



Saginaw Area Storm Water Authority

SAGINAW AREA STORM WATER AUTHORITY
TOTAL MAXIMUM DAILY LOAD PLAN

Including the following members:

AGENCIES:

SAGINAW COUNTY- *Saginaw County Public Works Commissioner (SCPWC)*

LOCAL MUNICIPALITIES:

BRIDGEPORT CHARTER TOWNSHIP
TITTABAWASSEE TOWNSHIP AND SCHOOL DISTRICT

EDUCATIONAL INSTITUTIONS:

BRIDGEPORT-SPAULDING COMMUNITY SCHOOLS

I. Introduction

In 2009, the Tittabawassee River *E. coli* Total Maximum Daily Load (TMDL) was approved and in 2019, the U.S. Environmental Protection Agency approved a statewide *E. coli* Total Maximum Daily Load (TMDL). This TMDL addresses all surface waters (inland lakes, Great Lakes, streams, rivers, wetlands, and beaches) in the state of Michigan that are impaired by *E. coli*.

This plan is to be applied only to those designated impaired surface waters in the SASWA member's urbanized area (UA) as defined by the most recently published census data.

The impaired designated uses addressed by this TMDL are total and partial body contact recreation. The designated use rule (R 323.1100 of the Part 4 rules, WQS, promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended) states that this water body is to be protected for total body contact recreation from May 1st to October 31st and year-round for partial body contact recreation.

The target levels for these designated uses are the ambient *E. coli* standards established in Rule 62 of the WQS as follows:

R 323.1062 Microorganisms.

Rule 62. (1) All waters of the state protected for total body contact recreation shall not contain more than 130 E. coli per 100 milliliters, as a 30-day geometric mean. Compliance shall be based on the geometric mean of all individual samples taken during 5 or more sampling events representatively spread over a 30-day period. Each sampling event shall consist of 3 or more samples taken at 2 representative locations within a defined sampling area. At no time shall the waters of the state protected for total body contact recreation contain more than a maximum of 300 E. coli per 100 milliliters. Compliance shall be based on the geometric mean of 3 or more samples taken during the same sampling event at representative locations within a defined sampling area.

Rule 62. (2) All surface waters of the state protected for partial body contact recreation shall not contain more than a maximum of 1,000 E. coli per 100 milliliters. Compliance shall be based on the geometric mean of 3 or more samples, taken during the same sampling event, at representative locations within a defined sampling area.

For this TMDL, the water quality standard of 130 *E. coli* per 100 mL as a 30-day geometric mean and 300 *E. coli* per 100 mL as a daily maximum to protect the total body contact use are the target levels for the TMDL reaches from May 1st through October 31st, and 1,000 *E. coli* per 100 mL as a daily maximum year-round to protect the partial body contact use.

II. Procedure for identifying and prioritizing BMPs currently being implemented for the TMDL in the Urbanized Area within the jurisdictional boundary of SASWA

The level of detail in identifying and prioritizing best management practices (BMPs) to address the *E. coli* TMDL in varies with the extent of local involvement, stakeholders, and the level of involvement of local governing institutions. Implementation of a procedure to identify and prioritize BMPs will be as follows:

1. The Saginaw Area Stormwater Authority (SASWA) will continue to cooperate with those developing a collaborative plan to address the regional issue of the *E. coli* TMDL.
2. SASWA will also work with local stakeholder groups which are involved in the work with the Lower Cass, Lower Flint, Lower Tittabawassee, Swan Creek and Upper Saginaw River Watershed Advisory Groups to identify BMPs to implement within economically feasible implementation parameters.
3. The SASWA will review existing Watershed Management Plans (WMPs) to determine which BMPs these plans have identified to address the *E. coli* TMDL which is evaluated in the WMPs.
4. The SASWA will review the existing *E. coli* TMDL adopted by Michigan Department of Environment, Great Lakes, and Energy (EGLE) in 2009 and 2019 for recommended BMPs.
5. The above mentioned TMDL document will also be used to assist in prioritizing BMPs to address the statewide *E. coli* TMDL in the Urbanized Area of the SASWA members that have TMDL included in their issued National Pollutant Discharge Elimination System (NPDES) municipal separated storm sewer (MS4) permit.
6. SASWA will cooperate with stakeholders to revise this TMDL procedure to assure it can be realistically implemented. This will be done at least once per permit cycle.
7. Once a BMP is implemented, it will be reviewed at least once a permit cycle to determine effectiveness. Or, if it is an administrative BMP if updates or revisions will be necessary.
8. Criteria for review, updates or revisions of a BMP will be completed once per permit cycle.
9. Any changes in identification of BMPs or prioritization of BMPs will be reported in a scheduled progress report during a permit cycle.

III. List of prioritized BMPs currently being implemented during the permit cycle to make progress towards achieving a load reduction.

There are several best management practices (BMPs) available to reduce *E. coli* in waterways and surface waters of the state. Source control strategies have the goal of reducing pollution at the source. They can involve both structural and non-structural BMPs. Examples of source control strategies for *E. coli* reduction are listed in Table 1.

The below table is also prioritized with the order they are listed. If this priority changes when the table is reviewed during the permit cycle, then the table will be revised and

an updated table with the new priority ranking will be submitted with the progress report.

Table 1. Source Control Strategies

| BMPs or Strategies currently in place | Tasks | Targeted TMDL |
|--|--|----------------------|
| Illicit Discharge Elimination Program | Outfall sampling, source tracking, dry weather screening, video/TV of drains, smoke/dye testing | <i>E. coli</i> |
| Runoff reduction | Use of green infrastructure to transport stormwater, e.g., bioswales, porous paving, rain gardens, infiltration basins | <i>E. coli</i> |
| Storm sewer maintenance/cleaning | Catch basin cleaning, street sweeping, roadkill pickup | <i>E. coli</i> |
| Pet waste management | Educational programs, pet waste disposal products at county parks | <i>E. coli</i> |
| On Site Sewage Systems (OSSS) Program | Educational programs, inspections, information for repair and replacements as administered by the County Health Department | <i>E. coli</i> |
| Low Impact Development (LID) | LID Ordinances, practices for new developments | <i>E. coli</i> |
| Wildlife / waterfowl management | Population control, especially geese, ducks at county/city parks with lake or river frontage | <i>E. coli</i> |

IV. Monitoring Plan for assessing BMP effectiveness towards achieving TMDL pollutant load reduction.

SASWA will take the following approach to meet the TMDL goals and proposed the following plan for monitoring the effectiveness of the BMPs to reduce *E. coli* pollutant load. First, SASWA will continue to work with other communities and stakeholders to monitor the overall health of the watershed(s) within the urbanized area as applicable.

The SASWA MS4 permittee jurisdiction is limited to member owned facilities within the urbanized area. The permitted SASWA MS4 storm water system consists of 28 discharge/outfall points from member-owned stormwater systems within the TMDL boundary. See Table 2 for a breakdown of the number of outfalls and/or point of discharges (POD) each member has in the TMDL area.

Table 2. Outfalls/point of discharges (POD) per member in the current TMDL area

| Member | Number of Outfalls/POD in TMDL Area | TMDL Area |
|---|--|--------------------------|
| Tittabawassee Township | 4 | Tittabawassee River TMDL |
| Bridgeport Township | 2 | Statewide TMDL |
| Bridgeport Spaulding Community Schools | 3 | Statewide TMDL |

| Member | Number of Outfalls/POD in TMDL Area | TMDL Area |
|--|-------------------------------------|---|
| Saginaw County Public Works Commissioner | 19 | Statewide TMDL & Tittabawassee River TMDL |

The second component of the SASWA MS4 *E. coli* monitoring plan will consist of end of pipe wet weather sampling and testing. Wet-weather sampling will be conducted as follows:

- Sampling will be completed between May 1st and October 31st
- Sampling will focus on the “first flush” within the first 30 minutes, but not longer than the first 60 minutes, after the beginning of a rain event
- The rain event shall generate run-off sufficient for obtaining a sample
- Laboratory analysis will occur within 6 hours of collection of the sample

Any attempts to sample will be documented and the reason that the above conditions were unable to be met will be noted.

SASWA will attempt to collect monitoring grab samples from all outfall/discharge points pre and post BMP implementation monitoring. Wet weather sampling will be performed on all outfall/point of discharge sources twice during the permit cycle, with all initial screenings being completed prior to any follow up sampling. Due to the nature of wet weather sampling, it is unlikely that all the points will be sampled during a single rain event. SASWA will implement BMPs, with *E. coli* screening occurring both pre and post BMP implementation. The *E. coli* data will be recorded and analyzed to attempt to equate characteristics of the drainage district with the *E. coli* levels recorded.

If after wet weather sampling, sites exhibit low levels of *E. coli* (less than 300 cfu/100 mL, full body contact standard), demonstrating that the drainage area/system is not a significant contributor to *E. coli* pollutant load, the point will be removed from the sample list and not revisited. If there is a higher level of *E. coli* (greater than 1,000 cfu/100 mL, partial body contact standard) found at an individual discharge than in others, the drainage area will be investigated further to attempt to determine the likely source and inform the selection and implementation of corrective BMPs.

The information gathered from the sampling and evaluation of the *E. coli* levels at the individual drainage areas will direct SASWA efforts in establishing BMPs; ordinances; policy and procedures; and other stormwater control efforts to ensure progress toward achieving the required *E. coli* reductions. Those efforts will be compared with future results of the wet weather sampling prior to permit reissuance to determine which efforts have a discernable relationship to the *E. coli* levels generated.