Wisconsin Pollutant Discharge Elimination System Permit for Municipal Separate Storm Sewer System, Permit No. WI- S049972-4: Fact Sheet – June 2025

Purpose

The City of Cedarburg is currently covered under Wisconsin Pollutant Discharge Elimination System (WPDES) Permit No. WI- S049972-3. The WPDES permit expired on June 11, 2018. The Wisconsin Department of Natural Resources (Department) is proposing to reissue WPDES Permit No. WI-S049972-4 to continue the coverage of storm water discharges from this municipally owned or operated municipal separate storm sewer system (MS4) permittee. The proposed permit requires the MS4 permittee to develop, implement, and maintain storm water management programs to reduce the discharge of pollutants from the MS4 to waters of the state.

This fact sheet summarizes the Department's process and rationale for developing and issuing the MS4 permit.

The Department's Authority to Issue WPDES Permits

This permit is issued under the statutory authority granted to the Department pursuant s. 283.33, Wis. Stats. (Storm water discharge permits) and implements applicable federal and state law relating to MS4s. The specific federal requirements for MS4 permits are found in 33 U.S.C. § 1342 (p)(3)(b) and 40 CFR § 122.26. The specific state requirements for MS4 permits are found in subch. I of ch. NR 216, Wis. Adm. Code.

The Department's Regulation of Storm Water from the MS4

In Wisconsin, WPDES permits are issued by the Department with federal oversight from the United States Environmental Protection Agency (USEPA). The Department is responsible for the issuance, reissuance, modification, and enforcement of all WPDES permits issued for discharges into the waters of the state, except discharges occurring in Indian Country which are regulated directly by the USEPA. No person may legally discharge to waters of the state without a WPDES permit issued under this authority.

In 1987, Congress amended the Clean Water Act (CWA), authorizing a national program of comprehensive storm water pollution control for MS4s, certain industries, and construction sites. In 1993, ch. 147, Wis. Stats., (now ch. 283, Wis. Stats.) was amended to include storm water as a "point source" discharge and to require that the Department promulgate administrative rules for permitting the discharge of storm water. As a result, the Department created ch. NR 216, Wis. Adm. Code, for permitting storm water discharges from certain municipalities that own or operate MS4s, storm water discharges associated with industrial activity, and storm water discharges associated with land disturbing construction activity.

General Approach to Permit Development

In November 2016, the USEPA promulgated the MS4 General Permit Remand Rule (40 CFR Part 122). The USEPA amended its regulations governing how small MS4s obtain coverage under NPDES general permits. In addition to establishing two alternative approaches to obtaining permit coverage, the rule clarifies that the permitting authority must establish the necessary "clear, specific, and measurable goals" for the MS4 to "reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act." Referred to as the "MS4 permit standard," both approaches ensure that the

public participation requirements of the Clean Water Act (CWA) are met. The Department is applying the Comprehensive approach to issue this permit. Under the Comprehensive approach, all requirements are contained within the permit.

Permit conditions were developed to meet the MS4 permit standard: reduce pollutants to the maximum extent practicable (MEP), protect local water quality, and meet CWA Standards. This permit requires continued implementation of the six minimum control measure programs, development of a storm water management plan to make progress towards the reduction goals outlined in the Milwaukee River TMDL, and completion of TMDL Benchmarks during the permit term which provide improvements in water quality. Permittees satisfy the MS4 permit standard through successful implementation of the storm water management programs and compliance with the WPDES permit.

This permit incorporates USEPA's clarification on permit requirements, specifically to address 40 CFR § 122.34 (a), that "Terms and conditions . . . must be expressed in clear, specific, and measurable terms." To accomplish this, permit provisions that included caveat terms such as "if feasible" or "as necessary" are revised to provide more clarity on when a specific action is required.

Additionally, in December 2015, the USEPA promulgated the NPDES Electronic Reporting Rule (40 CFR Parts 9, 122, 123, 124, 127, 403, 501, and 503). This regulation requires the electronic reporting and sharing of NPDES program information. The USEPA identifies specific NPDES information, or data elements, that NPDES permitting authorities, such as the Department, are to electronically collect, manage, and share with the USEPA. The Department's electronic reporting system was built to collect these data elements. The Permittee can locate the eReporting system here: https://dnr.wi.gov/topic/stormwater/municipal/eReporting.html.

The Department considered annual reports, storm water management plan documents, and responses to the request for information provided by the Permittee when developing the permit conditions. The Department also considered findings and discussions which occurred during the City's MS4 Audit conducted in December 2022. An initial meeting was held with the Permittee to discuss permit conditions. Additional correspondences with the Permittee subsequently occurred to further discuss requirements. The following document provides an explanation for major permit requirements and summarizes changes from the previous permit.

Applicability

This permit applies to the MS4 listed on the cover page of the permit. No new MS4s are covered by the reissued permit.

Overview and Significant Changes from the Previous Version of the Permit

The proposed permit includes the conditions required by s. NR 216.07, Wis. Adm. Code, which consists of the following six categories, or minimum control measures:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Pollutant Control
- Post-Construction Storm Water Management
- Pollution Prevention

This proposed permit follows federal and state requirements and provides flexibility for the Permittee to develop, implement, maintain, and evaluate its MS4 programs to help determine appropriate methods for meeting permit requirements.

This proposed permit requires the Permittee to maintain its programs developed and implemented under the previous version of the City of Cedarburg Permit, comply with measurable goals, and summarize its efforts toward meeting the permit requirements in an annual report. In addition, this proposed permit continues to require compliance with the developed urban area performance standard of s. NR 151.13, Wis. Adm. Code. A summary of the most significant changes from the previous version of the City of Cedarburg Permit and additional clarity is provided below.

Permit Structure
The Permit is broken down into seven sections. Section I outlines the applicability and general storm water permit requirements. Sections II and III include the storm water program requirements and Total Maximum Daily Load (TMDL) requirements. Section IV contains a schedule of when specific permit requirements must be completed. Section V and VI are standard conditions and definitions, respectively. Lastly, Section VII contains the reduction goals for Total Suspended Solids (TSS) and Total Phosphorus (TP) from the Milwaukee River TMDL.

I. Applicability
The proposed permit does not add additional conditions to this section. However, some conditions warranted clarification. Clarification of these conditions are described below.

I.A. Permitted Area
The permit covers all areas within the jurisdiction of the Permittee. If the Permittee acquires new areas (e.g., annexation) during the term of the permit, these new areas are now considered the jurisdiction of the City and the permit conditions apply to these areas.

I.B. Authorized Discharges
The Permittee is required to implement best management practices in its permitted area to reduce its discharge of storm water pollution to waters of the state. Through implementing these best management practices, the Permittee is authorized to discharge storm water point source discharges from its MS4 to waters of the state.

Permit section II.C.1 requires the Permittee to have a municipal ordinance or other regulatory mechanism that prohibits illicit discharge, spilling or dumping of non-storm water substances or material into the Permittee's MS4 or waters of the state. The municipal ordinance or other regulatory mechanism must also identify non-stormwater discharges or flows that are not considered illicit discharges (e.g., discharges from potable water sources, foundation drains, and air conditioning condensation that are not significant sources of pollutants to waters of the state).

Non-stormwater discharges to the Permittee's MS4 which are not considered illicit (e.g., discharges from potable water sources, foundation drains, and air conditioning condensation that are not significant sources of pollutants to waters of the state) and storm water discharges from regulated

WPDES permittees (e.g., storm water associated with an industrial storm water permittee) are authorized to be discharged to the Permittee's MS4. [1]

Though these discharges are authorized, they may not be illicit. If the Permittee discovers an illicit discharge originating from an authorized source (e.g., from a regulated WPDES permittee), the Permittee is expected to implement its Illicit Discharge Detection and Elimination program according to Permit Section II.C.

I.F. Outstanding and Exceptional Resource Waters
If the Permittee is discharging to an outstanding or exceptional water resource, it must comply with the requirements identified under this section. However, at the time of the proposed permit reissuance, the Permittee is not discharging to an OWR or ERW. Consequently, the conditions within this section do not currently apply to the Permittee. However, in the event a water becomes designated as an ORW or ERW, the Permittee shall comply with these conditions.

I.J. Impaired Waters
As with the previous permit, the Permittee is required to determine whether any part of its MS4 discharges to a listed impaired waterbody and where so, include a written section in its storm water management program that discusses the management practices and control measures it will implement as part of its program to reduce, with the goal of eliminating, the discharge of each pollutant of concern that contributes to the impairment of the waterbody.

As communities expand, alteration of the land by development can increase the discharge of pollutants such as oil and grease, heavy metals, and nutrients. The Permittee must meet design criteria for new and redevelopment and implement pollution prevention practices as described in their stormwater management plan to not establish a new or increased MS4 discharge of a pollutant of concern to an impaired waterbody.

II. Storm Water Management Program
This permit requires development of written storm water management program (SWMP) documents describing how the Permittee will comply with the permit's requirements for each of the six minimum control measures, consistent with s. NR 216.07, Wis. Adm. Code. This is not a new requirement, but rather a clarification because the previous permit did not require written program documents. As explained in the USEPA Rule Remand, "the written SWMP provides [the Department] something concrete to review to understand how the MS4 will comply with permit requirements and implement its storm water management program."[2] This also provides an opportunity for the Department to assess compliance with the permit requirements. The Permittee is expected to develop written documents if they do not already exist and submit them to the Department. Existing and new SWMP documents describing the Permittee's approach to each minimum control measure must be submitted to the Department within 24 months (by June 1, 2027). As written program procedures are required for each of the six stormwater management programs, written program procedures will not be discussed within

[1] The Department's statewide website can assist in identifying regulated WPDES permittees that may discharge into the Permittee's MS4: https://uadnrmaps.wi.gov/H5/?viewer=SWPV. The Permittee should also identify all WPDES permittees in its jurisdiction as required by Permit Section II.H.

[2] 81 Federal Register 89339, December 9, 2016.

each of the six stormwater program sections described later within this factsheet. The Permittee should reference this section for assistance or contact its local stormwater specialist.

Consistent with the previous permit, this permit also requires the Permittee to establish measurable goals for each of its six storm water management programs. As the Permittee has six programs, the Permittee will have at least six measurable goals – one for each of its programs. Though this is also not a new requirement, the reissued permit contains specific measurable goal conditions. By the dates listed in the permit, the Permittee is required to submit a document which identifies its program's measurable goal and describes how its goal was identified. The document will provide the anticipated action(s) the Permittee will take to work towards its goal and anticipated metrics that will be used to evaluate the success of its actions taken towards its goal. Though establishing measurable goals is not a new condition, the requirement to provide the measurable goal and describe how it was identified with anticipated action(s) and metrics is new.

To provide additional clarity, an explanation of measurable goals, its intent, potential mechanisms to identify and measure success, and example measurable goals is provided below. As measurable goals are required for each of the six stormwater management programs, measurable goals will not be discussed within each of the six stormwater program sections described later within this factsheet. The Permittee should reference this section for assistance or contact its local stormwater specialist.

Measurable Goals
The MS4 permit lists specific conditions the Permittee must implement to better the quality of its stormwater discharge. Implementation of these specific conditions are best management practices known to reduce and/or eliminate stormwater pollutants, regardless of the municipality. For example, to reduce the discharge of sediment and construction materials from construction sites, the permit requires the Permittee to inspect construction sites and take action to address noncompliance. However, as each MS4 permittee is unique (i.e., municipalities face different stormwater challenges, have different resources and needs, and implement stormwater activities differently), the MS4 permit does not include specific conditions each MS4 should implement to reduce its discharge of stormwater pollutants to the maximum extent practicable (MEP – part of the MS4 permit standard). These actions must be determined by the individual Permittee.

In summary, measurable goals should drive action which encourages enhancement of the Permittee's own program and consequently, further reduce its stormwater pollutants to the MEP. Measurable goals may be simple or complex, based on a known or perceived need or want, or may expand upon required permit conditions. However, measurable goals should go beyond the specific conditions identified in the permit. Example measurable goals, how they can be identified, actions that could be taken, and how they can be measured are provided below.

Lastly, it is important for the goal to be measurable so the Permittee can determine if its actions taken to reach its goal was successful. If the goal was reached, the Permittee may determine its actions were successful and continue to implement similar actions in the future. However, if the goal was not reached, the Permittee may determine alternative actions are necessary. To make a goal measurable, the Permittee may set a quantitative goal (i.e., number based) or qualitative goal (i.e., narrative based). The examples below provide both quantitative and qualitative measurable goals for reference.

Example of Measurable Goals, Methods to Identify, Actions to Take, and Metrics to Measure Success

Example 1: If a Permittee identifies noncompliance issues at construction sites are not resolved in a timely manner, it may identify this as an area for improvement and set a measurable goal that 50% or more noncompliance sites return to compliance within 24 hours. To achieve this goal, the Permittee may choose to implement a variety of actions such as providing education to construction applicants during plan review, utilizing more enforcement, conducting more inspections, etc. To measure the success of this ***quantitative*** measurable goal, the Permittee should count the number of noncompliance sites that returned to compliance within 24 hours after implementing its chosen actions. If 50% or more noncompliant sites returned to compliance within 24 hours, the Permittee may determine its actions were suitable. If less than 50% of noncompliant sites returned to compliance within 24 hours, the Permittee may determine alternative actions are necessary to achieve its goal.

Example 2: If a Permittee collecting residential leaves observes potted plants and other vegetation are placed within residential leaf piles, it may identify this as an area for improvement and set a measurable goal of reducing the amount of potted plants and other vegetation observed within residential leaf piles. To achieve this goal, the Permittee may choose to implement a variety of actions such as providing passive education to residents via its website/newsletter/social media/door hangers, providing active education via in-person education events, sending notice of violation letters to offending residents, etc. To measure the success of this ***qualitative*** measurable goal, the Permittee could ask leaf collection staff if they observe less potted plants and other vegetation, assign someone to assess potential improvement by observing the residential leaf piles, or count the amount of potted plants/other vegetation pre- and post- actions. If the Permittee assessment indicates its actions successfully met its goal, the Permittee may determine its actions were suitable. If the Permittee assessment indicates its actions did not successfully meet its goal, the Permittee may determine alternative actions are necessary to achieve its goal.

Example 3: A Permittee recently adopted a downtown redevelopment plan which has a large focus on aesthetics. To encourage downtown visitors to keep the area clean, the Permittee plans to install educational signage and/or install waste containers. As the Permittee already intends to implement these activities, the Permittee may choose to utilize these actions for a program measurable goal.

> The Permittee may set a ***quantitative*** goal of installing a certain amount of signage or waste containers and, to measure its success, count the number of signs or waste containers installed. If the Permittee met its goal, they may choose to establish another measurable goal such as this in the future. If the Permittee did not achieve its goal, it should determine what additional steps are needed in the future to achieve the goal.
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> The Permittee may also set a ***qualitative*** goal of reducing the amount of litter observed in the downtown area. To achieve this goal, the Permittee may choose to install educational signage or waste containers. To measure its success, the Permittee could observe litter pre- and post-installation. If the Permittee assessment indicates its actions successfully met its goal, the Permittee may determine its actions were suitable. If the Permittee assessment indicates its actions did not successfully meet its goal, the Permittee may determine alternative actions are necessary to achieve its goal.

Example 4: If a Permittee cannot identify a measurable goal based on a known or perceived need (Example 1 and 2) or want (Example 3), the Permittee may choose to set a measurable goal based upon

existing permit conditions. For example, the permit requires implementation of specific conditions because they are known best management practices (e.g., screening outfalls is a known best management practice to identify potential illicit discharges). Using outfall screenings as an example, the Permittee may choose to increase its outfall screening frequency or screen additional outfalls so it may identify potential illicit discharges that may otherwise been missed.

II. A. Public Education and Outreach

The previous permit required the City of Cedarburg to continue existing public and staff education and outreach programs to increase awareness of storm water impacts on waters of the state to encourage changing public behavior to reduce such impacts. The Permittee was allowed to incorporate cooperative efforts with other entities not regulated by the permit, such as Southeastern Wisconsin Watersheds Trust's Respect Our Waters campaign. The Permittee was to prioritize education topics identified in the permit each year, address all education topics at least once during the permit term with a minimum of 3 topics each year, identify target audiences, establish measurable goals, and develop and implement a mechanism for evaluating effectiveness.

Like the previous permit, the reissued permit also requires educating on each topic identified in the permit at least once during the permit term, with a minimum of 3 topics addressed each year, and continues to allow cooperative efforts with other entities not regulated by this permit (e.g., Southeastern Wisconsin Watersheds Trust). However, unlike the previous permit, this permit requires using at least two Active/Interactive Mechanisms each year (see Table 2 within the permit for example Active/Interactive Mechanisms).

Also similar to the previous permit, the Permittee should continue to identify the targeted audience, however, the Permittee is now required to identify the delivery mechanism, targeted pollutant, and the entity responsible for implementation. These additional requirements are consistent with other MS4 permits across the state.

Though not a new requirement as previously described, the reissued permit requires the Permittee to develop and submit a document identifying its measurable goal and describing how the goal was identified, the anticipated action(s) the Permittee will take to work towards its goal, and metrics that will be used to evaluate the success of its actions taken to work towards its goal. Though establishing measurable goals is not a new condition, the requirement to provide the measurable goal information is new.

Lastly, the permit requires the Permittee to submit a summary of the actions taken to achieve its measurable goal, evaluation results, and propose measurable goals for the next permit term. The Department will consider the proposed measurable goals and other information submitted with the reapplication package to develop the next permit.[3]

II. B. Public Involvement and Participation

The previous permit required the Permittee to implement a program to notify the public of activities required by the permit and to encourage input from the public regarding these activities and include measurable goals. The new permit contains a similar requirement but identifies more specific activities for public input and clarifies expectations for measurable goals. The Permittee must allow for public comment and consider comments on annual reports, storm water management plan revisions, adoption

[3] Consistent with ss. NR 216.01 and 216.07, Wis. Adm. Code.

of storm water related ordinances, and development of benchmarks for TMDL pollutant reduction. Lastly, to satisfy the eReporting Rule, the Permittee needs to track and report the delivery mechanism and target participants for each activity.

II. C. Illicit Discharge Detection and Elimination (IDDE)

Permittees have been implementing Illicit Discharge Detection and Elimination (IDDE) programs since first obtaining MS4 permits. The reissued permit builds upon the existing programs and provides more clarity to measurable goals and specific response actions, adding greater emphasis to the elimination component of the IDDE program.

Both the existing and reissued permit require MS4s to have an ordinance or regulatory provision which prohibits non-storm water discharges into the MS4 system or waters of the state. The ordinance, coupled with inspection and enforcement authority, are necessary for the MS4 to prevent illicit discharges or improper disposal. As these are existing requirements, the Department expects MS4s to already be enforcing an ordinance or regulatory mechanism.

Dry Weather Outfall Screening

Dry weather field screening remains an effective way to identify illicit discharges or which storm water pipes may have illicit connections. Dry weather screenings should occur when flow is not present. Typically, this is 48-72 hours after a rain event. However, based on the precipitation event and size of drainage area, this amount of time may change.

Dry Weather Outfall Screening: Visual Observations and Field Analysis

Outfall screening consists of visual observation, field analysis, documentation, and potentially lab analysis. The Permittee should have an inspection form or similar document to record the results of visual observations and field analysis results. If flowing water is observed at the outfall, a field analysis should be conducted to determine the source of the flow and the appropriate parameter action levels followed. If general observations and screening indicate the presence of illicit discharge, and the source cannot be readily identified, the Permittee should collect a water sample for lab analysis. The water sample should then be analyzed for parameters to aid in determining the source of illicit discharge. Documentation of field screening activities should be kept for at least 5 years and a summary of the results should be submitted with the annual report.

As with the previous permit, the Permittee needs to identify pollutant parameter action levels used during outfall screening. Based upon the sampling result for a specific pollutant, the Permittee may need to take additional action. For example, the concentration of ammonia detected at the outfall may require the Permittee to collect a sample for lab analysis and complete a sewer shed investigation to find the source. Other times, only follow-up monitoring is needed. The Permittee has the flexibility to determine the action levels and corresponding response steps provided the pollutants and specified parameter action levels are identified in the written IDDE field screening procedures or similar document. The Department has developed guidance to assist with developing parameter action levels, and the Permittee is encouraged to adapt their IDDE programs based upon the results of screening and characteristics of the sewer sheds. The IDDE field screening procedures or similar document shall also explain when a certified lab sample needs to be collected, as these are more accurate and hold greater weight during enforcement.

Dry Weather Outfall Screening: Location and Frequency

As with the previous permit, this permit calls for screening MS4 outfalls. However, screening location and frequency has changed to be consistent with other MS4 Permits across the state. Below is a table comparing the previous and proposed permit outfall screening requirements.

Previous Permit (WI-S049972-3)	**Proposed Permit (WI-S049972-4)**
Annual screening of at least one fifth of the major outfalls.	20% of all major outfalls each year.
At a frequency determined by the Permittee, additional screening of priority outfalls.	20% of all priority outfalls each year.
Annual screening of all major outfalls which showed evidence or illicit discharges under the preceding permit term.	Rescreen any outfall which exhibited signs of an illicit discharge during the previous year.

Change in Priority Outfall Requirements:

Like the previous permit, the Permittee is responsible for determining which of its MS4 outfalls are considered priority. Described in the Department's IDDE Guidance[4], outfalls should be prioritized based on illicit discharge potential in the contributing drainage area rather than solely on pipe or drainage area size. However, the Permittee may identify priority outfalls based on other factors. For example, if a Permittee has not conducted routine outfall screenings in a specific drainage area, they may choose to identify an outfall within that area as priority.

Unlike the previous permit, this permit requires screening 20% of its priority outfalls each year so that by the end of the permit term, each priority outfall has been screened at least once. As priority outfalls may not have been re-evaluated for some time, the Department highly encourages the Permittee to re-evaluate its outfalls to determine ones that should be priority. However, as re-evaluating priority outfalls may occur during the permit term, the Permittee should screen at least 20% of its previously identified priority outfalls each year until new priority outfalls have been identified.

Change in Re-Screening Outfall Requirements:

Based on visual and/or field analysis results, any MS4 outfall which exhibits signs of an illicit discharge should be re-screened the following year, regardless of the initial year's investigation results. In other words, even if the Permittee located and eliminated the illicit discharge source, the outfall should be re-screened the following year to confirm the illicit discharge was successfully eliminated and/or has not reoccurred. If the re-screening results no longer exhibit signs of an illicit discharge, the Permittee is not required to re-screen that outfall the following year. However, if the re-screening results exhibit signs of an illicit discharge, the Permittee is required to begin its investigation, and re-screen that outfall the following year.

MS4 Outfall Map and Priority Rationale:

Unlike the previous permit, this permit requires the Permittee include within its written program procedure an MS4 Outfall Map and a list of its priority outfalls with the rationale used to determine the priority status. While the Permittee may provide this information as they see fit, one consideration is to provide this information on a table that corresponds with the MS4 Outfall Map. Including additional information, such as outfall screening schedule, may also be beneficial to the Permittee. For example, a table may consist of the following information:

[4] The Department's IDDE Guidance can be accessed here: https://dnr.wisconsin.gov/topic/Stormwater/publications.html

MS4 Outfall Number/ID	Major, Minor, Priority *If Priority, Determination Used	Screening Year Scheduled
1	Major	2025
2	Major	2026
3	Priority: Historic illicit discharge complaints.	2025
4	Priority: Residential but contains vehicle repair shops.	2025
5	Priority: Inquiry - drainage area not been part of past routine screenings	2026

Enforcement Response

Section II.C.2.c) of the new permit requires development of an enforcement response plan that documents how the MS4 will enforce its illicit discharge ordinance once an illicit contributor is identified. The enforcement response plan is intended to provide clarity and consistency in enforcement actions the Permittee will complete once an illicit discharge is identified. The enforcement response to all identified illicit discharges may not be the same (e.g., consider illegal dumping verses cross connections), so the Permittee may identify specific actions for all illicit discharges or identify actions for certain types of discharges. The enforcement response plan must also identify the person responsible for responding to illicit discharge reports.

Investigation and Elimination Procedures

Where enforcement response procedures outline how the ordinance is enforced once an illicit contributor is identified, the investigation and elimination written procedure should outline actions the Permittee will take when illicit discharges are suspected or identified through screening, notification, complaints, or other sources. The Permittee should have procedures for immediately investigating portions of the MS4 suspected to contain illicit discharge based upon field screening, complaints, visual observation or other relevant information. These procedures shall identify the person responsible, the response time, investigation techniques to employ, and equipment necessary. The Permittee must also have a plan for responding to spills which discharge into or out of the storm sewer, including prevention and containment. For public sources, this can mean beginning to take steps to stop the illicit discharge. For private sources, this can mean beginning to use the enforcement response procedures (written notice, notice of noncompliance letter (NON), etc.).

As with the previous permit, this permit requires the Permittee to eliminate identified illicit discharges or connections as soon as possible. However, where the previous permit required the Permittee to submit inspection reports to the Department for outfalls with known or suspected illicit discharges within 30 days of outfall inspection, this permit requires eliminating the identified illicit discharge or connection within 30 days. If the Permittee determines it will take longer than 30 days to eliminate the illicit discharge or connection due to technical or logistical issues or other reasonable justification, the Permittee shall notify the Department within 45 days of discovery of the illicit discharge. The notification shall include the Permittee's plan to eliminate the illicit discharge in an expeditious manner. This condition has been added because the Department understands there may be situations where eliminating the illicit discharge or connection will take time. For example, if a force main is leaking into a storm sewer under a major roadway, significant resources and time may be needed to plan and complete the repair.

The written investigation and elimination written procedure should also include specific notification procedures. Though these notification procedures are not new to the permit, the requirement to describe how the Permittee implements its notification procedures within the written program is new. The Permittee shall include in its written program procedure a requirement to immediately notify the Department within 24 hours of identifying a spill or release of hazardous substance into or from its MS4. Advance notification of dye testing is also required because dyes are often confused with illicit dumping. Finally, the Permittee should contact an adjacent MS4 if it identifies an illicit discharge which flows into an adjacent MS4 or identifies an illicit discharge originating from an adjacent MS4.

II. D. Construction Site Pollutant Control

This permit continues the requirement to implement a construction site pollutant control program to reduce the discharge of sediment from construction sites and have established measurable goals. The requirements are similar to the last permit and the changes are intended to add clarity to the permit. The Permittee is expected to have a construction site ordinance in place which requires construction plans which meet the performance standards in ch. NR 151, Wis. Adm Code, allows for inspection and enforcement to ensure compliance with performance standards, and requires site operators to properly manage waste materials on construction sites.

The requirement for the MS4 to notify landowners of other potentially required permits has been removed. This requirement has been removed because it is the landowner's responsibility to obtain all applicable permits, and the municipality does not always know what the latest DNR wetland and waterway permitting requirements that could apply to a site are.

New requirements in this permit include written program procedures, specific construction site inspection frequencies, and clarified expectations for a program measurable goal. The Permittee also needs to include in the construction program documents how they will respond to information submitted from the public, including complaints.

Plan Review and Permitting

The Permittee's plan review procedures should identify the steps construction site operators will follow to obtain a construction permit and the procedures the plan review staff (MS4 Permittee) will follow to review and issue construction site permits. The procedures should describe how the Permittee will consider water quality impacts through its plan review process as required in s. NR 216.07 (4) (b), Wis. Adm. Code. The considerations can be in the form of a checklist or specific Best Management Practices (BMPs) for certain site conditions but, must describe a consistent process or evaluation that is applied to all sites within the Permittee's jurisdiction. For example, the Permittee may require certain BMPs on high slope or large sites, or additional barriers if the site is adjacent to wetlands or other waterbodies. The Permittee may also require identification of portable toilets on constructions sites and require them to be on impervious surfaces and in locations of low traffic to limit bacteria runoff.

Erosion Control Inspections

The inspection frequencies within Table 3 in the permit are intended to provide clarity to the construction program requirements and are consistent with other MS4 permits in the state. The Permittee may require inspection of smaller sites or more frequent inspection frequencies, but at a minimum, the Permittee must complete inspections according to Table 3. All active sites greater than 1 acre need to be inspected every 45 days and follow-up inspections are required until issues are

resolved. The Permittee is also required to document and maintain records of all inspections and follow-up for 5 years.

Enforcement Procedures

New to the permit is the requirement for the Permittee to develop an enforcement response plan or similar document. The enforcement response plan should describe how and when the Permittee will use the enforcement provisions in its local ordinance to ensure the discharge of sediment and pollutants is controlled accordingly. For example, a Permittee may elect to issue a stop work order after an initial inspection and follow-up inspection 7 days later, to a site which has not installed erosion and sediment control practices but has begun mass site grading.

II. E. Post-Construction Storm Water Management

The post-construction storm water management program is intended to control the quality of storm water discharges from the MS4 after construction is complete. The discharges should be controlled for the life of the site or until redevelopment takes place. This permit continues the requirement for the Permittee to have an ordinance or regulatory mechanism that applies to sites of specific size and requires post-construction standards equal to or more restrictive than ch. NR 151, Wis. Adm. Code, and Department technical standards. The ordinance should also require a storm water management plan for the site, permit application and associated fees, long-term maintenance for post-construction BMPs, and provide the MS4 with inspection and enforcement authority.

Plan Review and Permitting

Similar to the construction site pollutant control program, the permit requires written procedures the Permittee will employ for reviewing and permitting site plans which require post-construction BMPs. The procedures should describe the Permittee's review process including items the Permittee reviews to consider water quality impacts.[5] These may include wellhead protection barriers near drinking water sources or additional controls for developments in TMDL areas. The procedures should also describe how the Permittee reviews requests for regional storm water controls if proposed by the site developer.[6]

As the Permittee's own ordinance contains provisions for storm water management plan requirements,[7] the written procedure should describe what the requirements are and when these requirements are obtained. As some requirements may differ between municipally owned and municipally operated BMPs, differences should be made clear within the written plan review and permitting procedure. For example, though a Permittee requires long-term maintenance agreements (LTMAs) for privately owned BMPs constructed within its community, the Permittee does not require the same agreement for its own municipally owned BMPs. Rather, the Permittee requires the development of an operation and maintenance (O&M) plan or plan containing inspection and maintenance requirements for its own municipally owned BMPs. Other documentation required by the Permittee, such as record drawings/as-builts, should also be included.

Post-Construction BMP Inventory

New to this permit is the requirement for the Permittee to develop a Post-Construction BMP Inventory. An inventory of structural post-construction storm water management BMPs is critical for

[5] As required by s. NR 216.07 (5) (b), Wis. Adm. Code.
[6] As required by s. NR 216.07 (5) (c), Wis. Adm. Code.
[7] As required by s. NR 216.47, Wis. Adm. Code.

documenting future Total Maximum Daily Load (TMDL) requirements and can be used to help track required BMP inspections, maintenance needs, completed maintenance, or other documentation notes. The BMP Inventory must include all municipally owned or operated, post-constructed BMPs and all privately owned BMPs constructed on or after February 13, 2006.

- Municipally owned BMPs are structural BMPs owned by the Permittee, regardless of date of construction.
- Municipally operated BMPs are structural BMPs, regardless of date of construction, which are not owned by the Permittee, but for which the Permittee has an obligation to ensure the BMP is maintained. For example, a privately owned BMP or BMP owned by a different entity (e.g., a neighboring community) in which the Permittee has a long-term maintenance agreement and thus, can ensure said BMP is maintained.
- As required by the Permittee's previous MS4 permit, the Permittee was to have an ordinance that included storm water management plan requirements equivalent to those contained in s. NR 216.47, Wis. Adm. Code. Consistent with state requirements and permit conditions, the Permittee adopted an ordinance on February 13, 2006. As this ordinance and subsequent revisions both contain long-term maintenance requirements,[8] the Permittee has been required by its own ordinance to obtain maintenance agreements with private BMP owners since at least February 13, 2006. Therefore, any privately owned post-construction storm water management BMP built on or after February 13, 2006, should have a maintenance agreement with the Permittee. The inventory must include these BMPs and provide confirmation of whether long-term maintenance agreements exist.
    - Note: If the City did not obtain a maintenance agreement for any privately owned BMP built on or after February 13, 2006, the City must take action to obtain the required maintenance agreement.

For each BMP, the inventory must identify:

- BMP name, location, BMP type, year constructed, and ownership.
- Confirmation of whether each of the following exists for each BMP:
    - Record drawing.
    - An operation and maintenance plan with inspection procedures and schedule.
    - For privately-owned BMPs, long-term maintenance agreements or written documentation of the Permittee's legal authority to inspect and maintain a privately owned BMP, if needed.

  Note: To utilize privately owned BMPs towards pollutant reduction goals, the Permittee must have a maintenance agreement in place or have regulatory authority to maintain or require maintenance of the private BMPs.

<u>Post-Construction BMP Inspection and Maintenance Procedures</u>

Also new to this permit is the requirement for the Permittee to develop written program documents describing its municipally owned and municipally operated BMP inspection and maintenance procedures. The written procedure should include information such as inspection frequencies and who is responsible for conducting inspections and pursuing maintenance.

As inspection and maintenance procedures often differ between municipally owned and municipally operated BMPs, these inspection and maintenance procedures were separated into two permit

[8] As required by s. NR 216.47(5), Wis. Adm. Code.

conditions for additional clarity. For example, a permittee is typically responsible for inspecting and maintaining its own municipally owned BMPs. However, while a permittee must ensure municipally operated BMPs are inspected and maintained according to the long-term maintenance requirement (e.g., long-term maintenance agreement (LTMA)), typically, the private BMP owner is responsible for inspecting and maintaining its own BMP.

Given the Permittee must develop a BMP Inventory, it may consider including inspection and maintenance procedure information within its BMP Inventory. An example BMP Inventory which includes inspection and maintenance procedure information is provided below. In addition to organizing the required information, the Permittee may also find its BMP Inventory useful to schedule and/or track the required inspections.

Lastly, while BMPs should be inspected according to its operation and maintenance plan or long-term maintenance requirement, the permit sets a minimum expectation that each BMP be inspected at least once every 5 years. Note, if the Permittee requires the private BMP owner to inspect its municipally operated BMP (e.g., private BMP with a LTMA), the Permittee is not required to conduct its own inspection. However, the Permittee is required to ensure the municipally operated BMP is being inspected as required.

Example BMP Inventory with inspection and maintenance information.

BMP Name	BMP Location	BMP Type	BMP Year Constructed	BMP Ownership	Confirmation of: • Record Drawing • O&M Plan • Long-term maintenance authority	Required Inspection Frequency *Must be at least every five years.*	Person(s) responsible for inspection and maintenance

Enforcement of Long-Term Maintenance Requirements for Municipally Operated BMPs

Although the previous permit required the Permittee to enforce its long-term maintenance requirements, this permit requires the Permittee to describe how it will enforce long-term maintenance requirements when noncompliance is discovered. The written procedure should describe person(s) responsible for regulatory and enforcement activities and the general procedure, with associated timeframes, to compel compliance. Below are two examples:

1. If a private BMP owner does not submit its required inspection report, the written procedure should describe the Permittee's process for obtaining the missing inspection report. For example: If an inspection report has not been submitted within 3 months of its due date, the Director of Public Works, or assigned designee, shall send a notification letter to the private BMP owner. The letter will request the inspection report be submitted with 30 calendar days and if not submitted, the City will conduct the required inspection and charge an inspection fee.
2. If a private BMP owner is not conducting the required maintenance, the written procedure should describe the Permittee's process for ensuring maintenance will be completed in a timely manner. For example: Through the review of submitted inspection reports, or through other means such as a complaint, it is discovered that a municipally operated BMP requires

maintenance, the Director of Public Works, or assigned designee, shall send a notification letter to the private BMP owner. The letter will describe the necessary maintenance required and request the BMP owner provide, within 45 calendar days, its plan to conduct the necessary maintenance in a timely manner or provide documentation demonstrating the required maintenance has been completed. If a plan, or proof of completed maintenance is not provided within 45 calendar days or the submitted plan does not provide reasonable assurance the required maintenance will be completed in a timely manner, the Director of Public Works may pursue the following actions: [citation, the Permittee conducting the required maintenance and billing the private BMP owner for occurred cost, etc.].

II. F. Pollution Prevention

Pollution prevention activities are employed to reduce municipal sources of pollution. This section consists of multiple sub-programs, trainings, and at least one measurable goal for the Permittee's pollution prevention program. The maintenance requirements for municipality owned or operated BMPs has been moved to the post-construction section because this requirement fits within the BMP inspection and maintenance requirements.

The sub-programs include winter road management, nutrient management, street sweeping and catch basin cleaning, management of leaves and grass clippings, and Storm Water Pollution Prevention Plans for municipal properties. Since the Permittee is required to submit written program procedures describing how it intends to implement its sub-programs, further explanation to common questions pertaining to sub-program implementation and written program expectations are described below.

If a sub-program is not being implemented to any extent within the Permittee's community, and is therefore not applicable, a written program describing implementation is not required. However, it is recommended the Permittee submit documentation confirming the sub-program is not being implemented. For example, if a Permittee does not have any applicable properties requiring a nutrient management plan, it is recommended the Permittee provide a statement confirming this.

If a sub-program is being implemented by an entity which is not the Permittee, the Permittee is required to submit a written program describing how its sub-program is being implemented and how the Permittee is ensuring implementation is consistent with permit requirements. For example, if a neighboring community or private contractor is conducting winter road management on behalf of a Permittee, the Permittee must submit a written program procedure describing how the sub-program activities are being implemented and describe how the Permittee is ensuring permit conditions are met (e.g., describing how the Permittee is ensuring calibration is occurring at least annually).

If a sub-program is being implemented to any extent, the Permittee is required to submit a written program describing how activities of the sub-program are being implemented. For example, if a Permittee does not collect leaves but its residents may bring collected leaves to one of its municipal properties, the Permittee should describe this in its written program.

<u>Winter Road Management</u>

This permit continues the requirement for municipalities to not apply road salt or deicers in quantities larger than required to maintain public safety. To reduce overapplication of salt and deicers, this permit

continues the requirement for the Permittee to have and implement a winter road management plan. Though this permit contains similar requirements to the Permittee's previous permit (e.g., identification of staff responsible for implementing winter road management is a requirement in both the previous and proposed permit), other conditions within this section have been revised or are new.

For example, where the previous permit required the winter road management plan to include a description of deicing equipment and methods of calibrating equipment, this permit also includes the requirement to calibrate equipment annually. These revised and new conditions are consistent with other MS4 permit conditions throughout the state. The Wisconsin Department of Transportation (WisDOT) Highway Maintenance Manual - Chapter 6,[9] contains guidelines on winter maintenance including application of road salt and other deicers. This, and additional resources such as those provided by Wisconsin Salt Wise,[10] or Minnesota Pollution Control Agency,[11] can be used to assist with evaluating and/or revising the Permittee's salt reduction strategy.

As previously mentioned, this permit requires annual calibration for salt application machinery. The Permittee's winter road management program should describe how calibration is completed for each piece of equipment and maintain a record showing equipment was calibrated. Factory calibration is not considered acceptable for annual calibration as new machinery has been shown to significantly over apply salt based on factory settings.[12] Calibration is also key for properly using the quantity of deicers used for reporting on the annual report.

To ensure the Permittee's winter road management plan is being accurately implemented, the Permittee is required to provide training on its own winter road management plan to municipal staff involved in deicing operations every other year. Although the training content, time of year, participants, etc. are determined by the Permittee, the Department highly encourages the Permittee utilize its training to identify potential improvements to its plan and/or evaluate its salt reduction strategy. For example, some MS4 permittees in the state have implemented evaluation meetings with salt application crews as part of its required trainings. While some MS4 permittees conduct these meetings at the beginning and/or end of each winter season, others have conducted these meeting before and/or after each winter event. During these evaluation meetings, municipal staff responsible for determining the application rates (e.g., DWP Director or DPW Superintendent) meet with application crews to discuss implementation outcomes and potential improvements.

Nutrient Management:
Nutrient management plans are required for any municipally controlled property (e.g., parks, athletic fields, golf courses, lawns, etc.) in which fertilizers are applied to five acres or more of pervious area. Nutrient management plans must be based on soil samples for each individual property that is applicable. For additional information, please refer to DNR Technical Standard 1100, Interim Turf Nutrient Management and additional guidance found here: https://dnr.wi.gov/topic/stormwater/standards/turf_nutrient.html.

[9] Wisconsin Department of Transportation (WisDOT) Highway maintenance manual -Chapter 6. https://wisconsindot.gov/Pages/doing-bus/local-gov/hwy-mnt/mntc-manual/chapter06.aspx The WisDOT highway salt storage requirements are contained in ch. Trans 277, Wis. Adm. Code.
[10] Resources provided by Wisconsin Salt Wise can be found at: https://www.wisaltwise.com/
[11] Minnesota Pollution Control Agency's Smart Salting for Roads Manual can be found at: https://www.pca.state.mn.us/sites/default/files/p-tr1-13.pdf
[12] This finding is based on a previous discussion between Department staff and Mary Jo Lange, former Director of Public Works for the City of Cudahy, in 2020. Testing of a new truck in 2018 was over applying salt by 92%.

Street Sweeping and Catch Basin Cleaning:
Street sweeping and catch basin activities are an effective way to remove large sediment particles that would otherwise be washed away during precipitation events. As with the previous permit, this permit also requires the Permittee to track the number of lane miles swept, number of catch basins cleaned and, if Permittee uses street sweeping or catch basin cleaning as part of their efforts to meet a performance standard or TMDL reduction goal, the sweeping and cleaning frequencies must be consistent with those identified in the pollutant loading analysis.

As street sweeping and catch basin cleaning materials are considered solid waste, collected materials must be disposed of in an appropriate manner. If the Permittee stages this solid waste material prior to disposal, BMPs should be employed to prevent contamination with storm water runoff. Dewatering and drying this solid waste material should be done in a manner that does not allow for liquid generated from this material to discharge to waters of the state (surface, ground, or wetland) as this is considered a non-storm water discharge and is not authorized by this permit. All material should be disposed of in a landfill unless the Permittee has an approved beneficial reuse exemption from the DNR Solid Waste Program.

Management of Leaves and Grass Clippings
Collection of leaves is an effective measure for reducing nutrient input from urban storm water runoff. While many BMPs are designed to settle out solid materials, leaf matter leaches dissolved phosphorus, which is not captured by traditional settling devices. Collection of leaves before precipitation is essential for reducing dissolved phosphorus contributions from the MS4.

This permit requires the Permittee to provide a description of its leaf collection program, including the methodology and equipment used for collection, the frequency and timing of collection, and instructions for residents and landowners on where to locate leaves for collection.

Storm Water Pollution Prevention Planning
This permit continues the requirement for municipal garages, storage areas, and other public works related facilities (e.g., composting facilities) with the potential to generate storm water pollution to have storm water pollution prevention plans (SWPPP) for each site under Permittee control. These sites would normally be covered by an industrial storm water permit, but to avoid the need for multiple permits, the requirements for these industrial sites have been incorporated in the MS4 permit. The requirements for each SWPPP include a map of the site, identification and description of potential sources of pollution, drainage patterns and discharge locations, and all structural and non-structural BMPs, such as good housekeeping activities and training, which are utilized to reduce the runoff of pollutants from the site. SWPPPs shall be revised as needed to be consistent with current site conditions and activities. Updated SWPPPs should be submitted to the Department upon completion or with that reporting year's MS4 Annual Report.

Though it is common for municipal staff to conduct daily visual inspections at facilities requiring SWPPPs, the permit requires at least one annual facility site inspection for each facility. The annual inspection(s) must be documented and maintained for at least 5 years. Any deficiencies found during the inspections should be corrected. Inspections are also necessary to determine the effectiveness of the SWPPP. For example, if multiple stains are observed during an inspection, this may indicate the SWPPP is ineffective at preventing spills. The Permittee may determine revisions to the spills training

is needed, relocation or removal of the pollutant source is needed, and/or additional BMPs are needed. The SWPPP should be updated to reflect these revisions and submitted to the Department.

To further clarify that SWPPPs must be evaluated to determine their effectiveness, the reissued permit requires each SWPPP be evaluated at least once per permit term. If the Permittee determines SWPPP revisions are not required, the SWPPP must still indicate the required evaluation occurred. For example, the SWPPP should contain a cover page or appendix indicating when evaluations occurred and what revisions were made.

If the Permittee operates at a site without a SWPPP, one must be developed and implemented. New SWPPPs must be submitted to the Department for review.

II. G. Storm Water Quality Management
The storm water quality management conditions are continued from the previous permit. The Permittee is expected to maintain all BMPs used to achieve their existing control level in accordance with s. 281.16 (2) and (3), Wis. Stats. Maintenance and continued operation of BMPs is necessary to prevent backsliding.

II. K. Reapplication for Permit Coverage
The permit reapplication requirements are expanded from the previous permit term and specify additional information the Permittee must submit 180 days prior to permit expiration (by December 3, 2029). The reapplication will require submission of materials such as measurable goals for each minimum control measure and TMDL pollutant load reduction benchmarks. The Permittee must also include an explanation on how the proposed actions and benchmarks reduce pollutants to the MEP and provide assurance the TMDL reduction goals will be achieved in the future. The Department will consider the reapplication package and any other relevant information to develop the next permit.[13]

The reapplication information must be submitted to the Department's eReporting system. This electronic system, available at: https://dnr.wi.gov/permits/water/ is the same internet-based system used to submit the MS4 Annual Reports. However, unlike the MS4 Annual Report, information required for the reapplication package will not be submitted on Department forms. Permittees shall provide the information in a written format of their choosing.

III. Total Maximum Daily Loads (TMDLs)
Conditions within this section apply to MS4 areas discharging to the Milwaukee River TMDL (MRB TMDL). These new conditions are required because additional BMPs and controls beyond those currently employed are needed to attain water quality standards.[14]

To provide the Permittee the required time to develop plans for addressing its waste load allocations (WLA), this permit does not require the Permittee to demonstrate numeric progress on its WLAs during this permit term. However, because the MRB TMDL was approved in March 2018, the Department's goal is for the Permittee to implement actions during this permit term that accomplish an improvement in water quality and move the Permittee towards achieving future load reduction goals.

[13] Consistent with ss. NR 216.01 and 216.07, Wis. Adm. Code.
[14] Sawyers, A.D. and Best-Wong, A. November 26, 2014. Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs." USEPA office of Watershed Management

Each of the TMDL Section requirement is described below in more detail.

III. A TMDL Pollutant Load Reduction Evaluation for TSS and TP

Most MS4 permittees in Wisconsin utilize WinSLAMM software to develop load reduction estimates, but the Permittee is not required to use this program. The Permittee may use other computer programs or methods provided the analysis methods are similar or equivalent and approved by the Department. The Department envisions equivalent methodology could be a well-designed monitoring strategy collecting outfall/pipe flow and concentration which can be used for data-based decisions and analysis. In either case, the Permittee should develop its modeling or analysis to be easily updated based upon changes to the individual watershed. Rather than updating the whole analysis, it will be more cost effective to update one model or subset of models. This will be a useful approach for evaluating progress in future permit terms.

The first step in the TMDL planning process is identifying which MRB TMDL reaches, also referred to as reachsheds or sub-watersheds, the MS4 discharges to and the associated reduction goal. Section III.A.a) requires developing a map identifying the specific TMDL reach boundaries, structural BMPs and associated drainage areas, and excluded areas. Supplemental information, such as an explanation for any excluded areas and confirmation of maintenance agreement for private BMPs, must also be provided as required by Section III.A.b).

Once the individual TMDL reaches and drainage areas are identified, the Permittee is required to estimate the pollutant loading from each reachshed with and without controls. The difference between the "no controls load" and "with controls load" is the "existing load reduction". The calculated existing load reductions can then be compared to each reach goal to determine how much additional control is needed for each reach. This information must be complied in a Tabular Summary as required by Section III.A.c).

Prior to permit reissuance, the Department determined that while the Permittee is located within four MRB TMDL reachsheds (MI-17, MI-25, MI-24, and MI-26), at this time, two of the reachsheds (MI-17 and MI-25) only consist of excluded areas. Consequently, the Permittee is currently only assigned TSS and TP WLAs for two reachsheds (MI- 24 and MI-26). While this means the Permittee does not currently have assigned WLAs for reachsheds MI-17 and MI-25, when development occurs within these reachsheds, these areas will no longer be considered excluded, and the Permittee will be assigned TSS and TP WLAs. If development occurs during the permit term, the Permittee should contact its department storm water engineer or specialist for more information on how best to proceed.

III. B WLA Assessment for TSS and TP

The Waste Load Allocation (WLA) Assessment requires the Permittee to evaluate how it can reduce its TSS and TP loading. This assessment shall consider structural and non-structural BMPs the Permittee could implement to continue making progress on its assigned TSS and TP WLAs, including a cost effectiveness analysis for implementation. The intent of this permit condition is for the Permittee to identify all available options to reduce its TSS and to loading. This assessment it is not a commitment of action the Permittee must implement. The Permittee should use this assessment to better plan for future projects such future WLA Benchmarks (Section III.C). The assessment is also intended to illustrate resources needed to achieve WLAs utilizing current practices (i.e., necessary budget and workload, and time to achieve WLAs). If the assessment does not provide reasonable assurance WLA will be achieved by utilizing current practices, the Permittee should consider

implementing alternatives such as Water Quality Trading or adopting more stringent development and redevelopment standard. Additional information on alternatives is described below.

The Permittee is highly encouraged to evaluate multiple alternatives and resources when completing the WLA Attainment Analysis. Within the greater Milwaukee Region, many water quality planning documents already exist or are under development. These include water body specific restoration plans, Nine Key Element Plans, and Regional Green Infrastructure Plan[15]. The Permittee can take the recommendations from these efforts and incorporate them into future development or revitalization plans or use similar methodology for identification of project location and prioritization.

Other options to consider include Water Quality Trading or municipal partnership. These alternatives allow more flexibility in the location of where practices can be implemented for the Permittee to show a reduction in pollutant loads.

III. C. Establishment of WLA Benchmarks for TSS and TP

Where the TMDL pollutant reduction evaluation shows TMDL WLAs have not been met for TSS or TP, the Permittee must develop pollutant load reduction benchmarks for those parameters and submit them with the permit application package. The benchmarks should reflect structural controls implemented as part of the Permittee's storm water management program, as well as any additional reductions expected to result from BMPs proposed to be completed during the next permit term. Nonstructural controls can be included where effectiveness information is available.

The Department expects the TMDL benchmarks to be permit cycle (5-year basis) targets used to assess progress towards meeting the final WLA goal. The Permittee should continue to iteratively manage its storm water programs to reduce pollutants and identify the TMDL benchmarks accordingly. As discussed previously, the Permittee is encouraged to review and incorporate recommendations from other regional plans as the Department will consider these in review of measurable goals and benchmarks as allowed by s. NR 216.07, Wis. Adm. Code.[16]

III. D. Fecal Coliform Reduction Efforts

The third TMDL pollutant with WLAs from the Milwaukee River TMDL is fecal coliform, which is used as an indicator of enteric pathogens[17]. While the TMDL allocations in the Milwaukee River Basin TMDL are expressed only in terms of fecal coliform, both fecal coliform and *E. coli* are used as indicators of enteric pathogens, and both have been listed as sources of recreational use impairments – which the TMDL was completed to address.

Unlike TSS and TP, fecal coliform WLAs are based on a load reduction curve rather than a mass reduction. For permittees, this means that depending upon the moisture conditions, the allowable loading of fecal coliforms changes. However, because fecal coliform loads within the Milwaukee River Basin greatly exceed the water quality standard under all flow conditions, efforts are needed across the board.

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[15] Milwaukee Metropolitan Sewerage District Regional Green Infrastructure Plan. June 2013. https://www.mmsd.com/what-we-do/green-infrastructure/resources/regional-green-infrastructure-plan

[16] Section NR 216.07, Wis. Adm. Code. Permit Requirements. The Department shall issue permits using the information provided by the applicant and other pertinent information when developing permit conditions.

[17] Final Report: Total Maximum Daily Loads for Total Phosphorus, Total Suspended Solids, and Fecal Coliform Milwaukee River Basin, Wisconsin. Approved by USEPA on March 9, 2018.

Described below, the Permittee must identify known or potential fecal bacteria sources to reduce fecal bacteria loading to its MS4. While these permit conditions require the Permittee to address fecal bacteria sources during this permit term, these conditions are also intended to better address fecal bacteria sources in future permit terms.

Additional information and resources pertaining to fecal bacteria in storm water is found on the Department's MS4 Best Management Practices Menu under the Total Maximum Daily Loads (TMDLs) and Impaired Waters section: https://dnr.wisconsin.gov/topic/stormwater/tmdl

Dry-Weather Sampling Data

The first new requirement in this permit to address fecal coliform is for the Permittee to sample for *E. coli* during its routine dry-weather outfall screenings, when flow is present. The Permittee may test for *E. coli* at all its MS4 outfalls; however, the Permittee must test for *E. coli* at screened MS4 outfalls discharging to the MRB TMDL. Please note, when flow is present, sampling for *E. coli* is in addition to the other required IDDE parameters (e.g., pH, total chlorine, total copper, total phenol, and detergents). As with the other IDDE parameters, if parameter action levels are exceeded, the Permittee must work to identify and eliminate the source. However, unlike the other IDDE parameters, the Department set an *E. coli* action level of 10,000 MPN/100mL[18].

The permit is specific to *E. coli* because it is the fecal coliform bacteria indicator the Permittee intends to use. Additionally, scientific literature has shown *E. coli* to be a reliable and useful indicator as this type of bacteria is specific to warm-blooded animals (including humans) and does not naturally exist in the environment. Whereas other fecal bacteria indicators, such as *Enterococci*, may naturally exist in certain environments.[19] Though the Permittee intends to use *E. coli* as its fecal bacteria indicator, if the Permittee wishes to change its fecal bacteria indicator during this permit term, it must submit its proposed alternative to the Department for review and approval first. As described above, part of this reasoning is because other fecal bacteria indicators may not be appropriate however, an alternative fecal bacteria indicator also impacts permit condition III.D.1.b) – investigating when *E. coli* exceeds 10,000 MPN/100mL.

Though other indicators could be used to detect fecal bacteria, parameter action levels may need to be changed and/or additional testing may be required. For example, total coliform, a bacteria found in warm blooded animals, could be used to determine if fecal bacteria is potentially present. However, total coliform is also found in soil and plant vegetation, and therefore the presence of total coliform does not necessarily indicate fecal contamination. As such, the Department would not approve of this alternative indicator without additional testing.

Sampling Data Evaluation

To better determine where additional fecal bacteria efforts may be needed in the future, the Permittee is required to evaluate its *E. coli* sampling data (Section III.D.2). In summary, the intent of this requirement is to see if any conclusions or correlations can be made concerning fecal coliform bacteria loading sources. For example, if *E. coli* was not present at screened outfalls #1-9 but was present at outfall #10, this could indicate fecal bacteria loading is not an issue within outfall #1-9's drainage

[18] Several scientific publications have shown concentrations above 10,000 MPN/100 mL of *E. coli* in storm water are indicative of sewage contamination. For example: https://pubs.usgs.gov/publication/70225594
[19] Rothenheber, D., Jones, S. 2018: e01038-18. doi: 10.1128/AEM.01038-18

areas. Therefore, the Permittee can focus its fecal bacteria reduction and elimination efforts in outfall #10's drainage area. The Department also envisions this evaluation will be used to help draft future MS4 permit requirements. For example, if *E. coli* never exceeded 10,000 MPN/100mL but exceeded 5,000 MPN, the next MS4 permit may lower the *E. coli* action level to 5,000 MPN/100mL.

Potential Sources and Elimination Efforts

Lastly, the Permittee is required to identify potential fecal bacteria sources at its publicly owned parks, recreational areas, open lands, and other areas that attract congregations of nuisance urban birds and/or wildlife (Section III.D.3). For this effort, the Permittee will need to identify and describe all of its applicable "areas," including the TMDL reachshed the area is located within. For each "area," a description of potential fecal bacteria sources, existing fecal bacteria reduction efforts, and propose additional fecal bacteria efforts that could be implemented in the future should be provided. An example tabular format is provided below for reference.

The intent of this condition is multifaceted. To start, this condition requires the Permittee to evaluate its community to determine if there are potential fecal bacteria loading sources that could be better managed. For example, if birds congregate at a specific parking lot, the Permittee should determine if this property has existing BMPs which help reduce fecal bacteria loading to the MS4 (e.g., a BMP could be disconnection if the parking lot discharges to a green space rather than the street/storm drain). Then, the Permittee should determine what additional BMPs could be implemented (e.g., install *Do Not Feed Wildlife* educational signage). Though the Permittee is required to propose additional BMPs, the Permittee is not required by the permit to implement these proposed BMPs. However, as previously noted, the intent of this condition is multifaceted.

The Department envisions this effort will tie into the Permittee's *E. coli* Sampling Data Evaluation (Section III.D.2). As described above, the intent of this condition is to determine if any correlation can be made between the sampling data results and the drainage area. For example, if the sample results for outfall #1 indicate *E. coli* loading in that drainage area, the Permittee should see if it has any potential fecal bacteria loading sources identified within that drainage area. If so, there is more support for implementing additional BMPs in that area.

Example Potential Fecal Bacteria Sources and Elimination Efforts Table

Evaluated Area Name	**Area located in TMDL Reachshed**	**Description of the Area**	**Potential bacteria sources**	**Existing BMPs**	**Potential additional BMPs**
Cedarburg City Park	MI-26	Recreational Park	Pets Congregation of geese in pond	Pet waste ordinance Disconnect from impervious via turf	Pet waste station, educational signage
North Side Dog Park	MI-24	Dog Park	Pets (dogs) Waste station (pet waste)	Pet waste station	n/a
City Hall	MI-24	Large building surrounded by	Nuisance birds	None	Disconnect impervious

		parking lot. No green space			surface Install educational signage

III. E. TMDL Benchmarks

As the Permittee works to identify and plan for future actions to achieve its assigned TMDL WLAs, the Department requested the Permittee propose specific actions that could be implemented during this permit term which improves water quality and moves the Permittee towards achieving future load reduction goals. The Department used these proposed actions to develop TMDL Benchmarks. The Permittee is required to submit documentation verifying its TMDL Benchmarks were completed no later than December 3, 2029.

Background and additional information for each TMDL Benchmark is provided below.

> ***III.E.1: After confirming long-term maintenance requirements, update its TMDL Pollutant Load Reduction Evaluation for TSS and TP, consistent with Section III.A. The updated TMDL Pollutant Load Reduction Evaluation for TSS and TP may also include additional projects implemented during the permit term.***

As previously discussed, to count the load reduction of privately owned BMPs, the City must have maintenance agreements. Though the City has required long-term maintenance agreements for any private BMP built on or after February 13, 2006, because the City's existing BMP Inventory includes "post-2004 BMPs", the City is unsure if these post-2004 BMPs were required to have LTMAs.

Understanding it may take time to locate documentation for post-2004 BMPs, the Department proposed a TMDL Benchmark which would not delay the City's TMDL planning efforts and should encourage more efficient TMDL planning activities. As required by Section III.A, the City must submit a TMDL Pollutant Load Reduction Evaluation for TSS and TP by June 1, 2026. This Evaluation must only include private BMPs with verified LTMAs (i.e., municipally operated BMPs). However, after verifying LTMAs for these post-2004 BMPs, the City should update its Evaluation to include the applicable BMPs.

Furthermore, if the City implements additional BMPs during the permit term, those could also be included in its updated TMDL Pollutant Load Reduction Evaluation for TSS and TP. For example, while discussing potential TMDL Benchmarks the City could implement during this permit term, the City explained it planned to evaluate an upcoming road reconstruction project (S. Washington Avenue) for additional stormwater management. As this project was not finalized prior to permit reissuance, this project did not become a specific TMDL Benchmark. However, given the City will be updating its pollutant load reduction evaluation during the permit term, any additional progress made during this permit term can be incorporated into the updated Evaluation. This updated Evaluation will assist the Permittee in more efficient TMDL planning activities and will provide the Department a better understanding of future TMDL expectations.

III.E.2: Reassess the feasibility of projects identified in its 2018 Storm Water Management Plan to determine if additional projects will be necessary to fully achieve TSS and TP TMDL WLAs. After reassessment, provide findings and priority list.

Reassessing previously identified project list not only helps the City better plan for future projects, the Department benefits from this reassessment as well. For example, a newly revised priority list will provide the Department reasonable assurance the City will achieve its pollutant reduction goals and could assist in future conversations with the City. Although projects may be planned for implementation, the Department recognizes that project plans may change for a variety of reasons such as change in funding (e.g., funding became limited or additional funding became available), change in staff (at the City or DNR), or additional factors such as complications with private landowners. Therefore, a new priority list will allow the Department to better track changes and/or better convey the need for continued project implementation.

IV. Implementation Schedule

The implementation schedule for new and updated permit requirements which apply to the Permittee is listed in Table 4 of the proposed permit. Tables 4 does not list all the requirements of the permit. For example, this section does not list submitting new or updated SWPPPs as it is currently unknown if new or revised SWPPPs will occur during this permit term. As such, it is the Permittee's responsibility to ensure it is complying with the all permit conditions contained within the permit.

Additional Information

The proposed WPDES permit, fact sheet, and other MS4-related information are available from the Department's website as indicated below. Web links to pertinent state statutes and administrative codes are also provided.

DNR WPDES Permits on Public Notice website:
http://dnr.wi.gov/topic/Wastewater/PublicNotices.html

DNR Storm Water Runoff Permits website:
http://dnr.wi.gov/topic/stormwater/

DNR Municipal Storm Water Permits website:
http://dnr.wi.gov/topic/stormwater/municipal/

DNR Storm Water Technical Standards, Models and BMPs website:
http://dnr.wi.gov/topic/stormwater/standards/

Chapter 283, Wis. Stats.:
https://docs.legis.wisconsin.gov/statutes/statutes/283.pdf

Chapter NR 151, Wis. Adm. Code:
https://docs.legis.wisconsin.gov/code/admin_code/nr/100/151.pdf

Chapter NR 216, Wis. Adm. Code:
https://docs.legis.wisconsin.gov/code/admin_code/nr/200/216.pdf

Permit Drafter

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