Bassett Creek Watershed Management Commission (BCWMC)

Requirements for Development and Improvement Projects

Revised May 2026

Protecting and improving the Ȟaȟá Wakpádaŋ / Bassett Creek watershed, homeland of the Dakota people.

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1.0 Introduction

This document was prepared to assist cities, developers, public agencies or other agencies and consultants in designing and managing projects that conform to the *Bassett Creek Watershed Management Commission 2026-2035 Watershed Management Plan* (Watershed Management Plan) and outlines the requirements and performance standards designed to achieve the **BCWMC**'s goals. The Watershed Management Plan, as adopted by the Bassett Creek Watershed Management Commission (**BCWMC**), may be reviewed or obtained from the **BCWMC** website at http://www.bassettcreekwmo.org/.

This document provides the development requirements and performance standards adopted by the **BCWMC** and includes:

1. ***Types of projects to be submitted for review***
2. ***Review Process***
    - The nature of the review process and procedures
    - Required submittals/exhibits
    - Variance procedures
3. ***Policies, requirements, and performance standards***
    - **Floodplain** requirements
    - **Rate control** requirements
    - **Water quality** requirements
    - **Erosion and sediment control** requirements
    - Other requirements

Words and phrases in **bold** text are defined in Section 9.0.

2.0 Types of Projects to be Submitted for Review

All people, cities, public agencies, or other agencies proposing improvements or developments within the Bassett Creek watershed must submit sufficient information to the **BCWMC** engineer to determine the effect that their proposed project may have on the water resources of the watershed within the following guidelines. At the request of the cities, the **BCWMC** engineer and/or board of commissioners will review plans for improvements or developments that would not otherwise trigger review. Types of projects to be submitted for review and triggers for BCWMC review include:

2.1 Floodplains

Any proposed project that is located below the 1% (100-year flood) **floodplain** elevation or **floodplain** storage sites and would consist of a major alteration of existing **structures**, erection of new **structures**, filling, floodway encroachment, activities considered incompatible with acceptable **floodplain** uses or be subject to damage by the 1% (100–year) flood must be submitted to the **BCWMC** for review. **Floodplain** policies, requirements, and performance standards apply to **structures** such as buildings, bridges, footbridges, culverts, and pipe crossings of any nature, including sanitary sewer, water supply, electrical and telephone lines, and other utilities. Temporary and permanent docks or boardwalks, and work limited to minor grading (no filling or measurable change in contours) or maintenance in the **floodplain** do not require **BCWMC** review. BCWMC review only applies to the floodplain of the Bassett Creek **trunk system**. Cities are responsible for managing other local floodplains. **Floodplain** requirements are described in Section 4.0.

2.2 Rate Control

Proposed new, **nonlinear** development projects that create one or more acres of new **impervious surface** or **nonlinear redevelopment projects** that create one or more acres of new and/or **fully reconstructed impervious surface** must be submitted to the **BCWMC** for **rate control** review. Proposed **linear projects** that create one or more acres of new and/or **fully reconstructed impervious surface** must be submitted to the **BCWMC** for **rate control** review. **Rate control** requirements are described in Section 5.0.

2.3 Water Quality

Proposed new, **nonlinear** development projects that create one or more acres of new **impervious surface** or **nonlinear redevelopment projects** that create one or more acres of new and/or **fully reconstructed impervious surface** must be submitted to the **BCWMC** for water quality review. Proposed **linear projects** that create one or more acres of new and/or **fully reconstructed impervious surface** must be submitted to the city for water quality review and permitting. Proposed **linear projects** that create five or more acres of new and/or **fully reconstructed impervious surface** must be submitted to the **BCWMC** for water quality review. Water quality requirements are described in Section 6.0.

2.4 Erosion and Sediment Control

Proposed **nonlinear** projects that will result in 200 cubic yards or more of cut or fill or 10,000 square feet or more of **land disturbance** must be submitted to the **BCWMC** for **erosion and sediment control** review. Proposed **linear projects** that result in one or more acres of **land disturbance** must be submitted to the **BCWMC** for **erosion and sediment control** review. Individual single family home sites are exempt from **erosion and sediment control** review. Individual single family home sites that are subdivided to create four or more single family homes are not exempt from **erosion and sediment control** policies, requirements and performance standards. **Erosion and sediment control** requirements are described in Section 7.0.

2.5 Lakes, Streams, and Wetlands

Proposed projects that may affect the water surface elevation, outlet storage capability, shoreline or streambank, or be incompatible with existing or proposed land use around the lakes, streams, and **wetland**s in the Bassett Creek watershed must be submitted to the **BCWMC** for review. The **BCWMC** will defer **wetland** issues in cases where the city acts as the local government unit (LGU) for administering the **Wetland** Conservation Act, unless **BCWMC** involvement is requested by the city.

The **BCWMC** will review proposed streambank stabilization projects and streambed degradation control **structure**s to evaluate the need for the work, the adequacy of design, unique or special site conditions, energy dissipation, the potential for adverse effects, contributing factors, preservation of natural processes, and aesthetics.

The BCWMC does not specifically review buffers for proposed projects but requires that cities maintain and enforce **wetland** and streambank buffer requirements at least as stringent as the **BCWMC** requirements laid out in Appendix B. Specific **wetland** and stream buffer requirements and submittal information should be coordinated with the city in which the project is located. **BCWMC** buffer requirements are described in Appendix B.

2.6 Water Resources

Proposed projects that would alter water resources in the watershed, involve the discharge of industrial or other waste to any watercourse or storm sewer, require extensive land alteration, are directly tributary to the waterbodies of the watershed, or may otherwise affect the existing water quality must be submitted to the **BCWMC** for review. In addition, the **BCWMC** must be informed of the proposed application of chemicals or other treatments to lakes and ponds in the watershed.

2.7 Diversion of Surface Water Runoff

Proposed projects to provide intra- or inter- watershed diversion that may affect flood levels, lake levels, or minimum stream flows in the watershed must be submitted to the **BCWMC** for review. Diversion of Surface Water Runoff requirements are described in Section 8.0.

2.8 Land Use Changes

Proposed changes in land use and zoning that are not consistent with the Watershed Management Plan and affect stormwater management must be submitted to the **BCWMC** for review.

2.9 Regional Best Management Practices

Regional best management practices (BMPs) must be submitted to the BCWMC for review if the intent is to use the BMPs to meet the BCWMC's floodplain, rate control, or water quality requirements. Regional BMP requirements are described in Section 8.0.

2.10 Appropriations

Ground or surface water appropriations that may temporarily or permanently alter the existing ground and surface water levels in the watershed must be submitted to the **BCWMC** for review.

2.11 Utility Crossings and Bridges

The construction of utilities through or paralleling the defined **trunk system** that require disturbance of the bed or banks of the creek or the diversion of the creek and all bridges across the **trunk system** must be submitted to the **BCWMC** for review. Utility Crossings and Bridges requirements are described in Section 8.0.

2.12 Department of Natural Resources (DNR) Permit Applications

The **BCWMC** will perform cursory review of permit applications submitted to and provided by the DNR for work in the Bassett Creek watershed involving water appropriations, work in public waters, and other applications involving water resources under jurisdiction of the **BCWMC**. Although reporting back to the DNR is not required, the BCWMC will provide comments as necessary.

2.13 Bassett Creek Tunnels

Projects that modify or impact the old or new Bassett Creek tunnels may require coordination with the **BCWMC**. Information regarding the Bassett Creek tunnel requirements is included in Section 8.0.

2.14 Projects Not Requiring BCWMC Review

The following proposed projects do not require **BCWMC** review:

1. Proposed projects that result in less than 200 cubic yards of cut and fill and less than 10,000 square feet of land disturbance.

2. Maintenance projects, including sealcoating, mill and overlay, pavement reclamation, pavement overlays, and other resurfacing activities, driveway maintenance that does not result in net fill in **floodplain**, adding more riprap to an existing riprap-protected shoreline or streambank that does not result in net fill in the **floodplain** or reduced channel cross sectional area, sediment and debris removal from stream crossings, pipe inlets and outlets, stormwater ponds, etc. that do not trigger **land disturbance** criteria.

3. City storm sewer maintenance projects that do not trigger **land disturbance** criteria.
4. Single family home sites are exempt from **Erosion and Sediment Control** review. Single family home sites must comply with the other requirements and be reviewed by the **BCWMC** if they meet the review triggers.
5. Proposed **linear projects** that result in less than 1.0 acres of **land disturbance**.

3.0 Review Process

As outlined in Section 2.0, all people, cities, public agencies, or other agencies proposing improvements or developments within the Bassett Creek watershed must submit sufficient information to the **BCWMC** to determine the effect that their proposed project may have on the water resources of the watershed. The **BCWMC** Engineer will review all applications for compliance with the **BCWMC** policies, requirements and performance standards. Some applications will require board approval at a **BCWMC** meeting, as outlined in Section 3.1.3. All other applications may be processed through administrative review by the **BCWMC** Engineer. The process the **BCWMC** will follow in reviewing projects submitted for review and the information that must be submitted by applicants is summarized below.

3.1 Procedure for BCWMC Review

1. The **BCWMC** will review the applicant's submittal only after the project has received preliminary review by the city indicating general compliance with existing local watershed management plans prepared pursuant to 103B.235. Questions about the **BCWMC** requirements and performance standards must first be directed to the city in which the project is located. The city may choose to direct the applicant to contact the **BCWMC** administrator or engineer.

2. The **BCWMC** engineer has 15 days to determine if an application is complete from the date that the signed application and proposed project documentation is received by the **BCWMC** engineer. The **BCWMC** engineer has 60 days to determine if an application is approved or send a letter with comments to the city and to the applicant.

3. Some proposed projects require board approval at a **BCWMC** meeting. Except as noted, all submittals impacting **floodplains** (as defined in Section 2.1), lakes, streams, or wetlands, or involving the Bassett Creek **trunk system**, variances, linear construction or reconstruction projects with 5 acres or more of new and/or **fully reconstructed impervious surface**s, or alternative **BMP**s not included in the most current version of the Minnesota Stormwater Manual require board approval at a **BCWMC** meeting.

    a. Work limited to individual single-family home shoreline restoration and/or individual single-family home streambank stabilization projects does not require board approval at a BCWMC meeting but does require administrative approval by the BCWMC engineer.

    b. Work limited to installation of a storm sewer outlet, including flared end sections and associated riprap or other approved erosion protection features, does not require add-on fees or board approval at a BCWMC meeting, but does require administrative approval by the BCWMC engineer. Applicants must demonstrate no net loss in floodplain storage.

4. The **BCWMC** board meetings are generally held on the third Thursday of each month. For a proposed project to be included on the **BCWMC** board meeting agenda, application materials must be submitted to the **BCWMC** engineer by the last Friday of the month prior to the meeting

date. **Complex projects** may require additional review time. However, not all proposed projects are presented at the **BCWMC** meeting for review and board approval, as outlined in Section 3.1.3.

5. Upon receipt of a submittal, the **BCWMC** engineer will review the submittal and prepare recommendations to the **BCWMC** board or city.

    a. For projects requiring board approval at a **BCWMC** meeting, a memorandum describing each proposed project and the engineer's recommendations will be sent to the **BCWMC** board of commissioners approximately one week before the meeting.

    b. For projects not requiring board approval at a **BCWMC** meeting, the **BCWMC** engineer will send a letter with comments directly to the city and to the applicant.

6. If requiring board approval at a **BCWMC** meeting, the board of commissioners will approve, conditionally approve, table, or reject the submittal. The BCWMC engineer will then send a letter with comments, including a list of deficiencies or required modifications, to the city and to the applicant.

7. The applicant must provide a revised submittal addressing each deficiency, required modification, or comment. The BCWMC engineer will send a letter of approval to the city and to the applicant after comments have been satisfactorily addressed.

8. Application approvals expire two years from the date of approval. Approved proposed projects that do not begin construction within two years will require a new application and approval. Active applications expire two years from the date of the most recent **BCWMC** comments letter/correspondence. If a response to **BCWMC** comments or final approval is not received for a proposed project within two years, a new application and final approval will be required.

9. Emergency work performed or approved by cities (utility repair, emergency traffic issues, health and safety issues, etc.) is exempt from initial **BCWMC** review. Cities must inform the **BCWMC** regarding emergency work, as soon as practical, in cases that would have required an application under non-emergency conditions. To document the work, the appropriate application materials and fee must be provided to the **BCWMC** after construction and return to non-emergency conditions.

3.2 Required Exhibits

The applicant must submit an application form and required exhibits. The application form must be signed by city staff. The required exhibits are listed on the application form and further discussed as follows:

1. Completed *Application for Development and Improvement Project Proposals* signed by applicants and City staff.

2. Project review fee: submit project review fee in accordance with the fee schedule.

3. Project plans: submit one full size (paper), one 11 x 17-inch (paper) and an electronic (PDF), including at least:

    a. A scale drawing of the site showing property lines and delineation of lands under ownership of the applicant.

    b. Proposed and existing **stormwater management facilities** location, alignment, and elevation.

    c. Existing and proposed site contour elevations related to NGVD 29 datum, NAVD 88 datum, or other datum used by the city. (Note: NAVD 88 datum = NGVD 29 datum + 0.18 feet)

    d. Construction plans and specifications of all proposed **stormwater management facilities.**

Stormwater management plan and computations (if applicable): submit a plan signed by a registered professional engineer, that meets the minimum requirements and performance standards described in this document. A stormwater management plan must include the following items, as appropriate:

    a. Delineation of the subwatersheds contributing runoff from offsite, and existing and proposed subwatersheds onsite.

    b. Delineation of existing onsite lakes, streams, **wetland**s, and/or **floodplain** areas.

    c. Existing and proposed post-development normal, 2-year, 10-year, and 100-year water levels for the site.

    d. Stormwater runoff volume and rate analyses for existing and proposed conditions for 2-year, 10-year, and 100-year storm events.

    e. All hydrologic, hydraulic, and other models and computations necessary to design the proposed **stormwater management facilities.**

    f. Existing soil borings or other supporting soil characterization documentation.

    g. Cut and fill calculations and supporting documentation including figure showing location of cut/fill, tables documenting cut/fill, and any other necessary information for work in the Bassett Creek 100-year floodplain.

4. **Erosion and sediment control** plan (if applicable): submit plan meeting the requirements and performance standards described in this document.

5. **MIDS** calculator files (in Excel), P8 model, WINSLAMM model, or other **BCWMC** approved equal (if applicable), demonstrating the project meets the water quality requirements and performance standards described in this document.

6. BMP checklist: Submit checklist provided as part of the application form demonstrating that, to the maximum extent practicable, the plan has incorporated the structural and non-structural **BMP**s, as described in the referenced documents.

7. Electronic copy of the final approved submittal.

8. Other items required to support the proposed project.

3.3 Variance Procedure

The **BCWMC** has established the following variance procedures:

1. Applications for variances must be filed with the city in which the property is being developed, redeveloped, or **retrofitted** and must state the exceptional conditions of the property and the peculiar and practical difficulties claimed as a basis for a variance. The applicant must state in the application the reasons for requesting the variance, in accordance with all the requirements set forth below.

2. The city is required to forward all applications seeking variances from the **BCWMC** requirements and performance standards to the **BCWMC** engineer. These applications must then be reviewed by the **BCWMC** board of commissioners. In reviewing the application, the **BCWMC** will take into consideration the criteria, standards, and goals for maintaining and improving the quality of the watershed's water resources.

   To address the applicant's hardship or special situation, the **BCWMC** may grant the variance, contingent upon conditions specified. Alternatively, the **BCWMC** may deny the request and state reasons for the denial in writing.

3. In granting variances, the **BCWMC** must make a finding showing that all the following conditions exist:

   a. There are special circumstances or conditions affecting the property such that the strict application of the provisions of these standards and criteria would deprive the applicant of the reasonable use of the applicant's land.

   b. The variance is necessary for the preservation and enjoyment of a substantial property right of the applicant.

   c. The granting of the variance will not be detrimental to the public welfare or injurious to the other property in the territory in which the property is situated.

   d. In applications relating to a use in the 1% (100-year flood) **flood plain** set forth in Appendix C, the variance must not allow a lower degree of flood protection than the current flood protection.

   e. The granting of the variance will not be contrary to the intent of taking all reasonable and practical steps to improve water quality within the watershed.

4.0 Floodplain Requirements

The **floodplain** of the Bassett Creek **trunk system** is that area lying below the 1% (100–year) flood elevations as shown in the most recent version of Appendix C, or as subsequently revised due to channel improvement, storage site development, revisions to reflect the current **BCWMC**-adopted floodplain elevations, or requirements established by appropriate state or federal governmental agencies. The **BCWMC** adopted the following policies, requirements and performance standards regarding **floodplain** regulation within the Bassett Creek watershed (see the most recent version of the Watershed Management Plan):

1. **Minimum building elevation**s (lowest floor) of new and redeveloped **structures,** including **parking garages/ramps** that are underground or otherwise connected to the building**,** must be at least 2.0 feet above the 100-year flood level. Disconnected parking garages/ramps must be at or above the 100-year flood level.

2. The BCWMC encourages property owners to implement best management practices to reduce the volume of stormwater runoff beyond the minimum requirements imposed by the city's MS4 permit, NPDES construction stormwater permit and MIDS performance goal adopted by the BCWMC. Examples of stormwater runoff volume reduction methods include:

    a. Reducing the amount of planned **impervious surface** (as areas develop).

    b. Reducing the amount of **impervious surface** (during redevelopment).

    c. Increasing infiltration and/or evapotranspiration.

    d. Addition of permeable pavement.

    e. Stormwater reuse.

3. The **BCWMC** will allow only those land uses in the **BCWMC**-established **floodplain** that will not be damaged by floodwater and will not increase flooding.

4. Allowable types of land use that are consistent with the **floodplain** include recreation areas, playgrounds, surface parking lots, open picnic shelters, temporary excavation and storage areas, public utility lines, agriculture, and other open spaces. The BCWMC does not endorse projects that include long-term parking in the floodplain where floodwaters would rise to an elevation resulting in expected vehicle and other property damage. By constructing such a project, a developer assumes all risk of vehicle and other property flood damage that may result.

5. The **BCWMC** prohibits the construction of basements in the **floodplain**; construction of all other infrastructure within the **floodplain** is subject to **BCWMC** review and approval.

6. The **BCWMC** prohibits permanent storage piles, fences and other obstructions in the **floodplain** that would collect debris or restrict flood flows.

7. Where streets, utilities, and **structure**s currently exist below the 100-year **floodplain**, the **BCWMC** encourages the cities to remove these features from the **floodplain** as development or redevelopment allows.

8. The **BCWMC** requires that projects within the **floodplain** maintain no net loss in **floodplain** storage and no increase in flood level at any point along the **trunk system**. No increase in flood level will be managed to at least a precision of 0.00 feet.

9. The **BCWMC** prohibits expansion of existing non-conforming land uses/structures within the **floodplain** unless they are fully flood-proofed in accordance with codes and regulations.

10. Utility Crossings and Bridges, and other requirements are described in Section 8.0.

11. Accessory structures such as sheds, gazebos, fences, etc. must adhere to local regulations. These structures will not be reviewed by the BCWMC unless they impact creek flows or flood elevations.

5.0 Rate Control Requirements

Proposed, **nonlinear** projects creating one or more acres of new and/or **fully reconstructed impervious surfaces** must manage stormwater runoff such that peak flow rates leaving the site are equal to or less than the existing rate leaving the site for the 2-, 10-, and 100-year events based on Atlas 14, or NOAA's most current published precipitation frequency estimates (defined as precipitation depths in inches at a particular location) and using the MSE-3 rainfall distribution. Documentation of existing and proposed discharge rates for the 2-, 10-, and 100-year events must be provided to the **BCWMC** for review.

Proposed **linear projects** containing one or more acres of new and/or **fully reconstructed impervious surfaces** must manage stormwater runoff such that peak flow rates leaving the site are equal to or less than the existing rate leaving the site for the 2-, 10-, and 100-year events based on Atlas 14, or NOAA's most current published precipitation frequency estimates (defined as precipitation depths in inches at a particular location) and using the MSE-3 rainfall distribution. Documentation of existing and proposed discharge rates for the 2-, 10-, and 100-year events must be provided to the **BCWMC** for review.

Recognizing that linear projects can present challenges to meeting rate control requirements at the project scale, if rate control cannot be achieved at this scale, project proposers can follow an alternative rate control standard where they must show that proposed rate increases do not:

- exceed the capacity of downstream conveyance systems
- contribute to downstream local flooding
- increase flooding in the downstream BCWMC trunk system (i.e., meet "no rise" requirement) if the trunk system is the first downstream conveyance or water body
- negatively impact downstream local water resource values (e.g., wetland functions and values).

Disconnected trails, disconnected sidewalks, and miscellaneous disconnected **impervious surfaces** (concrete/bituminous pads, etc.) are exempt from **BCWMC rate control** requirements and performance standards.

6.0 Water Quality Requirements

The **BCWMC** requires all stormwater to be treated in accordance with the **BCWMC** performance goals for new development, redevelopment, and **linear project**s. A performance goal specifies what level of stormwater treatment must be achieved on a site. If the performance goal is not feasible and/or is not allowed for a proposed project, then the project proposer must implement the **BCWMC** flexible treatment options, as shown in the **BCWMC** Design Sequence Flow Chart (Appendix A). Site **restrictions** include those factors listed in the **BCWMC** flexible treatment options, which include, but are not limited to shallow depth to bedrock, contaminated soils, shallow groundwater, tight clay soils, existing site constraints, or zoning requirements. Section 6.1 of this document outlines the **BCWMC** performance goals. Section 6.2 of this document outlines the flexible treatment options approach.

The **BCWMC** will review projects and developments to evaluate compliance with the **BCWMC** performance goals if the proposed projects are in cities that have not adopted the **MIDS** performance goals, triggers, and flexible treatment options or equivalent requirements, or at the request of the city. For proposed projects located in cities that have adopted the **MIDS** performance goals, triggers, and flexible treatment options or equivalent requirements, the cities should review projects for conformance with **MIDS** water quality treatment standards, unless **BCWMC** review is requested by the cities.

The following surfaces are among those that will be analyzed as **impervious** building roofs and structures, decks, bituminous and concrete surfaces, swimming pools, synthetic/artificially turfed fields (unless demonstrated to be pervious surface), and compacted ground surfaces such as gravel driveways and parking lots. The following surfaces are among those that will be analyzed as pervious (if they are designed in accordance with the Minnesota Stormwater Manual): green roofs and permeable pavement/pavers. Solar panels will be analyzed based on the surface located beneath the panels. Sealcoat, mill and overlay, pavement reclamation, pavement overlays and other resurfacing activities are not considered **fully reconstructed impervious surface**s. Disconnected trails, disconnected sidewalks, and miscellaneous disconnected **impervious surfaces** (concrete/bituminous pads, etc.) are exempt from **BCWMC** water quality performance standards. Buffers should be provided for trails and sidewalks where possible.

For projects not requiring the **retention** of on-site runoff in accordance with the **BCWMC** performance goals, the **BCWMC** encourages the use of infiltration, filtration, water reuse approaches, or other abstraction of runoff from **impervious** areas for all development and **redevelopment projects** as a best practice to reduce stormwater **runoff**.

6.1 Performance Goal

6.1.1 Non-Linear Development/Redevelopment

Proposed **nonlinear** development/redevelopment projects that create one or more acres of new and/or **fully reconstructed impervious surface**s must capture and retain onsite 1.1 inches of runoff from the new and/or **fully reconstructed impervious surface**s. If the performance goal is not feasible and/or is

not allowed for a proposed project, then the project proposer must implement the flexible treatment options, as shown in the **BCWMC** Design Sequence Flow Chart in Appendix A.

Redevelopment project locations and the amount of new and/or **fully reconstructed impervious surface** will be tracked by the **BCWMC**. If a property has several **redevelopment projects** over time that individually do not trigger the **BCWMC** performance goal, but would when combined, the applicant will be required to provide treatment in accordance with the **BCWMC** performance goal for all **redevelopment**.

6.1.2 Linear Projects

Linear projects on sites without **restriction**s that create one or more acres of new and/or **fully reconstructed impervious surface**s must capture and retain onsite the larger of: 1.0 inches of runoff from the net increase in impervious surface – or 0.5 inches of runoff from the new and/or **fully reconstructed impervious surface**s.

If the performance goal is not feasible and/or is not allowed for a proposed project, then the project proposer must implement the flexible treatment options, as shown in the **BCWMC** Design Sequence Flow Chart in Appendix A. New and/or **fully reconstructed impervious surface** calculations will be based on the street surface from back of curb to back of curb; disconnected trails/sidewalks (as noted in Section 6.0) and driveways are not included in the new and/or **fully reconstructed impervious surface** calculations.

For **linear project**s that create one (1) or more acres, but less than five (5) acres of new and/or **fully reconstructed impervious surface**s, the applicant must complete the BCWMC linear project review checklist or other approved documentation and include with their application to the city. Completed checklists for approved projects must be included in annual reporting from the cities back to the BCWMC at the end of each year or provided to the BCWMC at the time of project permitting/design. For **linear project**s that create five (5) or more acres of new and/or **fully reconstructed impervious surface**s, the applicant must complete the BCWMC linear project review checklist or other approved documentation and include as part of their BCWMC application submittal.

6.2 Flexible Treatment Options

If an applicant is unable to achieve the performance goals due to site **restriction**s, flexible treatment options must be implemented following the **BCWMC** design sequence flow chart (see Appendix A). The presence of low-infiltrating soils, shallow bedrock, and karst topography are examples of locations that are not conducive to infiltration as a stormwater management approach. Other **restriction**s include but are not limited to sites that have contaminated soil or shallow groundwater, existing building or utility conflicts, or other site constraints such as zoning requirements that create difficulties in providing volume reduction.

Using the flow chart, project proposers are taken through a step-by-step approach to document site **restriction**s and how they have attempted to meet the 1.1-inch, 1.0-inch or 0.5-inch performance goal. If the performance goal is shown to be infeasible, a 0.55-inch performance and a 75 percent annual total

phosphorus removal goal is explored, followed by a maximum extent practicable volume reduction and a 60 percent annual total phosphorus removal goal, and then a final option to meet the 1.1-inch, 1.0-inch or 0.5-inch volume reduction goal at an off-site location.

6.3 Approved Techniques

In order to receive credit toward meeting the **BCWMC** performance goals, **BMP**s must be designed in accordance with the Minnesota Stormwater Manual or as otherwise approved by the **BCWMC**.

6.3.1 Software / Calculators

The **MIDS** calculator, P8, WINSLAMM, or other **BCWMC** approved approaches may be used to demonstrate volume reduction and total phosphorus removals to demonstrate compliance with the performance goals.

The **MIDS** calculator may be downloaded from the Minnesota Stormwater Manual. The applicant must submit the **MIDS** calculator Excel file for review by the **BCWMC**, along with the output summaries generated by the program. If using P8, WINSLAMM, or alternative modeling programs, either the model file or adequate summaries of input and output information must be provided for review by the **BCWMC**.

6.3.2 Minnesota Stormwater Manual

A list of approved BMPs and corresponding design guidance can be found in the Minnesota Stormwater Manual. The Minnesota Stormwater Manual should be used to determine the currently approved BMPs and design guidance. Some BMPs may require pretreatment or other design specifications.

6.3.3 Stormwater Manufactured Treatment Devices

Stormwater **manufactured treatment devices (MTD**s**)** may be used toward meeting **BCWMC** flexible treatment options. The project proposer may apply 50% TP and 80% TSS removals for stormwater **MTD**s identified in the Minnesota Stormwater Manual, providing the stormwater **MTD**s are designed in accordance with the manufacturers and Minnesota Stormwater Manual recommendations and guidelines. A project proposer may seek acceptance of a higher pollutant removal efficiency by following guidance from the Minnesota Stormwater Manual. The Minnesota Stormwater Manual has guidance regarding removal efficiencies by device and treatment tiers. If the project proposer pursues a treatment tier higher than Tier 1 (50% TP and 80% TSS), documentation must be submitted to demonstrate that Tier 2 or Tier 3 is met. The Minnesota Stormwater Manual guidance for **MTD**s is located at the following link: Manufactured treatment devices - Minnesota Stormwater Manual (state.mn.us)

6.4 Maintenance

6.4.1 Maintenance Agreement or Other Regulatory Mechanism

Proper maintenance is critical to the successful operation of stormwater BMPs. A maintenance agreement or other regulatory mechanism must be established between the property owner and the city for the stormwater management BMPs. Example maintenance agreements are provided in the Minnesota Stormwater Manual. Post-construction considerations, operation & maintenance checklists, and example

maintenance agreements are provided in the Minnesota Stormwater Manual. Maintenance agreements do not require BCWMC review.

6.4.2 Chloride Management Plan

For sites that require a stormwater maintenance agreement with the city, the applicant must prepare and implement a chloride management plan addressing the use of chloride on the site. Chloride management plans must be submitted to the city and do not require BCWMC review. These plans, at a minimum, must include:

- Contact information for responsible party for overseeing winter maintenance activities at the site.
- Site address.
- Nearest downstream receiving waterbody, lake or stream.
- List of personnel responsible for conducting winter maintenance activities and their certification and certification expiration date(s).
- Types of deicers to be used and expected rates of application.
- A map and narrative indicating snow storage and deicer storage locations, and sensitive areas to avoid application.

The chloride management plan will be reviewed annually by the property owner and the city and updated as necessary.

In all other situations, the BCWMC encourages property owners to develop and implement a winter maintenance plan addressing the proper storage and use of chloride and other deicers to reduce environmental, structural, and landscaping degradation caused by the overuse of salt.

More information is available at https://www.bassettcreekwmo.org/developer/winter-maintenance.

7.0 Erosion and Sediment Control Requirements

1. For proposed **nonlinear** projects that will result in 200 cubic yards or more of cut or fill, or 10,000 square feet or more of **land disturbance**, and proposed **linear** projects that result in one or more acres of land disturbance, an **erosion and sediment control** plan must be prepared that meets the requirements listed below. It is recommended that applicants follow the standards given in the NPDES Permit for Construction Activity (MPCA) and Minnesota Stormwater Manual. Individual single family home sites are exempt from this requirement. For maintenance dredging projects, calculations for cut/fill and land disturbance triggers exclude any work performed below the normal water level of the water body being dredged.

2. **Erosion and sediment control** plans submitted for **BCWMC** review must show the proposed methods of retaining waterborne sediments onsite during the period of construction and must specify methods and schedules to determine how the site will be restored, covered, or revegetated after construction.

3. In addition, the project proposer must:

    a. Provide specific measures to control erosion based on the grade and length of the slopes on the site, as follows:

        i. Silt fences should be placed along the toe of the slopes that have a grade of less than 3 percent and are less than 400 feet long from top to toe. The silt fences should be supported by sturdy metal or wooden posts at intervals of 6 feet or less.

        ii. Flow lengths up-slope from each silt fence should not exceed 400 feet for slopes that have a grade of less than 3 percent.

        iii. Silt fences or other **sediment control** features should be placed along the toe of the slopes that have a grade of 3 to 10 percent and are less than 200 feet long from top to toe. These fences should be supported by sturdy metal or wooden posts at intervals of 6 feet or less.

        iv. Flow lengths up-slope from each silt fence should not exceed 200 feet for slopes that have a grade of 3 to 10 percent.

        v. Diversion channels or dikes and temporary slope drains should be provided to intercept all drainage at the top of slopes that have a grade of more than 10 percent and are less than 100 feet long from top to toe. Silt fence should be placed along the toe of said slopes and should be supported by sturdy metal or wooden posts at intervals of 6 feet or less.

        vi. Diversion channels or dikes and temporary slope drains should be provided to intercept all drainage at the top of slopes that have grades of more than

10 percent. Also, diversion channels or diked terraces and temporary slope drains should be provided across said slopes if needed to ensure that the maximum flow length does not exceed 100 feet. Silt fence should be placed along the toe of said slopes and should be supported by sturdy metal or wooden posts at intervals of 6 feet or less.

vii. Sediment control logs must be installed in accordance with the manufacturer's recommendations for effective construction site **sediment control**.

viii. Other **erosion control** practices such as compost blankets, compost filter berms, and other practices should also be considered for construction site **erosion control**.

b. Require that silt fences, silt socks, or approved inlet protection devices be installed at or around each catch basin inlet on the site and that this barrier remain in place until pavement surfaces have been installed and/or final turf establishment has been achieved.

c. Ensure that flows from diversion channels or pipes are routed to sedimentation basins or appropriate energy dissipaters to prevent transport of sediment to outflow conveyors and to prevent erosion and sedimentation when **runoff** flows into the conveyors.

d. Require that site-access roads be graded or otherwise protected with silt fences, diversion channels, or dikes and temporary slope drains to prevent sediment from leaving the site via the access roads. Vehicle tracking of sediment from the construction site (or onto streets within the site) must be minimized by installing rock construction entrances, rumble strips (mud mats), wood chips, wash racks, or equivalent systems at each site access. Rock construction entrances must have a minimum height of 6 inches above the adjacent roadway and a wash-off berm with a minimum height of 2 feet above the adjacent roadway and with maximum side slopes of 4:1. An allowable alternative to the wash-off berm is to install mud mats across the entire width of the rock construction entrance, over at least 50% of the length of the rock construction entrance, and centrally placed within the total length of the rock construction entrance.

e. Require that soils tracked from the site be removed from all paved surfaces within 24 hours of discovery throughout the duration of construction.

f. Assure that silt fences and diversion channels or dikes and temporary slope drains be deployed and maintained for the duration of site construction. If construction operations interfere with these control measures, the silt fences, diversion channels or dikes and temporary slope drains may be removed or altered as needed but must be restored to serve their intended function at the end of each day.

g. Require that all exposed soil areas must be stabilized as soon as possible, but in no case later than 14 days after the construction activity has temporarily or permanently ceased or within 7 days if the project is within 1 mile of a special or impaired water. A schedule of

significant **land disturbance** work will be required as part of the **erosion and sedimentation control** plan.

h. Require that temporary or permanent mulch be uniformly applied by mechanical or hydraulic means and stabilized by disc-anchoring or use of hydraulic soil stabilizers.

i. Require a temporary vegetative cover consisting of a suitable, fast-growing, dense grass-seed mix spread at a minimum at the MnDOT-specified rate per acre. If temporary cover is to remain in place beyond the present growing season, two-thirds of the seed mix must be composed of perennial grasses.

j. Require a permanent vegetation cover consisting of sod, a suitable grass-seed mixture, or a combination thereof. On slopes greater than or equal to 3 feet horizontal: 1 foot vertical, seeded areas should be either mulched or covered by fibrous blankets to protect seeds and limit erosion.

k. Provide temporary on-site sedimentation basins when 10 or more acres of **land disturbance** drains to a common location. Install temporary sediment basins where appropriate in areas with steep slopes or highly erodible soil drain to one area. On-site detention basins must be designed and maintained to achieve pollutant removal efficiencies equal to or greater than those obtained by implementing the criteria set forth by the NPDES Permit for Construction Activity (MPCA, latest version) and the Minnesota Stormwater Manual.

l. Include effective energy dissipation devices or stilling basins to prevent erosion at all stormwater outfalls. Specifically:

    i. Under full-pipe-flow-conditions, outfalls with outlet velocities of less than 4 feet per second (fps) that discharge at or below the normal water level (NWL) of the receiving water body, generally should not require riprap or energy dissipators.
    ii. Under full-pipe-flow-conditions, outfalls with outlet velocities of no more than 8 fps shall require riprap or other forms of energy dissipation.
    iii. Under full-pipe-flow-conditions, outfalls with outlet velocities that exceed 8 fps must include energy dissipators (such as stilling basins, outlet structure with baffle blocks, etc.) and modeling to demonstrate the outlet velocity from the energy dissipator is decreased to no more than 6 fps.
    iv. Outfalls that discharge to the creek must, to the extent practicable, project flow downstream in a direction of 30 degrees or less from the normal flow direction.

m. Specify riprap consisting of natural angular stone suitably graded by weight for the anticipated velocities.

n. Provide riprap to an adequate depth below the normal water level and to a height above the outfall or channel bottom to ensure that the riprap will not be undermined by scour or rendered ineffective by displacement.

o. Specify that riprap is placed over a suitably graded filter material or filter fabric to ensure that soil particles do not migrate through the riprap and reduce its stability.

p. Specify that outlet pipes should be extended such that its invert elevation discharges at or below the normal water level (NWL) of the receiving water body to provide energy dissipation. As an alternative, adequate armoring must be provided to prevent erosion and channelization between the outfall and receiving water body.

q. Streambank erosion and streambed degradation control measures must be employed whenever the net sediment transport for a reach of stream is greater than zero or whenever the stream's natural tendency to form meanders directly threatens damage to **structures**, utilities, or natural amenities in public areas.

r. Require that implementation of stormwater management practices are phased and incorporated as construction progresses.

s. Require that if erosion control netting is used as part of site stabilization, products must be used to minimize the impacts on wildlife. Netting practices that are considered "wildlife friendly," include those that use natural fiber or 100 percent biodegradable materials and that use a loose weave with a non-welded, movable jointed netting. Products that are not wildlife friendly include square plastic netting, netting made of polypropylene, nylon, polyethylene, or polyester. Synthetic netting and other synthetic BMPs are not allowed for final stabilization.

t. Require that silt fence or other sediment controls must be installed at the base of stockpiles on the downgradient perimeter prior to the initiation of stockpiling.

u. Include installation details for all BMPs on the drawings.

8.0 Other Requirements

8.1 TMDL Studies

Multiple waterbodies within the Bassett Creek watershed are on the Minnesota Pollution Control Agency's current impaired waters 303(d) list and total maximum daily load (TMDL) studies have been completed for the waterbodies. The TMDL studies may have water quality requirements that differ from those outlined in this document. The pollutant waste load allocations specified in MPCA-approved TMDL implementation plans are incorporated into MS4 permits and must be met by cities within the waterbodies' watersheds. It is recommended that **BMP**s used to meet TMDL requirements be designed and maintained in accordance with the recommendations in the respective TMDL documents. At the city's request, the **BCWMC** may review development or redevelopment plans that include **BMP**s that are not otherwise required by **BCWMC** but address TMDL load reduction requirements.

8.2 Diversion of Surface Water Runoff

The **BCWMC** will review diversion plans to determine the effect of the proposal on the Bassett Creek watershed and such plans will be subject to **BCWMC** approval. With respect to diversions, the **BCWMC**:

1. Prohibits any diversions of surface water within, into, or out of the watershed that may have a substantial adverse effect on stream flow or water levels at any point within the watershed.

2. Requires that plans for intra- or inter-watershed diversions must include an analysis of the effects of the diversion on flooding, water quality, and aesthetic quality along the creek.

3. Requires that efforts be made to ensure that there is no migration of fish or other aquatic species from one watershed to another.

8.3 Utility Crossings and Bridges

1. Utility crossings including pressurized water lines and force mains, installed using directional drilling, must be at least 5.0 feet below the natural channel invert

2. Utility crossings including gravity storm sewers and sanitary sewers, must be installed so the top of the pipe is at least 3.0 feet below the natural channel invert and at sufficient depth below the natural channel invert to protect the sewer line. If special circumstances or pre-existing site conditions prevent achieving the minimum cover, the BCWMC will consider alternative proposals, provided the applicant demonstrates the channel, channel invert, and utility are protected.

3. New or reconstructed bridges should be constructed so the cross-sectional area of the channel is not reduced due to the project. Bridge abutments and approaches must be installed above the 100-year flood elevation and the lowest member of all bridge crossings must be at least 1 foot above the 100-year flood elevation to prevent debris accumulation, unless approved otherwise by the BCWMC. If encroachments in the floodplain or channel cross section are proposed, then no-rise to at least a precision of 0.00 feet would need to be demonstrated by modeling the structure

and modifying the BCWMC's XPSWMM model (or its most current hydrologic and hydraulic model).

8.4 Bassett Creek Tunnels

The City of Minneapolis owns, maintains and operates the old Bassett Creek tunnel. The City's responsibility includes maintaining a capacity of 50 cubic feet per second in the old Bassett Creek tunnel during the 100-year storm event to accommodate the overflow of stormwater that cannot be accommodated in the new tunnel. Because this affects the function of the **BCWMC** Flood Control Project, the **BCWMC** has a vested interest in ensuring that the 50 cubic feet per second capacity in the old Bassett Creek tunnel is maintained, which includes ensuring that proposed projects do not jeopardize the structural integrity of the old Bassett Creek tunnel. The City of Minneapolis takes the lead on reviewing projects that affect the old Bassett Creek tunnel and the city coordinates with **BCWMC** as needed. The City may require capacity greater than 50 cubic feet per second to accommodate its local runoff.

The City of Minneapolis owns the new Bassett Creek tunnel and jointly maintains and operates the new Bassett Creek tunnel with the BCWMC and MNDOT. Proposed projects located within the jurisdiction of the BCWMC or the Mississippi Watershed Management Organization must be submitted for BCWMC review and approval if the proposed project will increase the area tributary to the new Bassett Creek tunnel, add connections or outlets to the new Bassett Creek tunnel, change the rate of runoff in the new Bassett Creek tunnel for the 10-year, 50-year, or 100-year event, or threaten the structural integrity of the new Bassett Creek tunnel.

8.5 Regional Best Management Practices

As noted in Section 2.9, regional best management practices (BMPs) must be submitted to the BCWMC for review if the intent is to use the BMPs to meet the BCWMC's floodplain, rate control, or water quality requirements and performance standards. One objective of providing regional BMPs may be to create floodplain, rate control and/or water quality credits that can be used by future developers, a city or others.

The BCWMC will review proposed regional BMPs and submitted materials (per Sections 4, 5, and/or 6, and Section 7, as applicable) to determine the total amount of credits created by the regional BMP. Regional treatment approvals will include documentation of quantifiable pollutant removals associated with the project.

The project proposer (likely the city) of regional BMPs is responsible for tracking and determining how the approved credits will be distributed to future projects. For future projects that are required to meet the BCWMC stormwater requirements and performance standards, credits must be applied consistently with the Design Sequence Flow Chart, shown in Appendix A. A separate application will be required for all future projects where the regional treatment credits are to be applied. These applications must include reporting on the stormwater credits used to date and the remaining credits available within the regional facility.

9.0 Definitions[1]

BCWMC: Bassett Creek Watershed Management Commission

Best management practices (BMPs): the structural, non-structural, and institutional controls used to improve the quality of stormwater runoff.

Commercial, industrial, institutional, or public development/redevelopment projects: typically result in larger areas of **impervious surface**, typically in the range of 60 to 80 percent imperviousness. Examples of these developments include shopping malls, stores, schools, hospitals, and warehouses.

Complex projects: include projects that are 40 acres or more, controversial, involve more than one property owner, require detailed hydrologic or hydraulic modeling, require vast changes to infrastructure (such as stormwater systems), include many **wetland** impacts, require extensive environmental review, or involve many different land uses within the same development project

Construction sequencing: a specified work schedule that coordinates the timing of land-disturbing activities and the installation of erosion-protection and sedimentation-control measures

Disconnected Impervious Surface: Impervious area from which stormwater runoff generally sheet flows first to a pervious surface before flowing into a storm drainage system, receiving waterbody, or wetland.

Erosion control: any efforts to prevent the wearing or washing away of the soil or land surface

Floodplain: lands adjacent to lakes, streams or wetlands, which are inundated by the 1% (100-year) flood.

Fully Reconstructed Impervious Surface: areas where impervious surfaces and engineered subgrade have been removed, and underlying soils have been exposed. Activities such as structure renovation, mill and overlay projects, and other pavement rehabilitation projects that may remove engineered subgrade, but do not expose the underlying soil material beneath the structure, pavement or activity are not considered **fully reconstructed impervious surface**. In addition, other maintenance activities such as catch basin and pipe repair/replacement, lighting, and pedestrian ramp improvements will not be considered **fully reconstructed impervious surfaces**. Reusing existing building foundations and re-roofing existing buildings are not considered **fully reconstructed impervious surfaces**.

Impervious surface: a surface in the landscape that impedes the infiltration of rainfall and results in an increased volume of surface runoff. **Impervious surface** includes but is not limited to building roofs and structures, decks, bituminous and concrete surfaces, swimming pools, synthetic/artificially turfed fields (unless demonstrated to be pervious surface), and compacted ground surfaces such as gravel driveways and parking lots.

Land disturbance: any alteration of the ground surface that could result, through the action of wind and/or water in soil erosion, substantial compaction, or the movement of sediment into waters, **wetland**s, storm sewers, or adjacent property. Land disturbing activity includes but is not limited to soil stripping, clearing, grubbing, grading, excavating, filling, stockpiling soil or earth materials, and the complete

removal of an impervious surface and engineered subgrade that exposes the underlying soils. Typical, routine maintenance or urban agricultural operations, mill and overlay projects, and resurfacing projects that do not expose the underlying soils are not considered to be land disturbing activities for the purpose of these requirements.

Linear project: Construction or reconstruction of a road, rail, trail, or other transportation route, or the construction, repair, or reconstruction of a utility that is not a component of a larger development or redevelopment project. Examples include road and road widening projects, trails, ditch work, road or rail replacement, and utility installation.

Manufactured Treatment Device (MTD): A **manufactured treatment device (MTD**) is a pre-fabricated stormwater treatment structure utilizing settling (sedimentation), filtration, absorptive/adsorptive materials, vortex separation, vegetative components, and/or other appropriate technology to remove pollutants from stormwater runoff (New Jersey Department of Environmental Protection). MTDs are typically proprietary devices.

MIDS: Minimal Impact Design Standards developed by the Minnesota Pollution Control Agency (MPCA) to minimize stormwater runoff and pollution and preserve natural resources. MIDS includes specific performance goals, flexible treatment options, and the **MIDS** calculator.

Minimum building elevation: the lowest floor of a structure, including the basement.

Nonlinear project: Development, redevelopment and other types of projects that do not meet the definition of a **linear project**.

Priority stream: Main Stem of Bassett Creek, North Branch of Bassett Creek, Sweeney Lake Branch of Bassett Creek, and Plymouth Creek. A list of the priority streams can be found in Table 2-1 of the Watershed Management Plan.

Rate control: controlling the rate that stormwater is released from localized holding areas into larger conveyance systems

Residential development/redevelopment projects: typically result in smaller areas of **impervious surface**, typically in the range of 25 to 60 percent imperviousness. Examples of these projects include single family home construction, townhome construction, and apartment building construction.

Restriction: as described in the **MIDS** flexible treatment options, one or more of the following factors that prevent full compliance with the **MIDS** volume reduction performance goal:

i. Karst geology
ii. Shallow bedrock
iii. High groundwater
iv. Hotspots or contaminated soils
v. Drinking Water Source Management Areas or within 200 feet of drinking water wells
vi. Zoning, setbacks or other land use requirements

vii. Excessive cost

viii. Poor soils (infiltration rates that are too low or too high, problematic urban soils)

Retention: the permanent or temporary storage of stormwater to prevent it from leaving the development site

Retrofit: the introduction of a new or improved stormwater management element where it either never existed or did not operate effectively

Runoff or stormwater runoff: under Minnesota Rule 7077.0105, subpart 41b, stormwater "means precipitation runoff, stormwater runoff, snow melt runoff, and any other surface runoff and drainage." (According to the Federal Code of Regulations under 40 CFR 122.26 [b][13], "stormwater means stormwater runoff, snow melt runoff and surface runoff and drainage."). Stormwater does not include construction site dewatering.

Sediment control: The methods employed to prevent sediment from leaving the development site. **Sediment control** practices include **silt fences**, sediment traps, earth dikes, drainage swales, check dams, subsurface drains, pipe slope drains, storm drain inlet protection, other appropriate measures, and temporary or permanent sedimentation basins.

Stormwater management facilities: include storm sewer pipes, ditches, ponds, **infiltration basin**s, etc.

Structure: Any impervious building or other object that is constructed or placed on the ground and that is, or is intended, to remain in place for longer than a temporary period.

Temporary protection (measure): short-term methods employed to prevent erosion. Examples of such protection include straw, mulch, erosion control blankets, wood chips, and erosion netting.

Trunk system: The trunk creek system is the responsibility of the **BCWMC** and includes the Main Stem of Bassett Creek from Medicine Lake to the box culvert/tunnel; the North Branch from upstream of Co. Road 9/Rockford Road to its junction with the Main Stem; the Sweeney Lake Branch from its source in Section 5, T117N, R21W to its junction with the Main Stem downstream of Sweeney Lake; and Plymouth Creek from the point where it intersects with Highway 55 in Section 17, T118N, R33W, to Medicine Lake.

Wetland: defined in Minn. R. 7050.0130, subp. F and includes those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wetlands generally include swamps, marshes, bogs, and similar areas. Constructed **wetland**s designed for wastewater treatment are not waters of the state; to be a **wetland** the area must meet **wetland** criteria for soils, vegetation, and hydrology as outlined in the 1987 U.S. Army Corps of Engineers **Wetland** Delineation Manual.

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[1] Some definitions taken directly from the *Minnesota Stormwater Manual*

Appendix A

BCWMC Flexible Treatment Options Flow Chart

BCWMC DESIGN SEQUENCE FLOW CHART

version 1.0

last revised: April 2026

BCWMC Performance Goal

New nonlinear and redevelopment projects: Retain on site a volume of 1.1" from new and fully reconstructed (D) impervious surfaces

Linear projects: Retain on site a volume equivalent to the larger of: 1.0" of runoff from the net increase in impervious surfaces or 0.5" of runoff from the new and/or fully reconstructed impervious surfaces

Conduct Site Review:

- Aerial Photos and Topographic Maps
- County Soil Surveys and other Soil Information as Available
- County Geologic Atlas
- Local Groundwater Levels
- DWSMA and Wellhead Protection Maps
- FEMA and Local Floodplain Maps
- Soil Borings and Site Survey
- MPCA Listing of Potentially Contaminated Sites
- Phase 1 and 2 Environmental Site Assessments
- TMDLs and Local Water Quality Standards
- Wetland Delineations, MNRAM Assessments, and Wetland Classifications
- Proposed Conditions, Conceptual/Preliminary Site Design
- Local zoning and land use requirements/ordinances, including stormwater rate control requirements
- Communication with Local Landowners, LGU, or Others Knowledgeable about the Site
- Site Inspection

Is the project linear? — Yes → Does the project create one acre or more of new and/or fully reconstructed impervious surfaces? — Yes → Are there restraints due to lack of available ROW, off site drainage and/or rate control requirements? (F) — Yes → Is FTO #2 feasible?

- Is FTO #2 feasible? — Yes:
  - Select FTO # 2
  - Provide documentation of offsite run on to project area
  - Provide documentation of lack of right-of-way.
- Is FTO #2 feasible? — No → Select FTO #3. Provide site survey, maps, regulations, and/or cost estimates documenting that meeting the original performance goal or FTO alternatives is not feasible in addition to other documentation as required by LGU.
- Are restraints due to lack of available ROW, off site drainage and/or rate control requirements? (F) — No
- Does the project create one acre or more of new and/or fully reconstructed impervious surfaces? — No → BCWMC performance goal does not apply
- Is the project linear? — No → Does the project create one acre or more of new and/or fully reconstructed (D) impervious surfaces? — No → BCWMC performance goal does not apply

Are there zoning and land use requirements (density, parking, setbacks, etc.) that make the Performance Goal not feasible? — Yes → Is BMP relocation feasible? — No → Is FTO #1 feasible? — No → Is FTO #2 feasible? — No → Select FTO #3. Provide site survey, maps, regulations, and/or cost estimates documenting that meeting the original performance goal or FTO alternatives is not feasible in addition to other documentation as required by LGU.

- Is FTO #1 feasible? — Yes:
  - Select FTO #1
  - Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal
- Is FTO #2 feasible? — Yes:
  - Select FTO #2
  - Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal.
- Is BMP relocation feasible? — Yes

Is the site located in an ERA, DWSMA, wellhead protection area, or within 200 feet of a drinking well? — Yes → Can a local unit of government provide a higher level of engineering review to ensure a functioning system that prevents adverse impacts to groundwater? — No →

- Select FTO #2
- No infiltration practices allowed
- Explore non-infiltration volume reduction practices
- Provide DWSMA or well location map

Can a local unit of government provide a higher level of engineering review to ensure a functioning system that prevents adverse impacts to groundwater? — Yes

Are there existing or proposed structures or infrastructure (e.g., rate control BMPs, utilities, buildings, roadway, easements) that make the Performance Goal not feasible? — Yes → Is BMP relocation feasable? — No → Is FTO #1 feasible? — No → Is FTO #2 feasible? — No → Select FTO #3. Provide site survey, maps, regulations, and/or cost estimates documenting that meeting the original performance goal or FTO alternatives is not feasible in addition to other documentation as required by LGU.

- Is FTO #2 feasible? — Yes:
  - Select FTO #2
  - Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal
- Is FTO #1 feasible? — Yes:
  - Select FTO #1
  - Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal
- Is BMP relocation feasable? — Yes

Are active karst areas within 1000 feet down-gradient or 100 feet up-gradient of the BMP location? — Yes → Can a local unit of government provide a higher level of engineering review to ensure a functioning system that prevents adverse impacts to groundwater? — No → Is BMP relocation onsite to a location without karst feasible? — No → Is FTO #2 feasible?

- Is FTO #2 feasible? — No → Select FTO #3. Provide site survey, maps, regulations, and/or cost estimates documenting that meeting the original performance goal or FTO alternatives is not feasible in addition to other documentation as required by LGU.
- Is FTO #2 feasible? — Yes:
  - Select FTO #2
  - No infiltration practices allowed
  - Explore non-infiltration volume reduction practices
  - Provide soil borings or report from a professional geologist or geotechnical engineer.
- Is BMP relocation onsite to a location without karst feasible? — Yes
- Can a local unit of government provide a higher level of engineering review to ensure a functioning system that prevents adverse impacts to groundwater? — Yes

Is shallow groundwater or shallow bedrock present on site? — Yes → Conduct detailed site investigation (i.e., borings, excavations, consultation with a professional geologist). → Is there >3 feet of soil depth (>10 feet is preferred) from bottom of BMP to bedrock and seasonally saturated soils? — No → Is BMP relocation onsite to avoid shallow groundwater and bedrock feasible? — No → Can BMP be raised? — No → Is FTO #2 feasible? — No →

- Select FTO #3. Provide site survey, maps, regulations, and/or cost estimates documenting that meeting the original performance goal or FTO alternatives is not feasible in addition to other documentation as required by LGU.

Is FTO #2 feasible? — Yes →

- Select FTO #2
- No infiltration practices allowed
- Explore non-infiltration volume reduction practices
- Provide soil borings or report from a professional geologist or geotechnical engineer.

Can BMP be raised? — Yes → Raise BMP enough to ensure 3 feet (preferably 10 feet) of soil between bottom of BMP and top of bedrock and seasonally saturated soils.

- Is FTO #2 feasible? — Yes
- Is BMP relocation onsite to avoid shallow groundwater and bedrock feasible? — Yes
- Is there >3 feet of soil depth (>10 feet is preferred) from bottom of BMP to bedrock and seasonally saturated soils? — Yes

Is there presence of contaminated soils and/ or groundwater, or hotspot runoff? (G) — Yes → Can hotspot or contamination be isolated or remediated to mitigate risk of increased contamination? — No →

- Select FTO #2
- No infiltration practices allowed
- Explore non-infiltration volume reduction practices
- Provide Phase I or II ESAs, or other documentation of potential contamination or hotspot runoff
- Provide documentation of extent of contamination and remediation alternatives considered

Can hotspot or contamination be isolated or remediated to mitigate risk of increased contamination? — Yes

Are there very low infiltrating soils (<0.06 inches per hour)? (E) — Yes → Is BMP relocation onsite to a higher-infiltrating location feasible? — No → Can BMP be sized to drain dry within 48 hours (24 hours in locations that are tributary to trout streams)? — No → Provide soil boring or infiltration test results documenting low-infiltrating soils. → Is FTO #1 (lower volume control standard) feasible, allowing the BMP to drain within 48 hours (24 hours in locations that are tributary to trout streams)? — No →

- Select FTO #2
- No infiltration practices allowed
- Explore non-infiltration volume reduction practices
- Provide soil boring or infiltration test results documenting low infiltration rates.

Is FTO #1 (lower volume control standard) feasible, allowing the BMP to drain within 48 hours (24 hours in locations that are tributary to trout streams)? — Yes →

- Select FTO #1
- Provide soil boring or infiltration test results documenting high-infiltrating soils.

- Can BMP be sized to drain dry within 48 hours (24 hours in locations that are tributary to trout streams)? — Yes
- Is BMP relocation onsite to a higher-infiltrating location feasible? — Yes

Are there very high infiltrating soils (>8.3 inches per hour)? (E) — Yes → Is BMP relocation onsite to a lower-infiltrating location feasible? — No → Can subgrade be modified to slow the rate of infiltration to less than 8.3 inches per hour? — No →

- Select FTO #2
- No infiltration practices allowed
- Explore non-infiltration volume reduction practices
- Provide soil boring or infiltration test results documenting high-infiltrating soils.

- Is BMP relocation onsite to a lower-infiltrating location feasible? — Yes
- Can subgrade be modified to slow the rate of infiltration to less than 8.3 inches per hour? — Yes

Are there adverse surface water hydrologic impacts from infiltration practices (e.g., impacting perched wetland)? — Yes → Can the BMP be relocated onsite to avoid adverse hydrologic impacts? — No → Would BMPs accommodating FTO Alternative #1 avoid adverse hydrologic impacts?

- Yes →
  - Select FTO #1
  - Provide report documenting potential hydrologic impacts from infiltration on the site, prepared by registered engineer, hydrologist, or wetlands specialist.
- No →
  - Select FTO # 2
  - Explore non-infiltration volume reduction practices
  - Provide report documenting potential hydrologic impacts from infiltration on the site, prepared by registered engineer, hydrologist, or wetlands specialist.

Can the BMP be relocated onsite to avoid adverse hydrologic impacts? — Yes

Complete Design Using Performance Goal
(As modified by FTO alternatives, if applicable)

BCWMC Flexible Treatment Options (FTO)

The Flexible Treatment Options (FTO) alternatives presented here should be employed when the Performance Goal is not feasible and/or allowed. The designer should document the reasons why the Performance Goal and rejected FTO alternatives are not feasible and/ or allowed.

FTO #1
Applicant attempts to comply with the following conditions:

1.a. Achieve at least 0.55" volume reduction goal for new nonlinear and redevelopment projects,
1.b. Achieve volume reduction to the maximum extent practicable (as defined by the MS4 permit) for linear projects, and
1.c. *Remove 75%* of the annual TP load, and
1.d. Options considered and presented shall examine the merits relocating project elements to address, varying soil conditions and other constraints across the site

FTO #2
Applicant attempts to comply with the following conditions:

2.a. Achieve volume reduction to the maximum extent practicable (as defined by the MS4 permit), and
2.b. *Remove 60%* of the annual TP load, and
2.c. Options considered and presented shall examine the merits of relocating project elements to address, varying soil conditions and other constraints across the site.

FTO #3
Off-site mitigation (including banking or cash or treatment on another project, as determined by the local authority) equivalent to the volume reduction performance goal can be used in areas selected in the following order of preference:

1. Locations that yield benefits to the same receiving water that receives runoff from the original construction activity
2. Locations within the same Department of Natural Resource (DNR) catchment area as the original construction activity
3. Locations in the next adjacent DNR catchment area up-stream
4. Locations anywhere within the local authorities jurisdiction

Notes:

A. Volume reduction techniques considered shall include infiltration, rainwater harvesting & reuse, bioretention, permeable pavement, tree boxes, grass swales and/or additional techniques included in the MIDS calculator or the Minnesota Stormwater Manual.
B. Applicant shall document the flexible treatment options decision sequence, following the order of alternatives presented here.
C. For FTO #2, the applicant is encouraged to use BMPs that reduce volume. Secondary preference is to employ filtration techniques, followed by rate control BMPs.
D. 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 alter the underlying soil material beneath the structure, pavement or activity are not considered full reconstruction. In addition, other maintenance activities such as catch basin and pipe repair/ replacement, lighting, and pedestrian ramp improvements shall not be considered fully reconstructed impervious surfaces. Reusing an existing building foundation and re-roofing of an existing building are not considered fully reconstructed.
E. Soils that infiltrate too quickly may not provide sufficient pollutant removal before the infiltrated runoff enters groundwater. Soils that drain too slowly may result in problems with BMP performance.
F. A reasonable attempt must be made to obtain right-of-way during the project planning process
G. Hotspots includes any portion of a facility where infiltration is prohibited under an NPDES/SDS industrial stormwater permit issued by the MPCA

Appendix B

Buffer Requirements

Appendix B

Buffer Requirements

The **BCWMC** requires that cities maintain and enforce:

- **Wetland** buffer requirements for proposed projects that will result in 200 cubic yards or more of cut or fill, or 10,000 square feet or more of land disturbance. For individual single family home lots, the wetland buffer trigger only applies if the proposed activity is immediately adjacent to a wetland.
- **Priority stream** buffer requirements for proposed projects that will result in 200 cubic yards or more cut or fill, or 10,000 square feet or more of **land disturbance**. **Priority stream**s in the Bassett Creek watershed include the Main Stem of Bassett Creek, the North Branch of Bassett Creek, the Sweeney Lake Branch of Bassett Creek, and Plymouth Creek. A list of the priority streams can be found in Table 2-1 of the Plan.

Buffer requirements will vary depending on the type of water body and classification of the water body. Buffers are areas of vegetative cover that are upland of the delineated **wetland** edge or the ordinary high water level of the stream (determined as the average top of bank elevation consistent with MDNR guidance [MDNR, 1993]), and that occur in a natural condition or through restoration. Buffer areas consist of shrubbery and trees, and native grasses or forbs or both that are typically not mowed, fertilized or manicured in any manner. These strips of land surrounding water bodies protect their shorelines from erosion, while serving to filter sediment, chemicals and other nutrients before stormwater discharges into the water body. Buffer strips are also beneficial in providing habitat for wildlife.

As noted, the **BCWMC** does not specifically review buffers for proposed projects. The following sections include the minimum buffer requirements that must be included in each city's local controls. City buffer requirements may be more stringent than the minimum requirements specified herein.

B.1 Buffer Width Requirements

B.1.1 Wetland Buffer Width Requirements

Cities' local controls must require average minimum buffer widths according to the Minnesota Rapid Assessment Method (MnRAM) classification (or similar classification system approved by the city):

- An average of 75 feet and a minimum of 50 feet from the delineated edge of wetlands classified as Preserve.
- An average of 50 feet and a minimum of 30 feet from the delineated edge of wetlands classified as Manage 1.
- An average of 25 feet and a minimum of 15 feet from the delineated edge of wetlands classified as Manage 2 or Manage 3.

A plan showing the delineated boundary of the **wetland**, proposed buffer area, and MnRAM classification for the **wetland** must be submitted for city review. Maintenance of the buffer area must be included in the maintenance agreement developed between the city and the applicant.

B.1.2 Stream Buffer Width Requirements

Cities' local controls must require the following buffer widths adjacent to **priority stream**s:

- For individual single family homes, the buffer width must be at least 10 feet or 25 percent of the distance between the ordinary high water level (measured from ordinary high water level, determined as the average top of bank elevation consistent with MDNR guidance [MDNR, 1993]) and the nearest existing **structure**, whichever is less.
- For all other proposed projects, the buffer width must be an average of 30 feet and a minimum of 20 feet (measured from ordinary high water level, determined as the average top of bank elevation consistent with MDNR guidance [MDNR, 1993])

A plan showing the ordinary high water level of the stream (measured from ordinary high water level, determined as the average top of bank elevation consistent with MDNR guidance [MDNR, 1993]), nearest adjacent **structure**, and proposed buffer area must be submitted for city review. Maintenance of the buffer area must be included in the maintenance agreement developed between the city and the applicant.

Alternative Buffer Width Requirements

Cities may accept narrower buffer strips in certain situations, on a case-by-case basis, due to the unique physical characteristics of a specific project site. Narrower buffer strips would be allowed (minimum required width of 10 feet) based on an assessment of individual site conditions, such as: parcel size, roads/utilities, or undue hardship that would occur if the buffer standards were applied.

- Parcel size.
- Existing roads and utilities on the parcel.
- Percentage of the parcel covered by streams.
- The configuration of the streams on the parcel.
- Any undue hardship that would arise from not allowing the alternative buffer strip.

Cities must provide reporting/documentation to BCWMC at the end of each year or at the time of project permitting/design, regarding occurrences and reasons for when alternative buffer width standards are applied.

B.2 Buffer Design Requirements

- Buffer required for all proposed projects shall be limited to property owned or managed by the applicant (i.e. to the extent of a drainage and utility easement owned by a city on a city stormwater project or to the property boundary on a commercial, institutional, or residential project).
- Buffer areas must be left native if not disturbed as part of the project and where acceptable natural vegetation exists. A buffer has acceptable natural vegetation if it:
    - Has a continuous, dense layer of perennial grasses that have been uncultivated or unbroken for at least five consecutive years, or
    - Has an overstory of trees or shrubs with at least 80 percent canopy closure that have been uncultivated or unbroken for at least five consecutive years, or
    - Contains a mixture of the plant communities described above that have been uncultivated or unbroken for at least five consecutive years.
- Buffer areas must be planted with native plants if disturbed as part of the project (plantings must be comprised of at least 75% native species).
- Soil in the buffer areas disturbed as part of the project shall be amended, as necessary, to ensure that the soil has an organic content of not less than 10 percent and not more than 35 percent.
- Buffers must be kept free of all **structure**s and features, including fences and play equipment.
- Buffers shall not be used for storage of household and personal items, lawn equipment, furniture, firewood, parts, yard waste, and the like.
- A conservation easement or equivalent to the city for the buffer area is recommended to ensure appropriate maintenance of the buffer.
- Buffer vegetation must not be cultivated, cropped, pastured, mowed, fertilized, subject to the placement of mulch or yard waste, or otherwise disturbed, except for periodic cutting or burning that promotes the health of the buffer, actions to address disease or invasive species, mowing for purposes of public safety, temporary disturbance for placement or repair of buried utilities, or other actions to maintain or improve buffer quality and performance.
- The edge of the buffer must be indicated by permanent, free-standing markers at the buffer's upland edge. A marker will be placed along each lot line, with additional markers at an interval of no more than 200 feet or where needed to indicate the contour of the buffer area.

B.3 Buffer Maintenance Requirements

The affected property owner or homeowner association that is responsible for the maintenance must:

- Maintain and repair damage to buffer areas from such activities as mowing, cutting, grading or other prohibited activities, unless mowing is approved by city staff as a buffer management strategy. Permission must be obtained from the city before implementing buffer management strategies, which may include mowing, burning, and the use of herbicides.

- Be responsible for maintaining only the permitted vegetation in the buffer area and must remove all noxious weeds and invasive, non-native species such as European buckthorn.
- Ensure that all soil surfaces in the buffer area are planted with the permitted vegetation and that there is no open soil surface that may result in erosion.

B.4 Buffer Exemptions

Exemption areas must be properly designed, maintained, and constructed to prevent erodible conditions. The **BCWMC** will allow the following exemptions from the buffer requirements to be included in cities local controls, at the discretion of the city:

- Public recreational facilities adjacent to the feature (e.g. trails, stairways, boardwalks and docks) up to 20 feet in width will be allowed, with that width being added to the required buffer width.
- Minimally improved areas within the buffer for private access to the feature will be allowed (e.g. wood chip trails, stairways, and docks).

A perpendicular access to the feature is allowed up to 20 feet in width or 20 percent of the lot width, whichever is more restrictive.

Appendix C

BCWMC Flood Profiles, Revised August 2022

Appendix C: BCWMC Flood Profiles (elevations in NAVD88 datum), revised Aug 2022 [1]

Location (Description)	Creek Distance Above the Mississippi River (feet)	100-Year		10-Year		2-Year	
		Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)
BASSETT CREEK MAIN STEM							
Tunnel Inlet	8,000	809.8	1,280	804.8	660	802.4	400
Van White Memorial Blvd (DS)	---	809.8	1,280	805.0	660	803.0	400
Van White Memorial Blvd (US)	---	809.8	1,410	805.0	660	803.1	400
Irving Ave Bridge (DS)	9,800	809.9	1,280	806.7	660	805.5	400
Irving Ave Bridge (US)	---	809.9	1,400	807.0	660	805.9	400
Cedar Lake Rd (DS)	---	812.9	1,400	810.7	660	809.5	400
Cedar Lake Rd (US)	10,900	813.1	1,400	810.9	660	809.7	400
CP RR Bridge (DS)	---	813.7	1,400	811.5	660	810.2	400
CP RR Bridge (US)	11,600	814.8	1,390	811.5	660	810.3	400
Penn Ave Bridge & Culvert (DS)	12,410	812.9	1,390	812.1	660	810.8	400
Penn Ave Bridge & Culvert (US)	---	814.8	1,390	813.5	660	811.9	400
BNSF RR Bridge(DS)	---	814.7	1,390	813.5	660	811.9	400
BNSF RR Bridge (US)	12,670	814.8	1,390	813.5	660	811.9	400
CP RR Bridge (DS)	13,930	815.8	1,390	814.1	660	812.8	400
CP RR Bridge (US)	---	815.9	1,390	814.2	660	812.9	400
Fruen Mill Dam (DS)	14,150	817.0	1,390	815.5	660	814.9	400
Fruen Mill Dam (US)	---	819.8	1,390	818.0	660	817.2	400
Glenwood Ave (DS)	---	821.8	1,390	819.5	660	818.3	400
Glenwood Ave (US)	14,855	821.8	1,300	819.4	600	818.3	360
Hwy 55 (DS)	16,500	823.2	1,200	820.8	600	819.5	360
Hwy 55 (US)	---	826.5	1,510	823.7	660	822.0	410
Golf Cart Bridge	---	826.5	1,540	823.8	710	822.0	440
CP RR Bridge (DS)	---	826.5	1,540	823.8	710	822.0	440
CP RR Bridge (US)	---	826.6	1,540	823.8	720	822.0	440
Plymouth Ave Bridge	19,500	826.6	1,580	823.8	750	822.1	450
Theodore Wirth Pkwy (DS)	20,480	826.6	1,480	823.8	740	822.1	450
Theodore Wirth Pkwy (US)	---	826.8	1,480	824.9	750	822.5	460
Confluence w/Sweeney Lake Branch (DS)	22,000	827.3	1,480	825.3	780	823.7	470
Confluence w/Sweeney Lake Branch (US)	---	827.3	1,360	825.3	660	823.7	390

[1] BCWMC 2021 Update XP-SWMM Model, August 2022. The BCWMC intends to update the XP-SWMM Model on an as-needed basis to reflect significant projects and changes within the watershed. The most current version of the model must be used.

DS – Downstream

US – Upstream

Appendix C: BCWMC Flood Profiles (continued, elevations in NAVD88 datum), revised Aug 2022 [1]

Location (Description)	Creek Distance Above the Mississippi River (feet)	100-Year		10-Year		2-Year	
		Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)
BASSETT CREEK MAIN STEM (continued)							
Golden Valley Rd (DS)	---	828.3	1,360	826.8	660	826.2	390
Golden Valley Rd (US)	23,800	833.7	1,360	828.9	660	827.3	390
Dresden Ln (DS)	---	834.0	1,350	830.4	660	829.5	390
Dresden Ln (US)	---	834.0	1,360	831.2	660	829.8	390
Bassett Creek Dr (DS)	---	834.3	1,310	832.2	620	830.7	380
Bassett Creek Dr (US)	---	837.0	1,310	833.0	620	831.2	380
Noble Ln (DS)	29,200	839.0	1,340	837.1	630	836.4	390
Noble Ln (US)	---	840.0	1,320	837.5	620	836.6	380
Regent Ave (DS)	30,800	843.0	1,320	841.2	620	840.2	380
Regent Ave (US)	---	843.7	1,290	841.4	610	840.3	380
Minnaqua Ave	31,650	844.0	1,270	842.0	600	840.9	380
Hwy 100 Control Structure (DS)	---	844.8	1,310	842.8	590	842.0	400
Hwy 100 Control Structure (US)	34,020	850.9	960	847.3	360	844.6	270
Confluence w/North Branch (DS)	34,400	850.9	960	847.3	360	844.7	270
Confluence w/North Branch (US)	---	850.9	---	847.3	---	844.7	---
Westbrook Rd (DS)	37,000	858.9	820	857.8	480	856.9	310
Westbrook Rd (US)	---	860.1	800	858.2	470	857.2	300
Duluth St (DS)	38,400	861.8	800	860.5	470	859.4	310
Duluth St (US)	---	862.5	780	860.7	460	859.6	300
St. Croix Ave (DS)	39,800	864.3	780	863.1	460	862.1	310
St. Croix Ave (US)	---	864.6	750	863.5	450	862.4	300
CP RR (DS) (Timber Trestle)	41,660	870.2	650	869.2	380	868.6	250
CP RR (US) (& 2 Pedestrian Bridges)	---	870.3	640	869.3	370	868.7	250
Douglas Dr (DS)	---	870.8	640	869.7	370	869.0	250
Douglas Dr (US)	---	871.6	630	870.1	370	869.2	250
Florida Ave (DS)	42,820	872.5	630	870.6	370	869.7	250
Florida Ave (US)	---	872.9	630	870.9	370	869.8	250
Hampshire Ave (DS)	43,410	873.2	630	871.5	370	870.6	250
Hampshire Ave (US)	---	873.8	600	871.8	360	870.8	250
Golden Valley Country Club (DS)	44,320	875.8	600	874.2	360	873.5	250
Golden Valley Country Club (US)	---	880.6	570	878.4	340	875.7	220

[1]BCWMC 2021 Update XP-SWMM Model, August 2022. The BCWMC intends to update the XP-SWMM Model on an as-needed basis to reflect significant projects and changes within the watershed. The most current version of the model must be used.

DS – Downstream

US – Upstream

Appendix C: BCWMC Flood Profiles (continued, elevations in NAVD88 datum), revised Aug 2022 [1]

Location (Description)	Creek Distance Above the Mississippi River (feet)	100-Year		10-Year		2-Year	
		Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)
BASSETT CREEK MAIN STEM (continued)							
Pennsylvania Ave (DS)	46,500	881.4	570	879.8	340	879.2	220
Pennsylvania Ave(US)	---	882.5	470	880.5	300	879.7	210
Union Pacific RR (DS)	47,200	883.5	490	882.1	310	881.3	210
Union Pacific RR (US)	---	884.8	370	882.6	230	881.7	170
Winnetka Ave (DS)	48,000	884.8	360	882.8	200	881.9	150
Winnetka Ave (US)	---	885.0	360	883.0	200	882.1	140
Wisconsin Ave (DS)	49,750	885.3	360	883.8	200	883.1	140
Wisconsin Ave (US)	50,100	888.0	290	886.5	170	885.1	120
Golden Valley Rd (DS)	---	888.1	310	886.5	200	885.2	130
Golden Valley Rd (US)	---	888.2	310	886.5	200	885.2	130
Hwy 55 Westbound (DS)	51,250	888.3	330	886.5	210	885.2	150
Hwy 55 Eastbound (US)	---	888.1	420	886.5	250	885.2	150
General Mills Blvd (Boone Ave) (DS)	---	888.1	300	886.7	170	885.5	120
General Mills Blvd (Boone Ave) (US)	---	888.2	230	886.7	110	885.5	80
Hwy 169 (DS)	56,500	888.4	300	887.1	140	886.1	80
Hwy 169 (US)	---	888.5	240	887.1	100	886.1	70
Hwy 55 Ramp (DS)	58,300	888.5	230	887.1	80	886.1	40
Hwy 55 Ramp (US)	---	888.5	230	887.1	80	886.1	30
Hwy 55 Eastbound (DS)	58,500	888.5	230	887.1	80	886.1	30
Hwy 55 Eastbound (US)	---	888.5	230	887.2	80	886.2	40
Hwy 55 Westbound (DS)	---	888.5	230	887.2	80	886.2	40
Hwy 55 Westbound (US)	---	888.5	230	887.2	80	886.2	30
Hwy 169 Ramp to Hwy 55 Westbound (DS)	---	888.6	230	887.2	80	886.2	30
Hwy 169 Ramp to Hwy 55 Westbound (US)	---	888.6	230	887.2	80	886.2	30
Hwy 55 North Frontage Rd (DS)	58,850	888.6	230	887.2	80	886.2	30
Hwy 55 North Frontage Rd (US)	---	888.6	230	887.2	80	886.2	30
Pedestrian Bridge near Cub Foods	---	888.9	230	887.2	80	886.2	30

[1]BCWMC 2021 Update XP-SWMM Model, August 2022. The BCWMC intends to update the XP-SWMM Model on an as-needed basis to reflect significant projects and changes within the watershed. The most current version of the model must be used.

DS – Downstream

US – Upstream

Appendix C: BCWMC Flood Profiles (continued, elevations in NAVD88 datum), revised Aug 2022 [1]

Location (Description)	Creek Distance Above the Mississippi River (feet)	100-Year		10-Year		2-Year	
		Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)
BASSETT CREEK MAIN STEM (continued)							
10th Ave (DS)	---	889.2	230	887.3	120	886.3	60
10th Ave (US)	---	889.3	230	887.3	130	886.3	60
Union Pacific RR Bridge (DS)	63,450	889.3	230	887.3	130	886.3	60
Union Pacific RR Bridge (US)	---	889.4	230	887.3	80	886.8	30
South Shore Dr (DS)	63,800	889.5	230	887.7	80	887.1	30
South Shore Dr (US)	---	889.5	230	887.7	80	887.1	50
Medicine Lake Dam (DS)	63,960	889.5	230	887.7	80	887.1	30
Inundation Areas							
Theodore Wirth Park	---	826.5	---	823.7	---	822.0	---
South Rice Pond	---	834.2	---	832.1	---	830.5	---
North Rice Pond	---	836.6	---	834.5	---	833.6	---
Grimes Avenue Pond	---	836.7	---	834.5	---	833.6	---
Golden Valley Country Club	---	880.6	---	878.4	---	875.7	---
Brookview Golf Course	---	888.1	---	886.5	---	885.2	---
Westwood Lake	---	889.9	---	888.8	---	888.3	---
Medicine Lake	---	890.4	---	889.5	---	888.8	---

[1]BCWMC 2021 Update XP-SWMM Model, August 2022. The BCWMC intends to update the XP-SWMM Model on an as-needed basis to reflect significant projects and changes within the watershed. The most current version of the model must be used.

DS – Downstream

US – Upstream

Appendix C: BCWMC Flood Profiles (continued, elevations in NAVD88 datum), revised Aug 2022 [1]

Location (Description)	Creek Distance Above Confluence with Main Stem (feet)	100-Year		10-Year		2-Year	
		Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)
NORTH BRANCH							
Hwy 100 Control Structure (US)	---	850.9	960	847.3	360	844.6	270
Confluence w/Main Stem (DS)	0	850.9	960	847.3	360	844.7	270
Confluence w/Main Stem (US)	0	850.9	370	847.3	130	844.6	20
29th Ave (DS)	200	850.9	320	847.3	100	844.7	10
29th Ave (US)	---	850.9	1,590	847.3	580	844.6	420
Bassett Creek Park Pond		850.9	1,590	847.3	580	844.6	420
32nd Ave (DS)	2,600	850.9	1,590	847.3	580	844.6	420
32nd Ave (US)	---	852.7	600	851.2	340	850.1	240
Brunswick Ave (DS)	3,000	852.7	600	851.2	340	850.1	240
Brunswick Ave (US)	---	856.8	560	855.3	330	852.8	230
34th Ave Culvert (DS)	4,200	861.6	570	861.2	360	860.8	280
34th Ave Culvert (US)	---	868.0	560	865.1	490	862.9	220
Apartment Dr Crossing (DS)	---	869.0	780	867.4	310	866.9	220
Apartment Dr Crossing (US)	---	870.6	830	869.0	310	867.7	220
Douglas Dr (DS)	4,200	870.6	830	869.0	310	867.7	220
Douglas Dr (US)	---	870.6	440	869.6	240	868.2	180
Edgewood Ave Embankment (DS)	5,600	871.4	440	869.6	240	868.2	180
Edgewood Ave Embankment (US)	---	880.5	390	875.5	220	872.0	190
Georgia Ave (DS)	6,250	880.5	460	875.5	320	872.1	210
Georgia Ave (US)	---	880.8	510	875.5	310	872.8	200
36th & Hampshire Ave (DS)	6,800	880.8	360	875.5	230	872.8	170
36th & Hampshire Ave (US)	6,980	881.5	360	876.0	230	875.0	170
Louisiana Ave (Pipe Outlet) (DS)	8,000	883.3	480	882.9	180	881.6	110
Maryland Ave (Pipe)	8,500	886.5	320	885.4	140	882.7	60
Oregon Ave (Pipe)	9,000	888.3	100	885.4	80	883.3	60
CP RR (Pipe)	8,500	889.9	100	886.6	80	884.3	60
Winnetka Pond Control Structure (Pipe Inlet) (US)	9,500	890.2	170	886.9	80	884.6	60
Service Road (DS)	---	890.2	170	886.9	80	884.6	60
Service Road (US)	10,000	890.5	170	887.1	80	884.7	60
Winnetka Ave (DS)	10,600	890.5	240	887.1	130	884.7	80
Winnetka Ave (US)	---	891.2	310	887.6	140	885.0	80

[1]BCWMC 2021 Update XP-SWMM Model, August 2022. The BCWMC intends to update the XP-SWMM Model on an as-needed basis to reflect significant projects and changes within the watershed. The most current version of the model must be used.

DS – Downstream

US – Upstream

Appendix C: BCWMC Flood Profiles (continued, elevations in NAVD88 datum), revised Aug 2022 [1]

Location (Description)	Creek Distance Above Confluence with Main Stem (feet)	100-Year		10-Year		2-Year	
		Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)
NORTH BRANCH (continued)							
Boone Ave (DS)	13,500	891.2	730	887.6	190	885.6	140
Boone Ave (US)	---	891.2	330	888.2	200	886.9	150
Northwood Lake	---	891.2	330	888.2	200	886.9	150
Hwy 169 (DS)	16,850	891.8	330	888.4	200	887.1	150
Hwy 169 (US)	---	892.9	330	890.7	200	888.9	150
Rockford Rd (DS)	18,350	892.9	330	890.7	200	888.9	150
Rockford Rd (US)	---	897.1	---	894.8	---	893.3	---
Inundation Areas							
Bassett Creek Park Pond	---	850.9	---	847.3	---	844.6	---
Edgewood Ave Pond	---	880.5	---	875.5	---	872.0	---
Winnetka Pond (DS of Winnetka Avenue)	---	890.2	---	886.9	---	884.6	---
Northwood Park	---	891.2	---	887.6	---	885.0	---
Northwood Lake	---	891.2	---	888.2	---	886.9	---

[1] BCWMC 2021 Update XP-SWMM Model, August 2022. The BCWMC intends to update the XP-SWMM Model on an as-needed basis to reflect significant projects and changes within the watershed. The most current version of the model must be used.

DS – Downstream

US – Upstream

Appendix C: BCWMC Flood Profiles (continued, elevations in NAVD88 datum), revised Aug 2022 [1]

Location (Description)	Creek Distance Above Confluence with Main Stem (feet)	100-Year		10-Year		2-Year	
		Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)
SWEENEY LAKE BRANCH							
Confluence w/Main Stem (DS)	0	827.3	1,480	825.3	780	823.7	470
Confluence w/Main Stem (US)	---	827.3	---	825.3	---	823.7	---
Courage Kenny Institute Pedestrian Crossing (DS)	---	827.3	170	825.3	130	823.7	90
Courage Kenny Institute Pedestrian Crossing (US)	---	828.0	190	826.4	140	825.3	100
Courage Kenny Institute Vehicle Crossing & 2 Pedestrian Bridges (DS)	700	828.0	190	826.4	140	825.3	100
Courage Kenny Institute Vehicle Crossing & 2 Pedestrian Bridges (US)	---	830.6	170	828.3	130	826.3	90
Hidden Lakes Pkwy & Courage Kenny Institute Access Rd (DS)	1,330	830.6	170	828.3	130	826.3	90
Hidden Lakes Pkwy & Courage Kenny Institute Access Rd (US)	---	831.8	170	829.1	130	826.8	90
Sweeney Lake Dam (DS)	1,700	831.8	170	829.1	130	826.8	90
Sweeney Lake/Sweeney Lake Dam (US)	---	831.8	170	829.2	130	828.4	90
Union Pacific RR (DS)	6,800	831.8	400	829.2	220	828.4	130
Union Pacific RR (US)	---	836.0	470	831.5	230	829.8	130
Hwy 55 (DS)	---	836.6	830	834.9	500	833.5	320
Hwy 55 (US)	---	838.3	300	836.0	190	834.1	160
CP RR (DS)	9,000	838.3	250	836.0	180	834.1	150
CP RR (US)	---	841.3	250	837.5	220	834.8	170
Breck Pond & Control Structure (US)	9,580	842.4	250	838.3	220	835.3	170
Hwy 100 (DS) (Breck Pond)	10,400	842.4	470	838.3	230	835.3	150
Hwy 100 (US)	---	846.8	490	845.0	220	844.3	140
Turners Crossroad (DS)	10,950	846.8	490	845.0	220	844.3	140
Turners Crossroad (US)	---	857.1	420	851.6	180	848.8	120
Glenwood Pond A	---	857.1	---	851.6	---	848.8	---
CP RR (DS)	---	857.1	180	851.6	50	848.8	30
CP RR (US)	---	857.1	180	851.6	50	848.8	30
Glenwood Pond B [2]	---	857.1	---	851.6	---	848.8	---

[1] BCWMC 2021 Update XP-SWMM Model, August 2022. The BCWMC intends to update the XP-SWMM Model on an as-needed basis to reflect significant projects and changes within the watershed. The most current version of the model must be used.

[2] Normal flows discharge from Ravine Storage Area east through 36" culvert at CP RR to Duck Pond; then north through 48" culvert at Glenwood Avenue to Glenwood Pond B

DS – Downstream

US – Upstream

Appendix C: BCWMC Flood Profiles (continued, elevations in NAVD88 datum), revised Aug 2022 [1]

Location (Description)	Creek Distance Above Confluence with Main Stem (feet)	100-Year		10-Year		2-Year	
		Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)
SWEENEY LAKE BRANCH (continued)							
Glenwood Ave (DS) [2]	---	857.1	120	851.6	70	848.8	60
Glenwood Ave (US) [2]	---	857.1	100	852.0	90	849.4	60
Duck Pond [2]	---	857.1	---	852.0	---	849.4	---
CP RR (DS) [2]	---	857.1	570	852.0	320	849.4	210
CP RR (US) [2]	---	859.3	360	855.9	110	852.9	80
Ravine Storage Area [2 4]	---	859.3	120	855.9	70	852.9	60
Cortlawn Pond [4]	---	873.6	110	873.2	40	871.9	20
East Ring Pond [4]	---	879.4	180	877.3	50	876.1	20
78" RCP Equalizer	18,800	879.4	480	877.3	180	876.1	80
West Ring Pond [4]	---	879.4	---	877.3	---	876.1	---
Ravine Storage Area Overflow							
Glenwood Pond B [3]	---	857.1	---	851.6	---	848.8	---
CP RR (DS) [3]	---	857.1	---	852.0	---	849.4	---
CP RR (US) [3]	---	858.9	---	852.3	---	850.2	---
Storage Area [3]	---	858.9	---	852.3	---	850.2	---
Glenwood Ave (DS) [3]	---	858.9	---	852.3	---	850.2	---
Glenwood Ave (US) [3]	---	859.3	---	855.9	---	852.9	---
Ravine Storage Area [3 4]	---	859.3	---	855.9	---	852.9	---
Inundation Areas							
Sweeney Lake	---	831.8	---	829.2	---	828.4	---
Twin Lake	---	831.8	---	829.2	---	828.4	---
Breck Pond	---	842.4	---	838.3	---	835.3	---
Cortlawn Pond [4]	---	873.6	---	873.2	---	871.9	---
East Ring Pond [4]	---	879.4	---	877.3	---	876.1	---
West Ring Pond [4]	---	879.4	---	877.3	---	876.1	---

[1]BCWMC 2021 Update XP-SWMM Model, August 2022. The BCWMC intends to update the XP-SWMM Model on an as-needed basis to reflect significant projects and changes within the watershed. The most current version of the model must be used.

[2]Normal flows discharge from Ravine Storage Area east through culvert at CP RR to Duck Pond; then north through 48" culvert at Glenwood Avenue to Glenwood Pond B

[3]High flows may discharge from Ravine Storage Area north through culvert at Glenwood Avenue to storage area; then east through 78" culvert at CP RR to Glenwood Pond B

[4]West and East Ring Ponds connected to Cortlawn Pond and the Ravine storage area via a series of storm sewer pipes not listed in this table.

DS – Downstream

US - Upstream

Appendix C: BCWMC Flood Profiles (continued, elevations in NAVD88 datum), revised Aug 2022 [1]

Location (Description)	Creek Distance Above Medicine Lake (feet)	100-Year		10-Year		2-Year	
		Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)
MEDICINE LAKE BRANCH (PLYMOUTH CREEK)							
Medicine Lake/Medicine Lake Dam (US)	---	890.4	760	889.5	330	888.8	170
Pedestrian Crossing (US)	---	890.4	750	889.5	330	888.8	310
Pedestrian Crossing (DS)	---	890.5	---	889.5	---	888.8	---
Pedestrian Crossing (US)	---	890.5	---	889.5	---	888.8	---
Pedestrian Crossing (US)	---	890.5	750	889.5	330	888.9	310
West Medicine Lake Dr (DS)	1,300	890.6	810	889.5	340	889.0	200
West Medicine Lake Dr (US)	---	893.6	810	893.1	340	892.6	200
Fish Barrier (DS)	---	916.2	270	915.6	110	915.5	80
Fish Barrier (US)	---	923.0	270	922.1	110	921.7	80
26th Ave (DS)	7,350	924.9	270	923.5	110	923.1	80
26th Ave (US)	---	925.6	270	923.8	110	923.2	80
28th Ave Dike (DS)	---	930.2	270	928.8	110	928.2	80
28th Ave Dike (US)	---	932.3	290	931.2	110	929.4	80
County Rd 61 (DS)	---	932.3	290	931.2	110	929.4	80
County Rd 61 (US)	---	934.2	270	931.5	130	929.6	80
Xenium Ln (DS)	11,700	934.2	470	931.6	250	930.3	150
Xenium Ln (US)	---	934.6	470	931.7	250	930.4	150
Crowne Plaza DS Crossing (DS)	---	934.6	470	931.7	250	930.4	150
Crowne Plaza DS Crossing (US)	---	935.2	450	931.9	220	930.7	120
Crowne Plaza US Crossing (DS)	---	935.3	450	932.4	220	931.3	120
Crowne Plaza US Crossing (US)	---	936.1	480	933.0	230	931.6	130
I-494 (DS)	13,350	936.5	480	935.3	230	934.6	130
I-494 (US)	---	937.7	460	935.8	210	934.8	120
Annapolis Ln (34th Ave) (DS)	---	942.0	330	941.1	160	940.4	90
Annapolis Ln (34th Ave) (US)	---	943.0	320	941.4	160	940.6	90
Fernbrook Ln (DS)	15,850	947.4	320	946.1	160	945.3	90
Fernbrook Ln (US)	---	947.7	320	946.2	160	945.4	90

[1] BCWMC 2021 Update XP-SWMM Model, August 2022. The BCWMC intends to update the XP-SWMM Model on an as-needed basis to reflect significant projects and changes within the watershed. The most current version of the model must be used.

DS – Downstream

US - Upstream

Appendix C: BCWMC Flood Profiles (continued, elevations in NAVD88 datum), revised Aug 2022 [1]

Location (Description)	Creek Distance Above Medicine Lake (feet)	100-Year		10-Year		2-Year	
		Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)	Flood Elevation (feet)	Flow Rate (cfs)
MEDICINE LAKE BRANCH (PLYMOUTH CREEK) (continued)							
Plymouth Creek Park Pond Outlet Structure (DS)	---	950.2	320	948.9	160	948.0	90
Plymouth Creek Park Pond Outlet Structure (US)	---	954.8	720	952.4	320	951.2	170
37th/38th Ave (DS)	19,750	954.7	720	952.4	320	951.2	170
37th/38th Ave (US)	---	954.9	500	952.4	220	951.2	120
County Rd 9 (Rockford Rd) (DS)	21300	954.9	400	952.4	195	955.4	100
County Rd 9 (Rockford Rd) (US)	---	958.5	400	956.5	180	955.4	90
Vicksburg Ln (DS)	22,150	963.1	400	961.3	170	960.2	90
Vicksburg Ln (US)	---	963.8	300	961.5	130	960.3	70
Pedestrian Crossing/41st Ave Extension (DS)	---	966.0	210	965.0	90	964.6	50
Pedestrian Crossing/41st Ave Extension (US)	---	966.9	160	965.2	80	964.7	50
Yuma Ln (DS)	---	967.7	150	967.0	80	966.6	50
Yuma Ln (US)	---	968.4	100	967.5	80	967.1	60
Dunkirk Ln (US)	25,300	978.3	140	977.4	60	977.3	40
Dunkirk Ln (DS)	---	983.0	140	982.1	60	980.8	50
Pedestrian Crossing (Boardwalk) (DS)	---	983.2	100	982.3	60	981.3	40
Pedestrian Crossing (Boardwalk) (US)	---	983.2	100	982.3	60	981.5	40
Hwy 55 (DS)	29,150	983.2	100	982.3	60	981.6	40
Hwy 55 (US)	---	984.0	---	982.5	---	981.7	---
Inundation Areas							
Xenium Ln	---	934.6	---	931.7	---	930.4	---
Plymouth Creek Park Pond	---	954.8	---	952.4	---	951.2	---
Turtle Lake	---	967.0	---	965.2	---	964.2	---
Rockford Rd	---	968.4	---	967.3	---	966.7	---
Dunkirk Ln	---	983.0	---	982.1	---	980.8	---
Oak Knoll Pond	---	918.7	---	917.5	---	917.0	---
Crane Lake	---	920.2	---	919.2	---	918.7	---

[1]BCWMC 2021 Update XP-SWMM Model, August 2022. The BCWMC intends to update the XP-SWMM Model on an as-needed basis to reflect significant projects and changes within the watershed. The most current version of the model must be used.

DS – Downstream

US - Upstream

Appendix D

Application for Development and Improvement Project Proposals

www.bassettcreekwmo.org

Obtain City staff signature and send application, check for fee, and submittals to:

Bassett Creek Watershed Management Commission
c/o Barr Engineering Co.
Attn: Jim Herbert, P.E.
4300 MarketPointe Drive, Suite 200, Minneapolis, MN 55435-5422

Application for Development and Improvement Project Proposals

Direct questions about this application to Laura Jester, BCWMC Administrator, at 952-270-1990 or laura.jester@keystonewaters.com.

Complete by City Staff

This application is being submitted to the Bassett Creek Watershed Management Commission for review purposes by the City of _____, by _____

_____ _____

City Staff Signature **Date**

The contents of the application are solely the responsibility of the applicant.

Complete by Applicant

General Information:

_____

(Name of development or description of project)

_____

(City)

_____

(Location of work—reference major streets and highways, and attach map)

Name of Applicant (owner): _____

Telephone_____ E-mail _____

Address _____

City, State, Zip _____

Name of Agent (project contact):_____

Telephone_____ E-mail _____

Address _____

City, State, Zip _____

Submittals

Requirements for each submittal are provided in the document *Requirements for Improvements and Development Proposals*. The required fee is shown on the Commission's Fee Schedule attached to this application.

Enclosed is the following required information for review:

☐ Project review fee (see Attachment A; fee schedule)

☐ Check mailed to BCWMC or ☐ Electronic money transfer

☐ Project plans: one full size (paper), one 11x17 inch (paper), electronic (pdf)

☐ Stormwater Management Plan and computations

☐ Erosion and sediment control plan

☐ MIDS calculator file, P8 model, WINSLAMM model, or BCWMC approved equal; or documentation of approved city review of MIDS performance goal requirements

☐ BMP checklist (Attachment B)

☐ Linear project checklist (linear project creating 5 or more acres of new/fully reconstructed impervious surface) (Attachment C)

☐ Electronic copy of the final approved submittal

☐ Other: _____

☐ Variance request

Project Information:

Nature of work: _____

_____

_____

_____

Plat/parcel area: _____ Area to be disturbed (graded): _____

Existing impervious area: _____ Proposed impervious area: _____

Net new impervious area: _____ Fully reconstructed impervious area: _____

Total of net new and fully reconstructed impervious area: _____

Area to be reclaimed and/or mill and overlay: _____

Land use existing: _____

(Industrial, commercial, multiple residential, single residential, utility, public)

Land use proposed: _____

(Industrial, commercial, multiple residential, single residential, utility, public)

Number and type of units: _____

I understand and agree that I must pay all fees associated with this application, that I am responsible for reimbursing the Commission for all actual costs it incurs for the review in excess of $5,000, and that any additional applications I may submit will not be deemed complete and no review will occur until the Commission has been fully reimbursed for any outstanding costs.

_____ _____

Authorized Signature (Applicant) **Date**

Attachment A: Fee Schedule (Effective August 1, 2022)
Bassett Creek Watershed Management Commission Project Reviews

Project Review Fees (check appropriate boxes) [1, 7]	
☑ **Base Fees**	
Single Family Lot (No add-on fees required) [7]	$500
Projects Requiring Only Erosion and Sediment Control Review [7]	$2,000
Municipal Projects [2, 7]	$1,500
All Other Projects [7]	$2,000
☑ **Add-On Fees[3]**	
1. Projects requiring Rate Control or Treatment to MIDS Performance Goal	$2,000
2. Projects involving work within or below the 100-year floodplain (Table 2-9, Watershed Management Plan) - select highest of following add-on fees (a or b)	
a. Work involving filling and compensating storage within or below the 100-year floodplain (identified in Table 2-9)	$1,000
b. Work along the Bassett Creek trunk system or inundation areas involving review of, or modifying the XP-SWMM model.	$2,000
3. Work involving creek crossings (bridges, culverts, etc.)	$1,000
4. Projects involving review of alternative BMPs [4]	$1,000
5. Project involving variance request	$1,000
☑ **Wetland Fees [5]**	
Wetland delineation review	Varies
Wetland replacement plan review	Varies
Monitoring and reporting	Varies
Wetland replacement escrow	Varies
Total Project Review Fees [6, 7]	$_____

1 State agencies are exempt from review fees. Other public agencies are required to pay review fees and add-on fees.

2 Including Minneapolis Park & Recreation Board projects

3 Required in addition to base fee (except for single family lots).

4 BMPs not included in *Minnesota Stormwater Manual*.

5 Wetland fees will be billed at actual cost for projects where BCWMC acts as the LGU for the Wetland Conservation Act or when a member city requests assistance from the BCWMC for wetland-related review tasks (BCWMC is the LGU for the cities of Medicine Lake, Robbinsdale and St. Louis Park).

6 Pay review fee by check payable to Bassett Creek Watershed Management Commission and include with application materials sent to Barr Engineering; or submit electronic payment using instructions found at www.bassettcreekwmo.org/developer/fee-schedule.

7 If the actual cost to conduct a review reaches $5,000, the applicant shall be required to reimburse the Commission for all costs it incurs in excess of $5,000, in addition to base and add on fees. The Commission shall bill the applicant for the additional costs. If an applicant fails to fully reimburse the Commission for the additional costs, any future requests for a review from the applicant shall be deemed incomplete, and the Commission will not conduct a review, until all outstanding amounts have been paid.

Attachment B: Proposed Best Management Practices (BMPs) to be Implemented on Project for Water Quality Protection

Description of BMP	Was BMP Used?	Location Used or Basis for No Use
STORMWATER INFILTRATION/VOLUME REDUCTION BMPs		
1. Reduce area of impervious surface (pavement, roofs, etc.)		
2. Infiltration basin/rain garden (no underdrain)		
3. Underground infiltration (no underdrain)		
4. Infiltration trench/tree trench (no underdrain)		
5. Tree trench/tree box (no underdrain)		
6. Permeable pavement (no underdrain)		
7. Dry swale/grass swale (no underdrain)		
8. Stormwater reuse		
STORMWATER FILTRATION BMPs		
9. Bioretention basin/rain garden (w/underdrain)		
10. Sand filter		
11. Iron enhanced sand filter (Minnesota Filter)		
12. Permeable pavement (w/underdrain)		
13. Tree trench/tree box (w/underdrain)		
14. Dry swale/grass swale (w/underdrain)		
15. Green roof		
WET SEDIMENTATION BASINS/REGIONAL PONDS BMPs		
16. Stormwater pond		
17. Stormwater wetland		
FLOATABLE/OIL REMOVAL BMPs		
18. Floatable skimmer		
19. Parking lot oil/grease separators		
SEDIMENT CONTROL BMPs		
20. Pretreatment (hydrodynamic devices, forebays, etc.)		
21. Riprap or other storm drain outlet protection		
22. Storm drain inlet protection		
23. Slope stabilization and erosion control measures		
24. Vegetated swale/bioswale		
NONSTRUCTURAL BMPs		
25. Street sweeping		
26. Fertilizer manager		
27. Other (describe):		

Attachment C: Linear Project Checklist

Linear project definition: Construction or reconstruction of a road, rail, trail, or other transportation route, or the construction, repair, or reconstruction of a utility that is not a component of a larger development or redevelopment project. Examples include road and road widening projects, trails, ditch work, road or rail replacement, and utility installation.

Submittals:

☐ Provide map of project area including proposed BMP location(s), drainage areas to the proposed BMPs, proposed impervious areas, new/reconstructed areas, mill/overlay areas, etc.

☐ Provide documentation of project restrictions for best management practice(s) (i.e. right-of-way boundaries, soil borings, etc.)

Restrictions in project area (check any and all that apply to the project):

☐ Constraints due to lack of available ROW, off site drainage, and/or rate control requirements

☐ Project located within a Drinking Water Supply Management Area (DWSMA), wellhead protection area, or within 200' of a drinking well

☐ Shallow groundwater

☐ Shallow depth to bedrock

☐ Predominately Hydrologic Soil Group D (clay) soils

☐ Very high infiltrating soils (>8.3 inches / hour)

☐ Presence of karst

☐ Contaminated soils and/or groundwater or hotspot runoff

☐ Potential for adverse hydrologic impacts from infiltration practices (e.g., perched wetland)

☐ Utility conflicts

☐ Other _____

Describe the project restrictions and explain what efforts were made to avoid and/or address these restrictions as part of project planning and design (see the BCWMC Flexible Treatment Options Flow Chart for guidance on the types of actions expected for different types of restrictions): _____

_____

_____

_____

_____

_____

_____

_____

Best management practice(s) and location(s) evaluated: _____

_____

_____

Best management practice(s) proposed and reason for selection: _____

_____

Impervious and pervious area treated by best management practice(s): _____

_____

Volume Retained (as inches of runoff from new/fully reconstructed impervious): _____

Total Phosphorus Removed Annually (pounds/year): _____

Total Suspended Solids Removed Annually (pounds/year): _____