

**Total Maximum Daily Load (TMDL)  
Implementation Plan for  
Delhi Charter Township**



**January 2019**

## **I. Introduction to the Total Maximum Daily Load (TMDL)**

Keeping residents and visitors to Michigan safe while pursuing their recreational interests in Michigan's waters is a Michigan Department of Environmental Quality (MDEQ) priority. To help attain the goal of enhancing recreational waters, Michigan continues to expand its efforts to reduce E. coli contamination of its surface waters through the establishment of the Total Maximum Daily Loading (TMDL) for E. coli. The TMDL represents the maximum loading that can be assimilated by a water body while still achieving its designated Water Quality Standard (WQS).

The TMDL requirements established for Delhi Charter Township (Township) water bodies are the same as those established for all other surface waters in the State of Michigan that are impaired by E. coli. The goal of the TMDL as established by MDEQ is to identify problem areas, address sources of E. coli statewide, and provide guidance to restore these waters.

Currently the E. coli TMDL applies to both the Grand and Red Cedar Rivers, therefore encompassing all watershed areas within the Township.

The National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System (NPDES MS4) Permit issued by MDEQ requires the Township to implement a Stormwater Management Program to reduce the discharge of pollutants, including E. coli, to the maximum extent practicable.

## **II. Legal Requirements for Establishing a TMDL**

Section 303(d) of the federal Clean Water Act (CWA) and the United States Environmental Protection Agency's (USEPA) Water Quality Planning and Management Regulations (Title 40 of the Code of Federal Regulations, Part 130) requires states to develop TMDLs for water bodies that are not meeting WQS. The list of water bodies that are not meeting their designated uses are listed in the 303(d), 305(b), and 314 Integrated Report which partially fulfills Michigan's requirement to assess the designated uses of its waters. Michigan's Integrated Report (MDEQ 2016a) is updated every two years. In addition to containing a list of impaired bodies, it also contains the causes of the impairment and a schedule for TMDL development.

A TMDL establishes the allowable level of pollutants for a water body based on the relationship between pollution sources and in-stream water quality conditions. TMDLs provide a basis for determining the pollutant reductions necessary from both point and nonpoint sources to restore and maintain the quality of water resources.

## **III. Numeric Limits for the E. Coli TMDL**

Water bodies are evaluated for the Total Body Contact (TBC) and Partial Body Contact (PBC) recreation designated uses using E. coli as an indicator for other harmful pathogens. This is consistent with USEPA recommendations for fresh water recreational water quality criteria for protecting human health.

Michigan's designated use rule (Rule 100 {R323.1100} of the Part 4 Rules, WQS, promulgated under Part 31, Water Resources Protection of the Natural Resources and Environmental Protection Act (NREPA), 1964 PA 451, as amended) states that water bodies be protected for TBC recreation from May 1 through October 31 and PBC recreation year-round. The target levels for these designated uses are the ambient E. coli WQS established in Rule 62.

The State of Michigan has officially established the limits for its E. coli TMDL to be a concentration based standard as follows: "For this TMDL, the WQS of 130 E. coli per 100mL as a 30-day geometric mean and 300 E. coli per 100mL as a daily maximum to protect the TBC use are the target levels for the TMDL reaches for May 1 through October 31, and 1,000 E. coli per 100mL as a daily maximum year-round to protect the PBC use."

#### **IV. Delhi Township Watersheds**

The Township and the nested Holt Public Schools, discharge into sub-watersheds that ultimately contribute to the Red Cedar River or Grand River Watersheds. The delineation between the two watersheds begins near Cartago Drive in the Northwest corner of the Township and meanders in a Southeasterly direction to near 4788 Nichols Rd. The exact areas of Township and nested MS4s that discharge to the two watersheds have been identified and recorded in GIS form.

#### **V. Resources used to develop this TMDL Implementation Plan**

Four sources were considered in developing the Township E. coli TMDL Implementation Plan:

1. MDEQ document entitled "*Michigan's Statewide E. Coli Total Maximum Daily Load*", dated December 2016.
2. MDEQ document entitled "*Total Maximum Daily Load for E. coli in Portions of the Red Cedar River and Grand River Watersheds; including Sycamore, Sullivan, Squaw, and Doan Creeks* dated August 2012
3. MDEQ website at [www.mi.gov/ecolitmdl](http://www.mi.gov/ecolitmdl). This website provides resource material regarding the development of the Statewide E. coli TMDL; webinars explaining the TMDL requirements; an interactive mapping tool to find information for each watershed; MS4 requirements; etc.
4. Guidance derived from MDEQ staff and meetings with the Greater Lansing Regional Committee for Stormwater Management (GLRC), the local watershed group to which the Township is a dues paying member.

## **VI. Best Management Practices for Addressing Potential Sources of E. coli**

The existing Township Stormwater Management Program contains existing ordinances; policies and procedures; specialized programs (e.g. IDEP, PEP, SWPPP, Good Housekeeping/BMPs, etc.) to address the identification, evaluation, and elimination of the various sources of E. coli that could potentially discharge into the Red Cedar River Watershed and the Grand River Watershed.

The following citations from Delhi Township specialized programs are specifically related to BMPs that target E. coli.

- The Delhi Township Illicit Discharge Program references the *Delhi Township Good Housekeeping and Pollution Prevention Manual- SOP 2.14 Drainage System Maintenance* and Delhi Township Sewer Use Ordinance 112, Section 18-102 (e). Both are included as attachments with the permit application.
- The Delhi Township Public Education Plan addresses E. coli BMP's in the following sections:
  - D. – Public Education Plan Implementation
    - (A). Promote public responsibility and stewardship in the applicant's watershed(s)
    - (B). *Inform and educate the public about the connection of the MS4 to area waterbodies and the potential impacts discharges could have on surface waters of the state.*
    - (C). *Educate the public on illicit discharges and promote public reporting of illicit discharges and improper disposal of materials into the MS4.*
    - (F.) *Promote proper disposal practices for grass clippings, leaf litter, and animal wastes that may enter into the MS4.*
    - (G.) *Identify and promote the availability, location, and requirements of facilities for collection or disposal of household hazardous waste, travel trailer sanitary wastes, chemicals, yard wastes, and motor vehicle fluids.*
    - (H.) *Inform and educate the public on proper septic system care and maintenance, and how to recognize system failure.*

## **VII. Establishing a Monitoring Plan for Addressing the E. coli TMDL**

The MDEQ requires that each permittee receiving an NPDES MS4 Permit develop an implementation plan for outlining how it intends to “*make progress toward achieving the pollutant load reduction requirement*” for each TMDL listed in its watershed. Areas of the Delhi MS4 and the nested Holt Schools that terminate at a point of discharge to the underground and unobservable Ingham County Drain system, will be monitored only when sampling by the Drain Commission at the downstream outfall indicates sampling is necessary.

*The Delhi Township and the nested Holt School system MS4 is comprised of 14 outfalls. Other points of discharge flow to unobservable underground systems as part of Ingham County Drains. The properties covered by the Delhi MS4 NPDES permit are served by a separated sanitary sewer system with no other public or private contribution of storm water. The Township asserts that all MS4 discharges are currently below the TMDL action level.*

**A. Red Cedar River Monitoring Plan:**

The Township will continue to work with other communities and entities within the Red Cedar River Watershed to monitor the overall health of the entire watershed.

The Township will continue to participate in the ongoing sampling and monitoring program established by the Ingham County Health Department (ICHHD) in 2004. The ICHHD currently samples at one site on the Sycamore Creek in the Township. Sample results for previous years can be found on their website under “Health Department Records, Data and Reporting Environmental Health Data Water Quality River & Stream Sampling Site Results”. In 2015 and 2016, samples were taken weekly at each location for 22 weeks from the beginning of May through the end of September.

Sampling was also collected by the MDEQ from May to August 2009 as part of its TMDL development program. Additional sampling was also conducted in 2012 and 2013 by Michigan State University as part of the 319 Watershed Management Plan. The Township will monitor the results of any follow up sampling conducted by these entities and cooperate with any other relevant joint efforts to evaluate the overall health of the Red Cedar River Watershed.

The Township is committed to working with the other members of the Red Cedar River Watershed to implement the findings of the 319 Watershed Management Plan. The Watershed Management Plan outlines use of certain BMPs (Chapter 7- Structural BMP Implementation Plan), public education strategies, Chapter 8- Information and Education Strategy.

The Township will implement a plan to analyze and track the actual contribution of E. coli from Township and nested MS4’s to the Red Cedar River Watershed by conducting of end of pipe sampling.

As part of the formal IDEP program, the Township has identified five MS4 outfalls that contribute to the Red Cedar River Watershed.

Red Cedar River Watershed:

<u>MS4 Outfall Number</u>	<u>Location</u>	<u>Subwatershed</u>
1). ST026	Delhi Maintenance	Cook & Thorburn Drain
2). ST027	Delhi Maintenance	Cook & Thorburn Drain
3). ST028	Delhi Maintenance	Cook & Thorburn Drain

4).ST012  
5).ST021

Centennial Park  
Dell Lift station

Cook & Thorburn Drain  
Green Drain

The MS4 discharge points identified above are permitted by MDEQ as part of the Township NPDES MS4 Permit.

The following information is collected for each MS4 discharge point and maintained as part of the Township IDEP Program:

- GPS coordinates
- Photos of the discharge structure
- Drainage area served

Each discharge point is shown on maps included in the Delhi Stormwater Management Program with an identifiable number.

During wet weather, the Township will sample all regulated discharges to the Red Cedar Watershed twice during the permit cycle to show compliance with TMDL limits for E. coli. (i.e. 2018 and 2020).

Wet weather sampling will focus on the first flush within the first 30 minutes if possible but not longer than the first 60 minutes. Analysis must will occur within 6 hours of collection of the sample.

#### **B. Grand River Watershed Monitoring Plan:**

The Township will continue to work with other communities and entities within the Grand River Watershed to monitor the overall health of the entire watershed

The Township will continue to participate in the ongoing sampling and monitoring program established by the Ingham County Health Department (ICHD) in 2004. The ICHD currently samples at one site along the Grand River in the Township. Sample results for the past 15 years can be found on their website under “Health Department Records, Data and Reporting Environmental Health Data Water Quality River & Stream Sampling Site Results”. In 2015 and 2016, samples were taken weekly at each location for 22 weeks from the beginning of May through the end of September.

The Township is committed to working with the other members of the Grand River Watershed to implement the findings of the 319 Watershed Management Plan. In particular the use of certain BMPs.

The Township will implement a plan to analyze and track the actual contribution of E. coli from Township and nested MS4’s to the Grand River Watershed by means of end of pipe sampling.

As part of its formal IDEP program, the Township has identified nine MS4 outfalls that contribute to the Grand River Watershed.

Grand River Watershed:

<u>MS4 Outfall Number</u>	<u>Location</u>	<u>Subwatershed</u>
1). ST059	Holt High School	Gilbert and West Town Drain
2). ST060	Holt High School	Gilbert and West Town Drain
3). ST061	Holt High School	Gilbert and West Town Drain
4). ST081	Holt High School	Gilbert and West Town Drain
5). ST051	Horizon Elementary	Gilbert and West Town Drain
6). ST052	Horizon Elementary	Gilbert and West Town Drain
7). ST053	9 <sup>th</sup> Grade Campus	Gilbert and West Town Drain
8). ST056	9 <sup>th</sup> Grade Campus	Gilbert and West Town Drain
9). ST020	Waverly Lift Station	Gilbert and West Town Drain

The MS4 discharge points identified above are permitted by MDEQ as part of the Township NPDES MS4 Permit.

The following information is collected for each MS4 discharge point and maintained as part of the Township IDEP Program:

- GPS coordinates
- Photos of the discharge structure
- Drainage area served

Each discharge point is shown on maps included in the Delhi Stormwater Management Program with an identifiable number.

During wet weather, the Township will sample all regulated discharges to the Grand River Watershed twice during the permit cycle to show compliance with TMDL limits for E. coli. (i.e. 2018 and 2020).

Wet weather sampling will focus on the first flush within the first 30 minutes if possible but not longer than the first 60 minutes. Analysis must will occur within 6 hours of collection of the sample.