

Statewide *E. coli* Total Maximum Daily Load 2022 Addendum
Comments and Responses

The Statewide *E. coli* Total Maximum Daily Load (TMDL) 2022 Addendum was open for public comment and available from February 21 through March 25, 2022. During the public comment period, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) received several questions and comments, as follows (comments that resulted in a change to the Addendum are marked with an asterisk *):

[Comments from Michigan Farm Bureau \(MFB\), received March 25, 2022](#)

MFB Comment 1: “Several Assessment Units being designated with TMDLs do not appear to meet Michigan’s standards for Impairment: five Assessment Units do not even meet the minimum number of sampling events required to establish non-compliance with water quality standards (WQS), having had fewer than five sampling events taken as required in the standards. They should not be designated with TMDLs at all until they meet the state’s own water quality sampling requirements to assess Impairment.”

Response 1: The five water bodies referenced by MFB are as follows:

Assessment Unit	Subwatershed Name	Number of Events (n)	% Total Body Contact Daily Exceedances	% Partial Body Contact Daily Exceedances
041000020306-01	Big Meadow Drain-Black Creek	4	25	25
040601010503-02	Baldwin River	3	33	0
040900050110-01	Davis Creek	4	75	25
040500010103-01	Tallahassee Drain	4	75	25
040500030206-01	South Branch Kalamazoo River	4	25	0

While 5 sampling events are required to calculate a 30-day geometric mean, our assessment methodology allows assessment decisions to be made based on fewer than 5 events when using the daily maximum WQS. These instances are few, but are clearly marked in the Addendum, coded as “Data1.” According to the 2022 Assessment Methodology and United States Environmental Protection Agency (USEPA) Guidance (2002), “A 10 percent exceedance threshold is targeted for making designated use determinations following USEPA guidance. However, discretion may be used when considering a single violation and the magnitude of the exceedance under certain circumstances using small datasets.” EGLE believes this use of data is justifiable when upstream or downstream hydrologically connected Assessment Units have larger datasets which support the decision (greater than or equal to 5 events). This is true of all 5 of the Assessment Units coded as Data1. Michigan strives to obtain 5 sampling events, but there are rare occasions when technical issues occur, such as sample bottles arriving at the lab broken, samples being unreadable by the lab, or situations where logistics prohibit obtaining the 5th sample (such as roads being unexpectedly closed or a stream

becoming dry). In these rare situations EGLE staff consider the magnitude of the exceedances in the data we possess in determining if an impairment is indicated. For example, if there are 5 planned monitoring events and 2 exceeded the daily Total Body Contact (TBC) WQS (the stream was dry during the 5th monitoring event), the assessment of “impaired” would be made. This is the scenario for one of the water bodies coded as Data1 (040900050110-01). In another example, only 3 monitoring events exist in a particular Assessment Unit, but a downstream segment has 5 events and meets the 10 percent exceedance threshold, that impairment would be extrapolated to the Assessment Unit with only 3 events (provided that those 3 events also show exceedance of the WQS). An example of this scenario is 040601010503-02.

***MFB Comment 2:** “Another 57 Assessment Units are annotated with a code which the Addendum describes as: “The summary for this water body is based on contiguous up or downstream AIUD(s) with consistent land use patterns (n>5).” This leaves the reader uncertain whether the sampling events, results, 30-day geometric means, or designation with a TMDL is even being made on that Assessment Unit itself, or if MDEGLE staff are making assumptive leaps that an Assessment Unit needs a TMDL for *E. coli* because a connected Assessment Unit (a connected water body such as nearby segments of the same stream, lake, or shoreline, upstream or downstream of the newly designated Assessment Unit) is also Impaired for *E. coli*. Particularly for Assessment Units upstream of their comparative neighbors, this annotation brings into serious question whether these Assessment Units should be part of the list of newly designated TMDLs for *E. coli*. MDEGLE must provide both information and transparency about how its sampling methods are conducted and how an Assessment Unit can be designated with a TMDL based on the assessment of a neighboring or contiguous Assessment Unit.”

***Response 2:** Portions of river systems, lakes, etc. are given Assessment Unit Identifier (AUID) numbers by EGLE for the convenience of discussion (particularly with the USEPA), and the need to identify stream segments that are often unnamed or share a common name (e.g., which Black River?). Per the [2022 Integrated Report](#), Section 3.10 (Assessment Units and Determination of Geographic Extent), Assessment Units may be as large as a 12-digit Hydrologic Unit Code (HUC) or much smaller (a section of a river that is a fraction of a mile), often split due to site-specific information. Because Assessment Units vary in size so widely and because they are often segmented (cut smaller) based on assessment of other unrelated designated uses, EGLE does not require the presence of a monitoring site in each Assessment Unit. To collect data in each Assessment Unit would not be financially or logistically possible, nor would it be advisable since Assessment Units may change in extent with each Integrated Report cycle (for example, HUC 040601010401 may be -01 in one cycle, and then split into -01, -02, -03, and -04 in the next cycle).

Pollution is not limited to the riverine Assessment Unit where the monitoring site is located; therefore, it is reasonable to extrapolate assessment decisions from a nearby site on the same hydrologic path but in a different Assessment Unit (either upstream or downstream), considering the context in terms of land use and population patterns. If the WQS is exceeded both upstream and downstream of a stream segment, then it can reasonably be concluded that the water quality in-between is also not meeting WQS. If the WQS is exceeded upstream of an Assessment Unit, contaminated water from these areas flows downstream into the lower Assessment Unit. For example, the impairment decision for Assessment Unit 040801030103-02 is based on 4 upstream sites, which all exceeded the impairment threshold of 10 percent TBC exceedances. Conversely, if the site is at the base or lower portion of a watershed and the

E. coli levels at that site indicate an impairment, it can be concluded that the *E. coli* contamination is coming from upstream, and the impairment may be extended upstream a reasonable distance if land use and population patterns are similar.

Regarding transparency of monitoring site locations relative to these 57 Assessment Units coded as “Data2,” all *E. coli* monitoring sites used for assessment, along with the extent of the Assessment Units listed in the Addendum, are available for viewing on our interactive mapping system. EGLE staff are also happy to assist in understanding the applicability of a monitoring site to a particular Assessment Unit. The [E. coli Pollution and Solution Mapper](#) is accessible on the [Statewide E. coli TMDL Web site](#), and although the Mapper was hyperlinked to the public comment period advertisement (EGLE’s Environmental Calendar) and also in the e-mail sent to National Pollutant Discharge Elimination System (NPDES) permittees, the commentor correctly points out that the mapper was not referenced in the Addendum itself. In the final version of the 2022 Addendum submitted for USEPA approval, EGLE has added a link to the Mapper.

Regarding transparency of sampling methods, EGLE’s annual bacteria reports contain information on sampling methods, quality control measures, raw data, and data interpretation. These reports are online and accessible through the [E. coli in Surface Waters Web site](#). In response to this comment, EGLE has made it easier to find these reports by adding a hyperlink to the monitoring site information pop-up in the Mapper. The link will open the applicable annual bacteria report in cases where the data was collected by EGLE between the years of 2014-2021.

MFB Comment 3: “Seven more Assessment Units are listed as meeting the 30-day geometric mean standard for *E. coli* per 100 mL of water but exceeding the daily Total Body Contact standards at least once. However, there is no way to verify this information because individual sampling events are not posted or referenced in this Addendum or in the Report. These seven Assessment Units all have very low 30-day geometric means for *E. coli* sampling – 84, 72, 11, 69, 12, 19, and 38 *E. coli* per 100 mL of water.”

Response 3: The commentor incorrectly cites the specific numbers from the Addendum (Column 4) as 30-day geometric means for the referenced Assessment Units. The Addendum table does not show 30-day geometric mean measurements because in some cases there would be many, and the data are available elsewhere (see below). The table shows the number of 30-day geometric means EGLE used for the assessment, and the percent exceedance rate of that WQS. The numbers the commentor cites are from Column 4, which is described in the addendum as the following (relevant emphasis added):

“The geometric mean of **all available *E. coli* data** within the AUID. This value is used for calculating column 5 (percent reduction) for informational purposes only but is not used in evaluating attainment status for assessment purposes. **This number cannot be compared to the daily or 30-day WQS**, since it contains data from more than one day and potentially more than one 30-day period.”

Below is a summary of the data used to list these waters as impaired:

Assessment Unit	Assessment Unit Geometric Mean	Number of Events (n)	% TBC Daily Exceedances	Code
040202030105-04	38	186	11%	Declining WQ
040203000002-02	19	176	5%	Declining WQ
040601011002-01	12	146	3%	Declining WQ
040601050202-01	69	14	14%	Data2
040801040205-03	11	136	5%	Declining WQ
041000020304-01	72	5	20%	
041000030201-02	84	9	22%	

Four of the seven Assessment Units referenced are beaches and are coded as “Declining WQ (Water Quality),” which is explained in the addendum, as follows: “These water bodies, typically beaches, have large datasets where older data show few exceedances of the WQS, but newer data show an impairment according to the most current Assessment Methodology in the Integrated Report.”

The remaining three Assessment Units are rivers listed as impaired due to having 10 percent or more of the daily geometric means exceed the TBC WQS, per the assessment methodology and to protect public health during recreation. The exceedance rate in these three water bodies ranges between 14-22 percent for the daily TBC, meeting the criteria for impairment.

All EGLE *E. coli* monitoring sites, along with the Assessment Units listed in the Addendum, are available for viewing on our interactive [E. coli Pollution and Solution Mapper](#). In response to this comment, a search tool was expanded to allow the user to search by Assessment Unit number, copied and pasted from the Addendum or Integrated Report. A hyperlink to the relevant publicly available annual bacteria monitoring report has also been added, if data are attributed directly to EGLE or its contractors. While the information in the mapper did not change, this feature will allow easier location of Assessment Units and viewing of relevant sites, as well as making it easier for the user to view the report connected with the sampling event. Using the site IDs available from the Mapper, the raw *E. coli* data are available upon request. If samples were collected by EGLE, the data are also publicly accessible directly from the USEPA’s water quality portal and their public facing application, “How’s My Waterway.”

If you have questions after viewing the mapper, or on how to use the mapper, please contact RippkeM@Michigan.gov.

[Comments from Little River Band of Ottawa Indians \(LRBOI\), received March 25, 2022](#)

LRBOI Comment 4: The LRBOI is concerned about the direct combined sewer overflow that continues to occur in Manistee Lake, and appreciates the efforts of the local health department and municipality for continued monitoring of Manistee Lake and the Lake Michigan beaches.

Response 4: EGLE shares your concern regarding raw sewage discharges to Manistee Lake and the Great Lakes. Manistee Wastewater Treatment Plant no longer has authorization to discharge combined sewer overflow and the ongoing discharges containing raw sewage are now considered sanitary sewer overflows (SSO); however, frequent SSOs, which contain

untreated raw sewage, continue to occur. The current permit (issued to the City of Manistee on September 30, 2021) requires them to complete their improvement project to be able to transport and treat all flows to the remedial design standard (25-year/24-hour storm event) contained in EGLE's SSO policy by July 1, 2022. However, because of supply chain issues with the electrical switchgear, the City of Manistee has requested an extension to the construction schedule. The City of Manistee has committed to completing an improvement project by October 1, 2022. The City of Manistee has made significant construction progress despite challenges associated with labor, equipment, and material availability in the post-Covid-19 economy. EGLE will continue to ensure that the Manistee Wastewater Treatment Plant moves toward the goal of eliminating raw sewage discharges to protect public health.

[Comments from New Flevo Dairy Concentrated Animal Feeding Operation \(CAFO\), received March 25, 2022](#)

New Flevo CAFO Comment 5: "We don't agree with the addenda, especially River Raisin Watershed. The addition is not based on science or actual data – "

Response 5: New Flevo Dairy CAFO is in the South Branch River Raisin *E. coli* TMDL, which was approved by the USEPA in 2008, based on data collected in Wolf Creek in 2006. EGLE used *E. coli* data collected in 2020 throughout the River Raisin watershed, paid for via a federal grant and administered by EGLE, to make impairment decisions. These data were collected following an approved quality assurance plan and methodology designed to meet the criteria of 5 minimum sampling events collected 5 times within 30 days. All newly proposed impaired waters met the criteria described in our assessment methodology by exceeding the daily TBC WQS. Other data sets were also considered, including an extensive *E. coli* monitoring project by the City of Adrian conducted in 2019 (unpublished data) as well as smaller datasets collected by a local lake association (the lake association data is not the basis of the impairment decision but is supportive of it).

New Flevo Comment 6: Continued from Comment 5 "but rather EGLE holding one party responsible for an issue that concerns multiple parties. There is no scientific proof that CAFOs are responsible for the issue."

Response 6: This public notice and comment period was intended to address comments on the Addendum, or addition, of water bodies to existing TMDLs. Comments on the TMDL documents are closed because they have already been approved by the USEPA.

New Flevo Comment 7: "Before manure is being applied to a field, we are required to check our Comprehensive Nutrient Management Plan, the weather forecast, EGLE's weather forecast and now we also have to figure out the TMDL for that day? EGLE doesn't even have the accurate data to calculate the value so how do we comply with these regulations?"

Response 7: The data portion of this comment is addressed in Comment 5, above. The goal of the TMDL, for all NPDES permitted facilities, is to meet the WQS that applies during that recreational season (the TBC season between May 1 and October 31, and the partial body contact recreational season the remainder of the year). These goals are concentration-based (equal to the WQS) and do not change daily, outside of the time frames outlined here.

LITERATURE CITED:

USEPA. 2002. Consolidated Assessment and Listing Methodology: Toward a Compendium of Best Practices. Office of Wetlands, Oceans and Watersheds. July 2002.

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