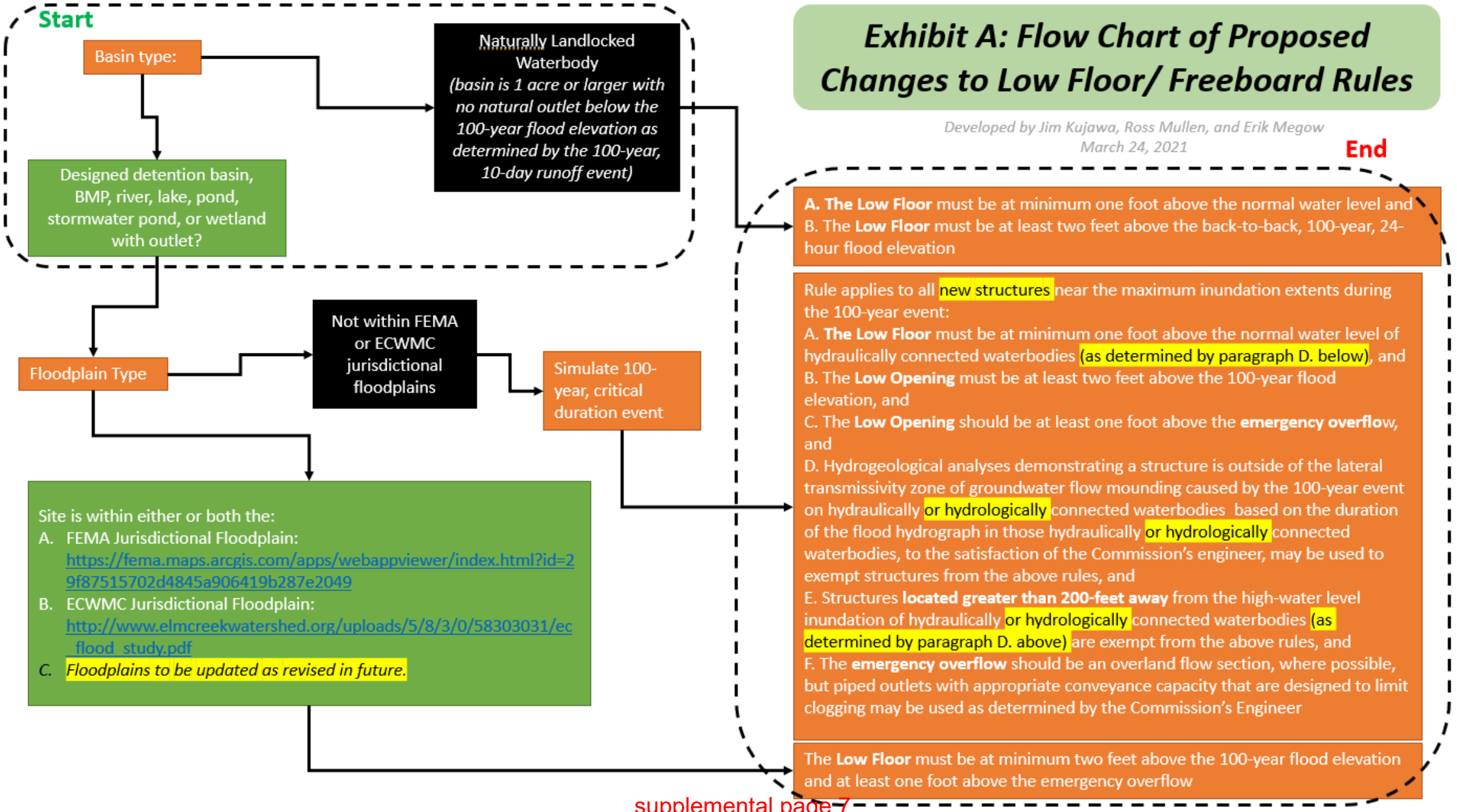
3. Revise Rule F.3.b

a. Existing: "*All new structures shall be constructed with the low floor at the elevation required in the municipality's ordinance, however, in no case shall the low floor be less than two feet above the regulatory elevation."*

b. Proposed: *"Structures shall be elevated to reduce flood risk as specified in Rule D.3.b.i.7."*

Exhibit A: Flow Chart of Proposed Changes to Low Floor/ Freeboard Rules

Developed by Jim Kujawa, Ross Mullen, and Erik Megow
March 24, 2021



To: Elm Creek Watershed Management Commissioners, Technical Advisory Committee, and Member Cities

From: Erik Megow, PE
Ross Mullen, PE, CFM

Date: April 6, 2022

Subject: Minor rules revisions to align Elm Creek Watershed Management Commission rules with the latest Municipal Separate Storm Sewer System (MS4) permit

INTRODUCTION AND PURPOSE

In 2021, the Minnesota Pollution Control Agency (MPCA) issued a new a Municipal Separate Storm Sewer System (MS4) Phase II general permit to Minnesota cities. An individual MS4 Phase II permit requires a city to develop and implement a stormwater pollution prevention program to reduce the discharge of pollutants from their storm sewer system. All member communities in the Elm Creek Watershed Management Commission are MS4 Phase II permit holders.

The revised MS4 Phase II permit requires:

- For non-linear projects, treatment of the amount of 1.0-inches of runoff from new and fully reconstructed impervious surfaces.
- For linear projects, treatment of A) 1.0-inches of runoff from the new impervious surface or B) 0.50-inches of runoff from new and fully reconstructed impervious surfaces, whichever is greater.

The 2015 Third Generation Elm Creek Watershed Management Commission Plan rules require applicants to provide treatment in the amount of 1.1-inches of runoff from the net, new impervious areas for projects with construction disturbance of more than one acre.

The revisions to the MS4 Phase II permit create inconsistencies between the 2015 Third Generation Elm Creek Watershed Management Commission Plan rules and the rules of its member cities as required by the newest MS4 Phase II permit. We propose to revise the Commission's rules to align with the MS4 Phase II permit requirements. These proposed revisions will have the greatest impact to redevelopment, including public works projects (i.e. road projects) and will have negligible impact to new construction projects on greenfield sites. It is important to the Commission's member cities that its rules be aligned with their MS4 Phase II permit requirements to be at least as stringent as its member cities and to create consistency in the project review process.

TIMELINE

The MPCA updated MS4 discharge permits to the Commission's member cities in October and November 2021. The member cities have one year to come into compliance with the new MS4 Phase II permit requirements. Project reviews submitted to the Commission after November 30, 2022, shall be required to follow the revised requirements. This rule shall go into effect as soon as a member city fully implements its new MS4 Phase II permit and a Minor Plan Amendment is approved by the Minnesota Board of Soil and Water, no later than November 30, 2022.

REVISIONS TO THE THIRD GENERATION PLAN

1. Revise Rule A to include the definition of fully reconstructed impervious surfaces:

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

2. Revise Rule A to include the definition of linear projects:

    a. *"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."*

3. Revise Rule D.2.b

    a. Existing: "*Linear projects that create one acre or more of new impervious surface must meet all Commission requirements for the net new impervious surface. Sidewalks and trails that do not exceed twelve feet (12'0") in width, are not constructed with other improvements, and have a minimum of five feet (5'0") of vegetated buffer on both sides are exempt from Commission requirements."*

    b. Proposed: "*Linear projects that create one acre or more of new or fully reconstructed impervious surfaces must meet all Commission requirements for 1.1-inches of runoff from the new impervious surface or 0.55-inches from the combination of new and fully reconstructed impervious surfaces, whichever is greater. When this volume cannot be treated within the existing right-of-way, a reasonable attempt to obtain additional right-of-way, easement, or other permission to treat the stormwater during the project planning process must be made. Volume reduction practices must be considered first. Volume reduction practices are not required if the practices cannot be provided cost effectively. If additional right-of-way, easements, or other permission cannot be obtained, owners of construction activity must maximize the treatment of the water quality volume."*

4. Revise Rule D.3.c

    a. Existing: *"Stormwater runoff volume must be infiltrated/abstracted onsite in the amount equivalent to one point one inch (1.1") of runoff generated from new impervious surface."*

    b. Proposed: *"For non-linear projects, stormwater runoff volume must be infiltrated/abstracted onsite in the amount equivalent to one point one inch (1.1") of runoff from the new impervious surface or 0.55-inches from the combination of new and fully reconstructed impervious surfaces, whichever is greater."*

To: Elm Creek WMC Commissioners

From: Diane Spector
Erik Megow, PE
Judie Anderson

Date: April 6, 2022

Subject: 2022 Rules and Standards Minor Plan Amendment

Recommended TAC Action	Staff recommends that the Commission authorize proceeding with the attached Minor Plan Amendment and set the date for the required public meeting as the May 11, 2022, regular meeting.

The Rules and Standards established in the Third Generation Watershed Management Plan is proposed for a Minor Plan Amendment (MPA). The Technical Advisory Committee (TAC) has previously discussed to the proposed revisions at length over several meetings, and has recommended the attached revisions for your consideration.

The proposed Amendment would revise Appendix C of the Plan - the Rules and Standards - to 1) make the rules consistent with the most recent Minnesota General Stormwater Permit; and 2) clarify the Commission's standards regarding the required freeboard between the high-water elevation of a constructed or natural water and the low floor or opening of a proposed adjacent structure.

If you choose to go forward with the Minor Plan Amendment, we recommend you **set May 11, 2022** as the public meeting at which it would be discussed. At that May 11 meeting, the Commission would discuss and act on the proposed revisions. If approved, the revised Rules could go into effect June 1, 2022, or some other date if you prefer.

Attached is the proposed Notice of Minor Plan Amendment. The Commission must send a copy of the proposed minor plan amendment to the member cities, Hennepin County, the Met Council, and the state review agencies for review and comment, and must hold a public meeting (not a hearing) to explain the amendment. This meeting must be public noticed twice, at least seven and 14 days prior to the meeting.

Notice of Minor Plan Amendment
Elm Creek Watershed Management Commission

The Elm Creek Watershed Management Commission proposes to amend its *Third Generation Watershed Management Plan* to adopt revisions to Appendix C of that document – the development Rules and Standards – to conform the Rules to the most recent Minnesota General Stormwater Permit and to clarify requirements regarding the minimum elevation separation between constructed and natural waterbodies and adjacent structures.

The proposed minor plan revision is shown as additions (underlined) or deletions (~~strike outs~~).

The Elm Creek WMC Third Generation Plan Appendix C Rules and Standards is hereby revised as follows:

1. Rule A is hereby revised to add:

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

   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.

2. Rule D.2.b is hereby revised as follows:

   ~~Linear projects that create one acre or more of new impervious surface must meet all Commission requirements for the net new impervious surface. Sidewalks and trails that do not exceed twelve feet (12'0") in width, are not constructed with other improvements, and have a minimum of five feet (5'0") of vegetated buffer on both sides are exempt from Commission requirements.~~

   Linear projects that create one acre or more of new or fully reconstructed impervious surfaces must meet all Commission requirements for 1.1-inches of runoff from the new impervious surface or 0.55-inches from the combination of new and fully reconstructed impervious surfaces, whichever is greater. When this volume cannot be treated within the existing right-of-way, a reasonable attempt to obtain additional right-of-way, easement, or other permission to treat the stormwater during the project planning process must be made. Volume reduction practices must be considered first. Volume reduction practices are not required if the practices cannot be provided cost effectively. If additional right-of-way, easements, or other permission cannot be obtained, owners of construction activity must maximize the treatment of the water quality volume.

3. Rule D.2.c is hereby revised as follows:

~~Stormwater runoff volume must be infiltrated/abstracted onsite in the amount equivalent to one point one inch (1.1") of runoff generated from new impervious surface.~~

For non-linear projects, stormwater runoff volume must be infiltrated/abstracted onsite in the amount equivalent to one point one inch (1.1") of runoff from the new impervious surface or 0.55-inches from the combination of new and fully reconstructed impervious surfaces, whichever is greater.

4. Rule D.3.b.i.7 is hereby revised as follows:

~~The low floor elevation shall be at minimum two feet above the critical event 100-year elevation and at minimum one foot above the emergency overflow elevation of nearby waterbodies and stormwater ponds.~~

Structures shall be elevated according to the following criteria based on the flooding source:

i. Structures that are within the closed basin of naturally landlocked waterbodies and outside of the effective Federal Emergency Management Agency floodplain as shown on the Flood Insurance Rate Map and outside of the Commission's floodplain shall meet the following criteria:

    1. The low floor must be at minimum one foot above the normal water level and
    2. The low floor must be at least two feet above the back-to-back 100-year 24-hour flood elevation.

ii. Structures within the proposed Federal Emergency Management Agency and/or within the Commission's floodplain (excluding FEMA Zone A areas) shall meet the following criteria:

    1. The low floor must be at minimum two feet above the 100-year flood elevation and at least one foot above the emergency overflow

iii. Structures that are within the closed basin of naturally landlocked waterbodies and the Federal Emergency Management Agency and/or Commission's floodplain shall have a low floor elevation at whichever elevation highest elevation calculated from the following:

    1. The low floor must be at minimum one foot above the normal water level and
    2. The low floor must be at least two feet above the back-to-back 100-year 24-hour flood elevation.
    3. The low floor must be at minimum two feet above the 100-year flood elevation.

iv. Structures near the maximum inundation extents caused during the high-water level of nearby stormwater ponds and/or waterbodies that are outside of a naturally landlocked waterbody basin, Federal Emergency Management Agency floodplain, and the Commission's floodplain shall meet the following criteria:

1. The low floor must be at minimum one foot above the normal water level of hydraulically or hydrologically connected waterbodies (as determined by paragraph d. below) and
2. The low opening must be at least two feet above the 100-year flood elevation and
3. The low opening should be at least one foot above the emergency overflow and
4. Hydrogeological analyses demonstrating a structure is outside of the lateral transmissivity zone of groundwater flow mounding caused by the 100-year event on hydraulically or hydrologically connected waterbodies and based on the duration of the flood hydrograph in those hydraulically or hydrologically connected waterbodies, to the satisfaction of the Commission's engineer, may be used to exempt structures from the above rules.
5. Structures located greater than 200-feet away from the high- water level inundation of hydraulically or hydrologically connected waterbodies (as determined by paragraph d. above) are exempt from the above rules.
6. The emergency overflow should be an overland flow section, where possible, but piped outlets with appropriate conveyance capacity that are designed to limit clogging may be used as determined by the Commission's Engineer

v. Structures adjacent to localized depressions use to route stormwater to waterbodies and stormwater ponds are exempt from these requirements.

5. Rule F.3.b is hereby revised as follows:

~~*All new structures shall be constructed with the low floor at the elevation required in the municipality's ordinance, however, in no case shall the low floor be less than two feet above the regulatory elevation.*~~

Structures shall be elevated to reduce flood risk as specified in Rule D.3.b.i.7.

2021 ANNUAL REPORT

BACKGROUND

In 2006 the Shingle Creek and West Mississippi Watershed Management Commission's Education and Public Outreach Committee (EPOC) invited the Education Committee of the Bassett Creek Watershed Management Commission to partner in developing joint education and outreach activities. Since that time this voluntary partnership has grown to include the Elm Creek Watershed Management Commission, the Three Rivers Park District, Hennepin County Department of Environment and Energy, and the Freshwater Society. The WMOs are designated as "members," the latter three organizations as "partners."

This alliance, the West Metro Water Alliance (WMWA), grew from a recognition that the individual organizations have many common education and public outreach goals and messages that could be more efficiently and effectively addressed and delivered collaboratively and on a wider scale.

MEETINGS

WMWA meets monthly, as needed, on the second Tuesday, virtually via Zoom. Member representatives include Laura Jester, Bassett Creek WMC Administrator; Doug Baines, Commissioner, Elm Creek WMC; Nico Cantarero, Stantec, Dayton, Elm Creek WMC; Marta Roser, Robbinsdale, Shingle Creek WMC. and Ben Scharenbroich and Amy Riegel, Plymouth, Shingle Creek, Bassett Creek and Elm Creek WMCs. Other attendees include Sharon Meister, Watershed PREP Educator; Diane Spector, Stantec/Wenck Associates, serves as technical support for WMWA, and Amy Juntunen, JASS, serves as administrative support. In 2021 eleven meetings were held. All WMWA member Commissioners and city staff are welcome to attend meetings.

THE WMWA PROGRAM

Goals of the WMWA program are to:

- Inform the public about the watershed organizations and their programs.
- Provide useful information to the public on priority topics.
- Engage the public and encourage positive, water-friendly behaviors.
- Help member cities meet MS4 permit requirements regarding education.

Three informational pieces have been developed by WMWA to support these goals. The *10 Things You Can Do* Brochure targets the general public. The brochure is distributed at all venues where the Commissions or member cities have a presence and also in the Watershed PREP classrooms. It is also available on the websites of the WMO member cities. In 2019 the *10 Things* brochure was updated and reprinted in partnership with Hennepin County.

The *Maintain Your Property the Watershed Friendly Way* handbook targets small businesses, multi-family housing properties, and common interest communities such as homeowners' associations. It contains tips for specifying and hiring turf and snow maintenance contractors, and includes checklists for BMP inspections.

The *Residential Snow and Ice Care* brochure is an educational piece designed to inform citizens of the chloride pollution problem and ways to reduce salt use. The *Commercial Snow and Ice* brochure is designed to inform HOAs, property managers and commercial applicators of the chloride pollution problem and ways to reduce salt use.

In 2021 WMWA began development of three new flyers to address MS4 permit education needs on the topics of Pet Waste, Water Softener Chlorides, and Deicer Chlorides. These flyers will be completed in 2022 and provided to member cities for distribution and addition to website/social media.

WATERSHED PREP AND COMMUNITY EVENTS

Watershed PREP is a program of WMWA and stands for Protection, Restoration, Education, and Prevention. 2021was the ninth year of the program. Two contract educators with science education backgrounds are shared between the member watersheds. The focus of the program is two-fold - to present water resource-based classes to fourth grade students and to provide education and outreach to citizens, lake associations, other civic organizations, youth groups, etc. Goals of the program are 1) to have audiences gain a general understanding of watersheds, water resources and the organizations that manage them, and 2) to have audiences understand the connection between actions and water quality and water quantity. The ultimate goal is to make this program available to all fourth graders in the four WMWA watersheds and to other schools as contracted.

Fourth Grade Program. Three individual lessons meeting State education standards have been developed. **Lesson 1***, What is a Watershed and Why do We Care?,* provides an overview of the watershed concept and is specific to each school's watershed. It describes threats to the watershed. **Lesson 2,** *Water Cycle - More than 2-dimensional!,* describes the movement and status of water as it travels through the water cycle. **Lesson 3,** *Stormwater Walk,* investigates movement of surface water on school grounds.

In 2021, due to COVID, only one classroom presentation was given in the fall. More classes have been scheduled for spring 2022.

Educators created a video of the presentation in 2020 for parents and teachers to use.

Due to COVID there were no community outreach events staffed by educators in 2021.

In 2021, Educator Sharon Meister tendered her resignation. Staff analyzed the hours dedicated to the project by past Educators and created a new Professional Services Agreement. In November 2021, Jessica Sahu Teli was contracted as the new Watershed PREP Educator. Sahu Teli is a wetland scientist and educator with a B.S. in aquatic biology/limnology and is currently pursuing her Masters of Environmental Science degree.

UPDATED WORK PLAN

In 2021 the WMWA Work Plan was updated to reflect current practices. The updated Work Plan included the following major revisions:

1. Added an equity statement affirming the group's commitment to environmental justice for all and outreach to historically underrepresented groups.
2. Revised the general educational goals for non-single family property owners and managers to focus solely on providing information and guidance on appropriate BMPs.

3. Removed educational goals for developers as cities were seen as being the most appropriate points of contact with these stakeholders.
4. Removed educational goals for training city staff, as those are the responsibility of the cities.
5. Removed educational goals for agricultural property owners and operators as Hennepin County staff have taken on that role acting as the County Soil and Water Conservation District.
6. Added a key educational goal for all the stakeholders to "understand the relationship between climate and water quality and water quantity."
7. Revised the plan to replace references to the Hennepin County website with the WMWA website.
8. Eliminated Measuring and Monitoring Public Awareness as a major task. One of WMWA's first activities was sponsoring a professional opinion poll in the four watersheds regarding knowledge and behaviors. WMWA does not expect to repeat that poll due to cost but will build measuring and evaluating into individual activities.
9. Strengthened the Communication and Information Sharing activity to incorporate the website and social media.
10. Eliminated the Develop and Coordinate Regional or Countywide Activates task. Early on WMWA had sponsored a series of workshops for broader participation but found it to be an inefficient use of time and resources. The group will focus on spreading information about existing activities sponsored by other groups.

WMWA's 2020 and 2021 budgets reflect these activities and were approved by the members on January 8, 2019 and January 14, 2020, respectively. The budgets are included in this report as *Appendix C*.

SPECIAL PROJECT

In November 2020, Minnesota Pollution Control Agency approved the new 2020 MS4 general permit. WMWA member cities must apply for the new permit by April 15, 2021. Included in the new permit are several education requirements.

The 2021 Special Project was dedicated to helping member cities meet the new MS4 permit education requirements. The new permit requires cities to distribute educational materials or equivalent outreach to stakeholders at lease once per year regarding the impacts of deicing salt and pet waste on surface waters and ways to reduce these impacts.

In 2021 WMWA Special Project funds were approved for the creation of three one-page flyers to address pet waste, deicing chlorides, and water softener chlorides, as well as associated landing pages with further information on the WMWA website. Participating members created the content and hired Taurus Moon Graphic Design to complete the flyer design. The three flyers will be completed and available to member cities in early 2022.

WMWA COORDINATOR POSITION

In the fourth quarter of 2019, members re-evaluated spending on the current Special Project. Looking forward to the needs of 2020 and the future, members voted to use Special Project funding for 2020 to hire a WMWA Coordinator as members did not have enough time to dedicate to certain upcoming projects, such as a survey to inform the update of the Work Plan, planned for 2020. An applicant was hired for the position beginning January 1, 2020.

Due to difficulties with COVID, the applicant was unable to start the position in 2020. The new Educator may be able to take on some of the responsibilities this position was created for in 2022.

Resilient Yard Workshops

Due to COVID, Workshops were not held in-person. Metro Blooms did create an online webinar format of the workshop. WMWA did not sponsor workshops in 2021, though they are available to member cities through Metro Blooms directly.

Winter Maintenance Training

In 2021, Winter Maintenance Training workshops were hosted via webinar by Plymouth on October 27 for the road applicator training and November 5 for the parking lot and sidewalk training, with about 60 attendees at each training. Attendees learned how to adjust the use of salt de-icing products to be effective without overuse

WMWA Website

The WMWA website www.westmetrowateralliance.org serves as a repository for documents and information for access by member cities and citizens, lists local events WMWA is participating in and/or otherwise promoting, stores Watershed PREP information for schools, and collects information for the *Pledge to Plant* campaign and newsletter subscriptions.

The website had 689 unique visitors engaged in 786 individual sessions with an average of 1.14 pages viewed per session for a total of 1,092 page views on the website in 2021. The website metrics can be found in Appendix B

2021 Marketing Activity

In May 2016 WMWA created a social media campaign for the Pledge to Plant campaign and WMWA in general on Facebook and Twitter. As of December 31, 2020, the WMWA Twitter page had been discontinued As of December 31, 2021, the Facebook page had 204 followers and 258 posts resulting in 3,109 engagements and 287 shares.

To learn more about WMWA, contact:
Diane Spector, Stantec, 763.252-6880, diane.spector@stantec.com
or Amy Juntunen, JASS, 763.553.1144, amy@jass.biz

APPENDIX

Table 1. 2021 schools and students participating in Lesson 1: What is a Watershed?

	Date	School	School District	City	Watershed	Classes	Students
1	10/26	Rice Lake	Osseo	Maple Grove	Elm	4	80
					Total:	**4**	**80**

Educators created a video of the presentation in 2020 for parents and teachers to use in distance learning during COVID. The video can be found on YouTube at https://www.youtube.com/watch?v=bq4zKMfc-pQ&t=763s. The video had 222 views as of December 31, 2021

Watershed PREP

Lesson 1: What is a Watershed and Why Do We Care?

Lesson 2: Project WET, The Incredible Journey

Year	Lesson 1 Classes	Lesson 1 Students	Lesson 2 Classes	Lesson 2 Students
2013	35	870	9	230
2014	73	1875	5	160
2015	118	3106	27	859
2016	107	2850	20	524
2017	125	3358	38	1072
2018	143	3593	69	1755
2019	103	2681	58	1516
2020	20	572	10	256
2021	4	80	0	0
Total	728	18985	236	6372

APPENDIX B – WEBSITE/SOCIAL MEDIA ACTIVITY

Likes grew in 2021 to a total of 172 likes and 204 followers. In 2021 there were 188 posts resulting in 3,109 engagements and 287 shares. The maximum post reach was 83 and maximum post engagements was 47.

APPENDIX C – BUDGET

	2019	2020				2021				2022
	Balance	**Budget**	**Revenue**	**Expense**	**Balance**	**Budget**	**Revenue**	**Expense**	**Balance**	**Budget**
Admin/Tech Services Routine tasks, website, social media, meetings, etc	$401	$12,000	$12,000	$7,647	$4,754	$12,000	$12,000	$9,299	$7,455	$12,000
Special Projects	$9,199	8,000	4,000	2,482	10,717	8,000	4,000	0	14,717	8,000
Watershed Prep	$4,964	16,000	8,000	3,214	9,750	16,000	4,000	315	13,435	16,000
Resilient Yards Metro Blooms workshops		*Billed directly to cities*				*Billed directly to cities*				
TOTAL	$14,564	$42,000	$24,000	$13,343	$25,221	$36,000	$20,000	$9,614	$35,607	$36,000