

D

Framework for Reporting and Evaluation

D. Framework for Reporting and Evaluation

This section describes the framework and basic elements for evaluating and reporting the water quality information in this report.

The 2018 Integrated Report (IR) continues Ohio's evolution to a fully-formed watershed basis for reporting on water quality conditions. Since 1988, Ohio has maintained strong linkages between Clean Water Act (CWA) Section 305(b) reporting and Section 303(d) listing. Under the title Water Resource Inventories, Ohio prepares CWA Section 305(b) reports every two years using a biologically based assessment methodology¹. Subsequently, CWA Section 303(d) lists were compiled using the output of CWA Section 305(b) reporting in 1992, 1994, 1996 and 1998. In 2002, the first IR was produced, addressing the needs of both reporting requirements.

Reporting on Ohio's water resources continues to develop, including more data types and more refined methodologies. The basic framework for this report is built on four beneficial uses:

- **Aquatic Life** — Analysis of the condition of aquatic life was the long-standing focus of reporting on water quality in Ohio and continues to provide a strong foundation. The 2018 methodology is unchanged from what was used in the 2016 IR. Additionally, as in the 2012, 2014 and 2016 IRs, a methodology for assessing the aquatic life condition of inland lakes is previewed for possible inclusion in the 2020 report, provided necessary rule revisions to the Ohio Water Quality Standards (WQS) are promulgated.
- **Recreation** — A methodology for using bacteria data to assess recreation suitability was developed for the 2002 report and was refined several times in subsequent reports. Substantial changes to the methodology occurred again in 2018 to accommodate revisions to the recreational WQS approved in 2016 that included changes to the numeric criteria and averaging period; adoption of the Statistical Threshold Value (STV); and collapse of the three classes of primary contact use into a single primary contact recreation (PCR) use. The 2018 methodology also includes an assessment of the Lake Erie western basin open waters based on algae blooms (see Section F 4).
- **Human Health** — A methodology for comparing fish tissue contaminant data to human health criteria via fish consumption advisories was included in the 2004 report. That methodology has been refined in each subsequent report to align more directly with the human health water quality criteria. The methodology was changed in the 2010 report to be consistent with the methodology described in U.S. EPA's 2009 guidance for implementing the methylmercury water quality criterion. The methodology has not changed for the 2018 report.
- **Public Drinking Water** — The assessment methodology for the public drinking water supply (PDWS) beneficial use was first presented in the 2006 report. Updates to the methodology have been presented in subsequent reports. For the 2014 report, it was revised to include a new core indicator based on algae and associated cyanotoxins, and assessment units listed as impaired for algae. The methodology has not changed for the 2018 report.

The methodology for assessing support of each beneficial use is described in more detail in Sections E through H.

¹ In 1990, the linkage of fish and macroinvertebrate community index scores and attainment of aquatic life use designations was established in Ohio's Water Quality Standards (OAC 3745-1).

D1. Assessment Units

The 2018 IR continues the watershed orientation outlined in previous reports; the assessment units have not changed significantly from the 2010 report. Throughout this report, references are made to large rivers and watersheds as assessment units defined for 303(d) listing purposes. Data from individual sampling locations in an assessment unit are accumulated and analyzed; summary information and statewide statistics are provided in this report. The three types of assessment units (AUs) are:

- **Watershed Assessment Units (WAUs)** — 1,538 watersheds that align with the 12-digit hydrologic unit code (HUC) system. Ohio HUC numbers are lowest in the northwest corner of the state, proceeding approximately clockwise around the state. The first two digits of Ohio numbers are either 04 (draining to Lake Erie) or 05 (draining to the Ohio River).
- **Large River Assessment Units (LRAUs)** — 38 segments in the 23 rivers that drain more than 500 square miles; the length of each river included is from the mouth of each river upstream to the point where the drainage area reaches approximately 500 square miles.
- **Lake Erie Assessment Units (LEAUs)** — Seven segments for the entire Ohio portion of Lake Erie. Each of three basins (western, Sandusky, central) are divided into two units (shoreline and open water). The shoreline area is defined as the portion that extends along each basin out to and including a depth of three meters from the shore; the open water is the area in Ohio beyond three meters. The islands shoreline is its own unit and includes the shoreline of each island up to and including a depth of three meters.

Each basin's extent is described as follows:

- western basin shoreline and open water (OH-MI state line to Marblehead);
- Lake Erie islands shoreline (including South Bass Island, Middle Bass Island, North Bass Island, Kelleys Island, West Sister Island and other small islands);
- Sandusky basin shoreline and open water (Marblehead to Lorain Ridge); and
- central basin shoreline and open water (Black River/Lorain Ridge to OH-PA state line).

Ohio River assessment units have been defined by the Ohio River Valley Water Sanitation Commission (ORSANCO). See Section D2 for additional discussion of ORSANCO's work.

It is important to remember that the information presented here is a summary. All the underlying data observations are available and can be used for more detailed analysis of water resource conditions on a more localized, in-depth scale. Much of the information is available in watershed reports available at epa.ohio.gov/dsw/document_index/psdindx.aspx.

Total Maximum Daily Load (TMDL) reports, available at epa.ohio.gov/dsw/tmdl/index.aspx, are another source of more in-depth analyses.

Ohio's large rivers, defined for this report as draining greater than 500 square miles, are illustrated in Figure D-1. Ohio's watershed units are shown in Figure D-2. Lake Erie assessment units are shown in Figure D-3.

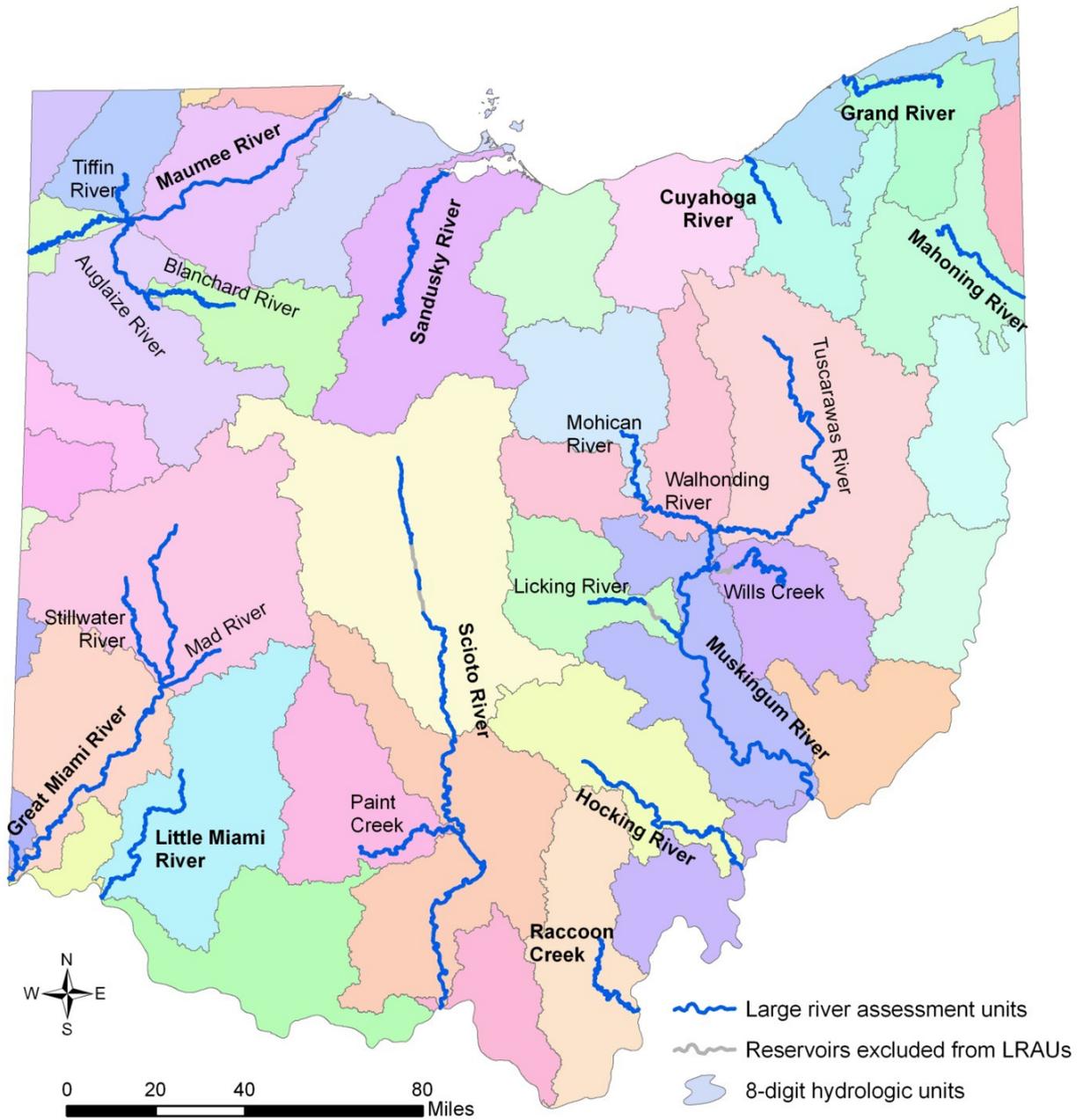
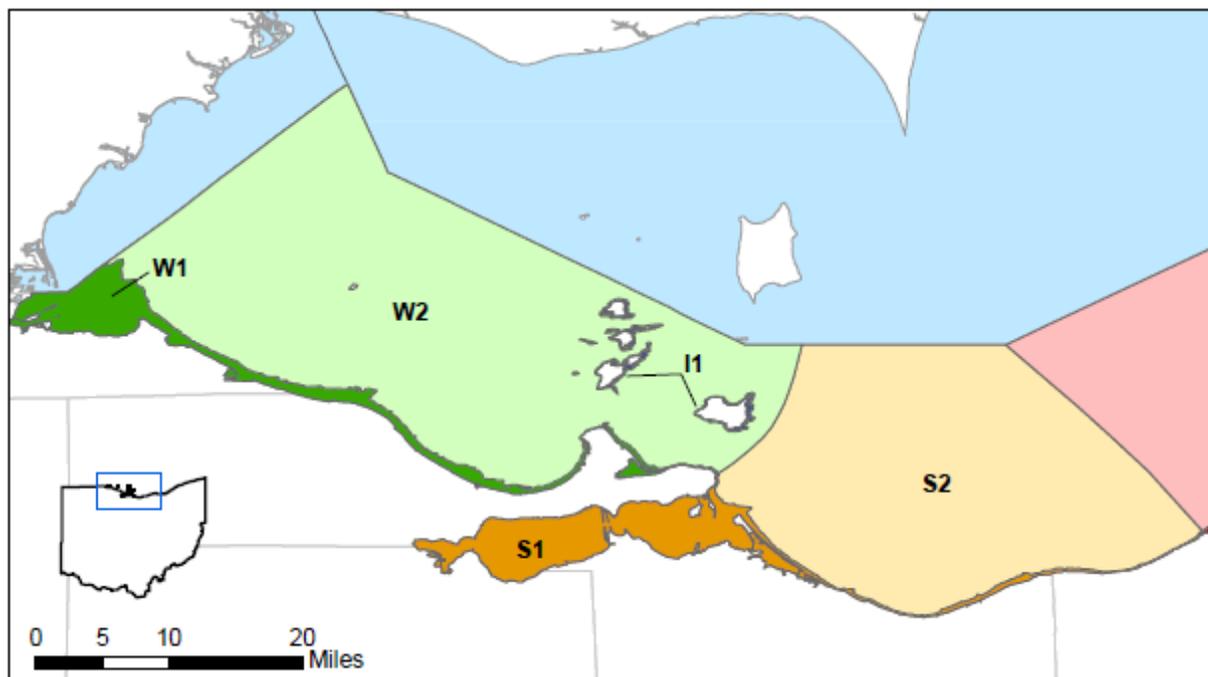


Figure D-1 — Ohio's large rivers (rivers with drainages greater than 500 mi²) and their watersheds.
 Note: Bolded river names indicate the primary mainstem of that drainage basin.



Figure D-2 — Ohio's 12-digit WAUs (gray lines) and 8-digit hydrologic units (heavy black lines).



Lake Erie Assessment Units

-  W1 - Western Basin Shoreline (<=3m)
-  W2 - Western Basin Open Water (>3m)
-  I1 - Islands Shoreline (<=3m)

-  S1 - Sandusky Basin Shoreline (<=3m)
-  S2 - Sandusky Basin Open Water (>3m)
-  C1 - Central Basin Shoreline (<=3m)
-  C2 - Central Basin Open Water (>3m)

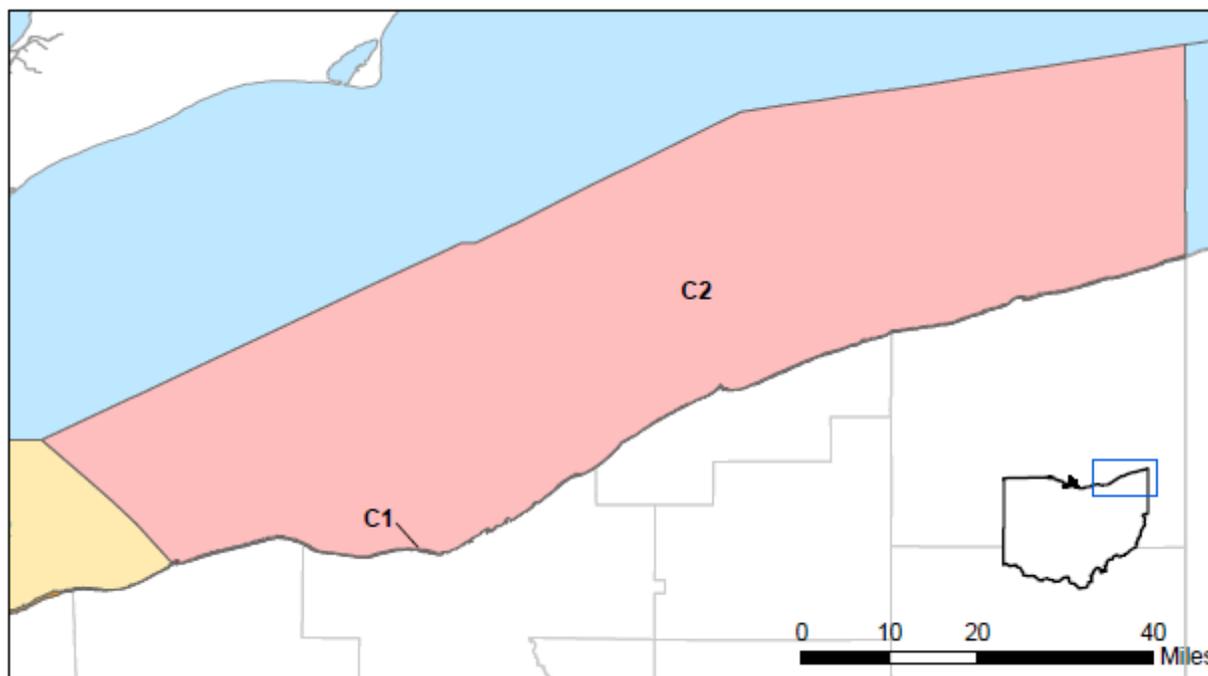


Figure D-3 — Ohio’s Lake Erie assessment units – western basin, islands, Sandusky basin and central basin shorelines and open water areas.

D2. Evaluation of the Ohio River

For evaluation of the Ohio River, Ohio EPA defers to the Ohio River Valley Water Sanitation Commission (ORSANCO). ORSANCO is an interstate commission, established on June 30, 1948, to control and abate pollution in the Ohio River Basin. It represents eight states and the federal government. Member states include Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia and West Virginia. ORSANCO operates programs to improve water quality in the Ohio River and its tributaries including: setting wastewater discharge standards; performing biological assessments; monitoring for the chemical and physical properties of the waterways; and conducting special surveys and studies. ORSANCO also coordinates emergency response activities for spills or accidental discharges to the river and promotes public participation in the programs such as the Ohio River Sweep, River Watchers Volunteer Monitoring Program and Friends of the Ohio.

Since 1948, ORSANCO and its member states have cooperated to improve water quality in the Ohio River Basin so that the river and its tributaries can be used for drinking water, industrial supplies and recreational purposes; and can support healthy and diverse aquatic communities. ORSANCO operates monitoring programs to check for pollutants and toxins that may interfere with specific uses of the river and conducts special studies to address emerging water quality issues.

As a member of the Commission, the State of Ohio supports ORSANCO activities, including monitoring of the Ohio River mainstem, by providing funding based on state population and miles of Ohio River shoreline. As such, monitoring activities on the Ohio River are coordinated and conducted by ORSANCO staff or its contractors. More information about ORSANCO and the Ohio River monitoring activities conducted through that organization can be found online at orsanco.org.

Ohio EPA participates in an ORSANCO workgroup to promote consistency in 305(b) reporting and 303(d) listing. The workgroup discussed and agreed upon methods to evaluate attainment/non-attainment of aquatic life, recreation and public water supply uses, as well as impairments based on sport fish consumption advisories. ORSANCO prepares the Section 305(b) report for the Ohio River and has indicated the impaired beneficial uses and segments of the Ohio River. Ohio EPA defers to the ORSANCO analysis and the list of impaired Ohio River segments found in 2016 Biennial Assessment of Ohio River Water Quality Conditions (ORSANCO 2016). ORSANCO plans to complete a biennial assessment in 2018 and will be available at: orsanco.org/biennial-assessment-of-ohio-river-water-quality-conditions-305b.

D3. Evaluation of Lake Erie

Lake Erie is bordered by four states and one Canadian province. As such, it has federal oversight by two sovereign nations. Unlike most other waters in Ohio, Lake Erie has a more complicated governance structure with a binational agreement (GLWQA) between the U.S. and Canada providing a framework to identify binational priorities and implement actions that improve water quality. For comparison, assessment and reporting on one of Ohio's other multi-state waters, the Ohio River, is conducted by ORSANCO, which, as stated above, is an interstate commission representing eight states and the federal government.

Ohio's assessment and impairment designation for Lake Erie has been the focus of considerable discussion between Ohio EPA, U.S. EPA and local stakeholders. Ohio's position has been that since the open waters of Lake Erie are multi-jurisdictional and multi-national, that U.S. EPA should take the lead on setting targets and assessment methods for all parties to use. Since there has been no progress in establishing federal targets for the lake, Ohio has proceeded, with the considerable aid of several universities and NOAA, to

develop a method for assessing the western basin open waters in Ohio for algae blooms. This methodology is presented in Section F4 and utilizes the revised assessment units defined in Section D1.

As in the 2016 report, the shoreline units have been assessed for all four beneficial uses using the already established methods, and all but the central basin shoreline is listed as impaired for all four uses (the central basin shoreline is not impaired for public water supply since the intakes are located in the open water assessment unit). See Sections E through H for more information on each use assessment.

D4. Ohio's Water Quality Standards Use Designations

Beneficial use designations describe existing or potential uses of water bodies. They take into consideration the use and value of water for public water supplies, protection and propagation of aquatic life, recreation in and on the water, agricultural, industrial and other purposes. Ohio EPA assigns beneficial use designations to water bodies in the state. There may be more than one use designation assigned to a water body. Examples of beneficial use designations include: public water supply, primary contact recreation and numerous sub-categories of aquatic life use. Table D-1 lists all of Ohio's water quality standards (WQS) designated uses and outlines how the use was evaluated for the Ohio 2018 IR. Additional information is included in Section F4 about the WQS and uses evaluated for the western basin of Lake Erie related to algae.

Table D-1 — Ohio water quality standards in the 2018 IR.

Beneficial Use Category	Key Attributes ²	Evaluation status in the 2018 IR
Categories for the protection of aquatic life		
Coldwater habitat (CWH)	native cold water or cool water species; put-and-take trout stocking	Assessed on case by case basis
Seasonal salmonid habitat (SSH)	supports lake run steelhead trout fisheries	No direct assessment, streams assessed as EWH or WWH
Exceptional warmwater habitat (EWH)	unique and diverse assemblage of fish and invertebrates	65.5 percent of the WAUs and 99.7 percent of the LRAUs fully assessed using direct comparisons of fish and macroinvertebrate community index scores to the biocriteria in Ohio's WQS; sources and causes of impairment were assessed using biological indicators and water chemistry data.
Warmwater habitat (WWH)	typical assemblages of fish and invertebrates	
Modified warmwater habitat	tolerant assemblages of fish and macroinvertebrates; irretrievable condition precludes WWH	
Limited resource water	fish and macroinvertebrates severely limited by physical habitat or other irretrievable condition	Assessed on case by case basis
Categories for the protection of human health		
Human health [fish consumption]	all waters outside mixing zones	43 percent of the WAUs, 100 percent of the LRAUs assessed and all four Lake Erie shoreline AUs assessed using applicable water quality criteria
Categories for the protection of recreational activities		
Bathing Waters	Lake Erie (entire lake); for inland waters, bathing beach with lifeguard or bathhouse facility	All four Lake Erie shoreline AUs fully assessed based on analysis of data collected from 65 public beaches
Primary Contact Recreation (PCR)	waters suitable for one or more full-body contact recreation activity such as wading and swimming; three classes are recognized, distinguished by relative potential frequency of use	11 percent of the WAUs and 26 percent of the LRAUs assessed using applicable PCR geometric mean E. coli criteria
Secondary Contact Recreation (SCR)	waters rarely used for recreation because of limited access; typically located in remote areas and of very shallow depth	Assessed as part of the WAU using applicable SCR geometric mean E. coli criteria
Categories for the protection of water supplies		
Public Water Supply	waters within 500 yards of all public water supply surface water intakes, publicly-owned lakes, waters used as emergency supplies	Sufficient data were available to assess 50 percent of the 119 AUs with PDWS use; assessed using chemical water quality data; only waters with active intakes were assessed
Agricultural Water Supply	water used, or potentially used, for livestock watering and/or irrigation	Not assessed
Industrial Water Supply	water used for industrial purposes	Not assessed

D5. Sources of Existing and Readily Available Data

For two decades Ohio EPA has placed a high priority on collecting data to accurately measure the quality of Ohio's rivers and streams. Therefore, the Agency has a great deal of information and data to draw upon for the IR. The available data sets from Ohio EPA and external sources, including efforts used to obtain

² Reasons for which a water body would be designated in the category.

additional data, are also discussed below. The 2008 IR marked the first time that Ohio's credible data law was fully implemented in generating external data for consideration.

The credible data law, enacted in 2003 (ORC 6111.50 to 6111.56), requires that the director of Ohio EPA adopt rules which would, among other things, do the following:

- establish a water quality monitoring program for the purpose of collecting credible data under the act; require qualified data collectors to follow plans pertaining to data collection; and require the submission of a certification that the data were collected in accordance with such a plan; and
- establish and maintain a computerized database or databases of all credible data in the director's possession and require each state agency in possession of surface water quality data to submit that data to the director.

Ohio EPA adopted rules in 2006, which were revised in 2011 and 2018, to establish criteria for three levels of credible data for surface water quality monitoring and assessment and to establish the necessary training and experience for persons to submit credible data. Apart from a few exceptions, people collecting data and submitting it to Ohio EPA for consideration as credible data must have status as a qualified data collector (QDC). Only Level 3 data can be used for decisions about beneficial use assignment and attainment; water quality standards; listing and delisting (303(d) list); and TMDL calculations.

Ohio EPA solicited data from all Level 3 QDCs for the 2018 IR. The letter requesting data and the website containing information about how to submit data are included in Section D6.1. Table D-2 summarizes the WQS uses evaluated in the 2018 IR, the basic types of data used, the period of record considered, the sources of data and the minimum amount of data needed to evaluate a water body. Specific methodologies used to assess attainment of the standards are described in more detail in Sections E through H.

Table D-3 summarizes the data Ohio EPA used in the 2018 IR. Ohio EPA's 2018 IR uses fish contaminant data to determine impairment using the human health-based water quality criteria. Fish consumption advisories (FCAs) were not used in determining impairment status. However, the public should use the FCAs in determining the safety of consuming Ohio's sport fish.

The evaluation of bacteria, biological and water quality survey data was not changed from the approach used in the 2010 IR. Data collected by Ohio EPA and Level 3 QDCs were evaluated. The following QDCs and state and federal environmental agencies that are excepted from the QDC requirement submitted data or the data were available from readily obtained reports:

- Ohio Department of Natural Resources
- U.S. Geological Survey
- Northeast Ohio Regional Sewer District
- Midwest Biodiversity Institute/Center for Applied Bioassessment and Biocriteria
- Heidelberg College
- The Ohio State University
- Ohio Department of Health
- Cuyahoga County Board of Health
- EnviroScience, Inc.
- EA Science and Technology, Inc.
- Cleveland Metroparks
- Clermont County Office of Environmental Quality
- Ohio University Voinovich School
- MAD Scientist

Additional information about data available for Lake Erie related to algae is included in Section F4.

Table D-2 — Data types used in the 2018 IR.

WQS Uses and Criteria Evaluated (basic rationale ³)	Type of Data Time Period	Source(s) of Data	Minimum Data Requirement
Human health, single route exposure via food chain accumulation and eating sport fish (criteria apply to all waters of the State)	Fish Tissue Contaminant Data 2007 to 2016	Fish Tissue Contaminant Database	Data collected within past 10 years ⁴ . Two samples, each from trophic levels 3 and 4 in each WAU or inland lake.
Recreation uses - evaluation based on a comparison of E. coli levels to applicable geometric mean and STV E. coli criteria in the WQS.	E. coli counts 2013 to 2017 (May through October only)	Ohio Dept of Health Cuyahoga County Health Department Northeast Ohio Regional Sewer District (NEORS D)	Five or more E. coli samples collected within a 90-day period; at least one site per AU; data period 2013-2017
Aquatic life (specific sub-categories), fish and macroinvertebrate community index scores compared to biocriteria in WQS [OAC 3745-1-07(C) and Table 7-1]	Watershed scale biological and water quality surveys and other more targeted monitoring 2005 to 2016	ODNR U.S. Geological Survey NEORS D Midwest Biodiversity Institute Heidelberg College Ohio State University EnviroScience, Inc.	Fish and/or macroinvertebrate samples collected using methods cited in WQS [OAC 3745-1-03(A)(5)]. Generally, two to three locations sampled per WAU (12-digit HUC).
Public drinking water supply (criteria apply within 500 yards of active drinking water intakes, all publicly owned lakes, and all emergency water supplies)	Chemical water quality data 2010 to 2017	SDWIS (PWS compliance database) Syngenta Crop Protection, Inc. (Atrazine Monitoring Program) ⁵	Data collected within past five years. Minimum of 10 samples with a few exceptions (noted in Section H).

³ Additional explanation is provided in the text of Section D2.

⁴ Data more than 5 years old are historical data. The rules provide that "Credible data may include historical data if the director identifies compelling reasons as to why the data are credible." ORC 6111.51(D) also says: "If the director has obtained credible data for a surface water, the director also may use historical data for the purpose of determining whether any water quality trends exist for that surface water."

⁵ These data were collected as part of an intensive monitoring program at community water systems required by the January 2003 Atrazine Interim Reregistration Eligibility Decision and subsequent Memorandum of Agreement between U.S. EPA and the atrazine registrants (including Syngenta Crop Protection, Inc.).

Table D-3 — Description of data used in the 2018 IR from sources other than Ohio EPA.

Entity	Dates data were collected	Data description	Basis of qualification ⁶
NPDES permittees	2013 – 2017 (May – Oct only)	Bacteria	Data credible – submittal pursuant to permit
Ohio Department of Health (ODH)	2013 – 2017 (May – Oct only)	Bacteria	State agency
Cuyahoga County Health Department	2013 – 2017 (May – Oct only)	Bacteria	Level 3 qualified data collector (under ODH's study plan)
Northeast Ohio Regional Sewer District	2013 – 2017 (May – Oct only)	Bacteria	Level 3 qualified data collector
	Jul 2006 – Oct 2016	Physical habitat	
	Jun 2006 – Oct 2016	Biology	
	Apr 2006 – Oct 2016	Chemistry	
	2008	Fish tissue	
Ohio Department of Natural Resources	Apr 2006 – Nov 2016	Fish tissue	State agency/Level 3 qualified data collector
	Sep 2006 – Oct 2016	Biology (fish only)	
	Jun – Oct 2016	Physical habitat	
PWS compliance database (permittees)	Jan 2012 – Oct 2017	Chemistry	Data credible – submittal pursuant to permit
Syngenta Corp Protection, Inc.	Jan 2012 – Dec 2017	Chemistry	See footnote ⁷
The Ohio State University	May – Oct 2006	Biology (macroinvertebrates only)	Level 3 qualified data collector
Midwest Biodiversity Institute	Jul 2010 – Oct 2016	Biology	Level 3 qualified data collector
		Physical habitat	
		Chemistry	
Enviroscience, Inc.	Sep – Nov 2011	Biology	Level 3 qualified data collector
		Physical habitat	
Ohio Department of Transportation	Jun 2007 – Oct 2010	Biology (fish only)	State agency/Level 3 qualified data collector
		Physical habitat	
Heidelberg College	Jun 2012 – Oct 2012	Biology (macroinvertebrates only)	Level 3 qualified data collector
EA Science and Technology, Inc.	Jul 2014 – Oct 2014	Biology	Level 3 qualified data collector
Cleveland Metroparks	Jun 2012 – Sep 2014	Biology (fish only)	Level 3 qualified data collector
Clermont County Office of Environmental Quality	May 2009 – Sep 2016	Chemistry	Level 3 qualified data collector
Ohio University – Voinovich School	Jun 2016 – Sep 2017	Biology (fish only)	Level 3 qualified data collector
		Physical Habitat	
		Chemistry	
MAD Scientist, Inc	Jun 2016 – Sep 2016	Biology (fish only)	Level 3 qualified data collector

⁶ Level 3 Qualified Data Collector requirements are described in OAC Rule 3745-4-03(A)(4). Included above are Qualified Data Collectors Ohio EPA has approved for stream habitat assessment, fish community biology, benthic macroinvertebrate biology and/or chemical water quality assessment.

⁷ These data were collected as part of an intensive monitoring program at community water systems required by the Jan 2003 Atrazine Interim Reregistration Eligibility Decision and subsequent Memorandum of Agreement between U.S. EPA and the atrazine registrants (including Syngenta Crop Production, Inc.).

D6. Public Involvement in Compiling Ohio's Section 303(d) List of Impaired Waters

The public was involved in various ways in the development of the 2018 IR. Several means of public communication are discussed below.

Much of the data used in this report have been presented to the public in meetings and publications concerning individual watersheds. Data and assessments have also been available in previous 305(b), 303(d) and IRs. All this information can be accessed from the following website:

epa.ohio.gov/dsw/formspubs.aspx.

The draft 2018 303(d) list, contained in the draft 2018 IR, will be also available for public review and comment prior to submitting the final list and report to U.S. EPA.

D6.1 Solicitation for External Water Quality Data, 2018 IR Project (May 23, 2017)

A memorandum soliciting level 3 qualified data was emailed to all Level 3 qualified data collectors on May 23, 2017. The memorandum is displayed below.

Date	May 23, 2017
Re	Solicitation of Water Quality Data, 2018 Integrated Report <i>(No action is required on your part - submission of data is voluntary)</i>
To	Interested Parties: Stream Monitoring Personnel
From	Tiffani Kavalec, Chief Division of Surface Water

Ohio EPA is asking for chemical, biological and/or physical habitat data you may wish to submit for consideration as the Agency prepares its 2018 Integrated Water Quality Monitoring and Assessment Report, commonly referred to as the Integrated Report. Both state and federal governments have an interest in utilizing all available data to make informed decisions about managing Ohio's aquatic resources; however, Ohio EPA is only able to use data from a limited number of external sources, including Level 3 certified data collectors and National Pollutant Discharge Elimination Systems (NPDES) discharge permit holders¹.

At this time, Ohio EPA's Division of Surface Water (DSW) is soliciting readily available data for use in the 2018 Integrated Report. This document fulfills the State's reporting obligations under Sections 305(b) and 303(d) of the Clean Water Act. Information is available at <http://www.epa.ohio.gov/dsw/tmdl/OhioIntegratedReport.aspx>.

Credible Data Law
Credible Data rules ([OAC 3745-4-01 to 06](#)), developed in accordance with the 2003 credible data law ([ORC 6111.50 to 6111.56](#)), established a water quality monitoring program for the purpose of collecting credible data under the act and required qualified data collectors to follow plans pertaining to data collection. The law further required that collectors submit a certification that the data were collected in accordance with such a plan. Furthermore, as required by the law, a computerized database was developed to track and maintain all credible data in the director's possession.

Additionally, the law established that external data found to be compliant with the specifications for "level 3 credible data," which generally means data from a level 3 qualified data collector, can be used for certain regulatory and reporting purposes, such as the Section 303(d) list of Ohio's impaired waters.

According to Ohio EPA's administrative rules, you may meet the qualifications of a "Level 3 Qualified Data Collector" in one or more areas of water quality data. Therefore, in pursuit of all readily available data for use in the state's reporting documents, the Agency is requesting your voluntary participation by submitting any recent water quality data that you have on Ohio's waters (e.g., lakes, rivers, streams and wetlands) that you are qualified to collect. Data submission deadlines are dependent on the type of data and are as follows:

- **Biological, physical habitat and chemical = July 15, 2017**
- **Bacteria = September 15, 2017**

More information about the specific types of data being requested by Ohio EPA, and how to submit such data, can be found at: <http://www.epa.ohio.gov/dsw/tmdl/2018IntReport/2018CallForData.aspx>

¹ It is unnecessary to resubmit data that have already been submitted to the Division of Surface Water.

D6.1.1 **Web Page with Instructions for Submitting Level 3 Credible Data**

For organizations interested in submitting data to Ohio EPA, a web page was established with instructions on what qualified data to be submitted and how to do so. The website content is displayed below.

2018 Integrated Water Quality Monitoring and Assessment Report - Call for Level 3 Credible Data

Information about submitting Level 3 credible data to Ohio EPA is organized as outlined below. More information about the Integrated Report is on the [Ohio Integrated Water Quality Monitoring and Assessment Report page](#).

- What kind of data does Ohio EPA want?
 - Microbiological Data
 - Biological and Physical Data
 - Chemical Water Quality Data
- Do I have Level 3 data?
- Have I already given Ohio EPA my data?
- What will be needed in addition to data?
 - Microbiological Data Requirements
 - Biological, Chemical and Physical Data Requirements
- How do I send the data?
- To whom do I send the data?

To access the information, click on the relevant link below.

What kind of data does Ohio EPA want?

Ohio EPA is asking for biological, physical habitat and/or chemical data you may wish to submit for consideration as the Agency prepares its 2018 Integrated Report. Both the state and federal governments have an interest in utilizing all available data to make informed decisions about managing Ohio's aquatic resources. Ohio EPA is soliciting data primarily from NPDES major permit holders, level 3 qualified data collectors and others that may be in possession of level 3 credible data. The data can be of various types (bacteria, biological, physical and chemical water quality data) and must have been collected during the following time frames:

- Bacteria = 2016 – 2017 (recreation season)
- Biological, physical habitat, and chemical = 2015 – 2016

Microbiological Data

Ohio EPA measures recreation use attainment by comparing the level of indicator bacteria present in ambient water samples against the bacteria criteria contained in [rule 3745-1-37 of Ohio's water quality standards](#).

These indicator bacteria serve as predictors for the possible presence of enteric pathogens in the water that can cause a variety of illnesses. The type of indicator bacteria that Ohio EPA is utilizing in the 2018 Integrated Report is **E. coli**.

Data collected by NPDES discharge permit holders at ambient stream sites upstream and downstream of discharge locations and reported in discharge monitoring reports will be extracted from the SWIMS database. **It is unnecessary to resubmit data already submitted into SWIMS.** However, if bacteria data were collected at additional ambient stations and not reported through SWIMS, permit holders may voluntarily submit this data to the Agency. Data must have been collected between May 1, 2016, and September 15, 2017, and must meet the basic terms of acceptability found in the requirements listed below.

Biological and Physical Habitat Data

Ohio EPA measures aquatic life use attainment in Ohio streams and rivers by comparing indices generated from fish and aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality

standards, [OAC 3745-1-07, Table 7-1](#). Field collection and data analysis methodologies for fish and macroinvertebrate community assessments are strictly adhered to and must follow procedures as outlined in documents available from Ohio EPA's [biological criteria website](#). Physical habitat data should be in the form of the Qualitative Habitat Evaluation Index (QHEI) and must be submitted if fish community data are being submitted. QHEI procedure manuals and forms can also be found at the above website location.

Chemical water quality data collected in conjunction with biological data is of interest to Ohio EPA. Data should follow the parameters discussed below.

Chemical Water Quality Data

Ohio EPA primarily uses sampling methods described in the 2015 "[Surface Water Field Sampling Manual](#)." Sample collection and analysis method references are listed in paragraph (C) of [OAC 3745-4-06](#). Ohio EPA is interested in other chemical water quality data collected and analyzed by these methods or others of similar quality control/quality assurance rigor.

Do I have Level 3 data?

Credible Data rules ([OAC 3745-4-01 to 06](#)), developed in accordance with the 2003 credible data law ([ORC 6111.50 to 6111.56](#)), established a water quality monitoring program for the purpose of collecting credible data under the act and required qualified data collectors to follow plans pertaining to data collection. The law further required that collectors submit a certification that the data were collected in accordance with such a plan. Furthermore, as required by the law, a computerized database was developed to track and maintain all credible data in the director's possession.

Additionally, the law established that external data found to be compliant with the specifications for "level 3 credible data," which generally means data from a level 3 qualified data collector, can be used for certain regulatory and reporting purposes, such as the Section 303(d) list of Ohio's impaired waters.

If you have collected data following these procedures, then you may have level 3 credible data eligible for inclusion in the Integrated Report

Have I already given Ohio EPA my data?

External data Ohio EPA has received and may use for 305(b)/303(d) reporting:

Entity	Dates data were collected	Data description	Basis of qualification ¹
NPDES permittees	2013 – 2017 (May – Oct only)	Bacteria	Data credible – submittal pursuant to permit
Ohio Department of Health (ODH)	2013 – 2017 (May – Oct only)	Bacteria	State agency
Cuyahoga County Health Department	2013 – 2017 (May – Oct only)	Bacteria	Level 3 qualified data collector (under ODH's study plan)
Northeast Ohio Regional Sewer District	2013 – 2017 (May – Oct only)	Bacteria	Level 3 qualified data collector
	Jul 2006 – Oct 2016	Physical habitat	
	Jun 2006 – Oct 2016	Biology	
	Apr 2006 – Oct 2016	Chemistry	
	2008	Fish tissue	
Ohio Department of Natural Resources	Apr 2006 – Nov 2016	Fish tissue	State agency/Level 3 qualified data collector
	Sep 2006 – Sep 2014	Biology (fish only)	
	Jun – Oct 2016	Physical habitat	

PWS compliance database (permittees)	Jan 2010 – Dec 2015	Chemistry	Data credible – submittal pursuant to permit
Syngenta Corp Protection, Inc.	Jan 2010 – Dec 2015	Chemistry	See footnote2
The Ohio State University	May – Oct 2006	Biology (macroinvertebrates only)	Level 3 qualified data collector
Midwest Biodiversity Institute	Jul 2010 – Oct 2016	Biology	Level 3 qualified data collector
		Physical habitat	
		Chemistry	
Enviroscience, Inc.	Sep – Nov 2011	Biology	Level 3 qualified data collector
		Physical habitat	
Ohio Department of Transportation	Jun 2007 – Oct 2010	Biology (fish only)	State agency/Level 3 qualified data collector
		Physical habitat	
Heidelberg College	Jun 2012 – Oct 2012	Biology (macroinvertebrates only)	Level 3 qualified data collector
EA Science and Technology, Inc.	Jul 2014 – Oct 2014	Biology	Level 3 qualified data collector
Cleveland Metroparks	Jun 2012 – Sep 2014	Biology (fish only)	Level 3 qualified data collector
Clermont County Office of Environmental Quality	May 2009 – Sep 2016	Chemistry (drinking water)	Level 3 qualified data collector

1 Level 3 Qualified Data Collector requirements are described in OAC Rule 3745-4-03(A)(4). Included above are Qualified Data Collectors Ohio EPA has approved for stream habitat assessment, fish community biology, benthic macroinvertebrate biology and/or chemical water quality assessment.

2 These data were collected as part of an intensive monitoring program at community water systems required by the Jan 2003 Atrazine Interim Reregistration Eligibility Decision and subsequent Memorandum of Agreement between U.S. EPA and the atrazine registrants (including Syngenta Crop Production, Inc.).

What will be needed in addition to data?

Specific guidelines for submission of data are listed below. While these guidelines correspond to the regulations regarding credible data, they are not verbatim. To see the regulations, please go to OAC 3745-4-06.

Microbiological Data Requirements

Specific guidelines for submission of data are listed below. While these guidelines correspond to the regulations regarding credible data, they are not verbatim. To see the regulations, please go to [OAC 3745-4-06](#).

Microbiological Data Requirements

- An individual or organization that submits bacteria data to Ohio EPA for consideration in the 2018 Integrated Report shall attest to the validity of the data and adhere to the data quality specification listed here. The submission of data must cover the following:
- Sampling and test methods, QA/QC specifications: Sampling must be conducted in a manner consistent with procedures contained in Standard Methods for the Examination of Water and Wastewater or the 2015 “[Surface Water Field Sampling Manual](#).”
- Analytical testing must be conducted in accordance with U.S. EPA approved methods under [40 CFR 136.3](#). Acceptable references for methods for qualified data collectors are given in [paragraph \(C\) of OAC 3745-4-06](#) and include Ohio EPA references, U.S. EPA references and Standard Methods. Data submissions must include a description of the Quality Assurance/Quality Control (QA/QC) plans

under which the bacteria sample analysis occurred. This should address topics such as sample handling and preservation, sample holding time, chain of custody, precision, accuracy, etc.

- Description of Sampling Program: A brief description of the purpose of data collection and the sampling design considerations should be provided. Were specific sources of potential contamination under investigation? Were samples collected at fixed station locations? How often and under what kinds of environmental conditions were samples collected? Have the results been published in a report or the scientific literature?
- Minimum Data Submission: Ohio EPA is requesting only bacteria data (E. coli) collected during the recreation season (May 1st to October 31st) for 2016 and (May 1st to September 15th) for 2017. The following information must be included in the data submission in an electronic spreadsheet or database format:
 - Sample collection date
 - Sample collection method (with reference)
 - Sample site location including waterbody name, county, river mile (if known), latitude/longitude (decimal degrees or degrees, minutes, and seconds)
 - E. coli count
 - Identification of units associated with bacteria counts
 - Any applicable data qualifiers (as received from the lab, if applicable)
 - Contact name, address, telephone number and email address of the person submitting the data set
 - Identification of the laboratory performing the sample analysis.
 - Biological, Chemical and Physical Habitat Data Requirements
 - An individual or organization who submits biological, chemical and/or physical habitat data to Ohio EPA for consideration in the 2018 Integrated Report shall attest to the validity of the data and adhere to the data quality specifications listed here. The submission of data must cover the following:
 - Analytical and sampling procedures (examples):
 - [Surface Water Field Sampling Manual](#)
 - [Habitat and biology sampling manuals](#)
 - Only data that are consistent with these guidelines can be considered Level 3 data.
 - Description of Sampling Program: A brief description of the purpose of data collection and the sampling design considerations should be provided. Were specific sources of potential contamination under investigation? Were samples collected at fixed station locations? How often and under what kinds of environmental conditions were samples collected? Have the results been published in a report or the scientific literature?
 - If the data have been or will be submitted as part of the Credible Data Program and there is an approved project study plan, this requirement is potentially waived, pending a successful data review that confirms study plan was adhered to as written.
 - Minimum Data Submission: Ohio EPA is requesting biological, chemical and physical habitat data collected from 2015-2016. The following information must be included in the data submission in an electronic spreadsheet or database format:
 - Sample collection date
 - Sample collection method (with reference)
 - Sample site location including waterbody name, county, river mile (if known), latitude/longitude (decimal degrees or degrees, minutes and seconds)
 - Type of data collected (fish, macroinvertebrate, chemical and physical parameters)
 - Analytical and collection methodologies used (include references)
 - Any applicable data qualifiers (as received from the lab, if applicable)
 - Contact name, address, telephone number, and email address of the person submitting the data set
 - Identification of the laboratory performing the sample analysis (if applicable)
 - Weather conditions, flow and precipitation (all optional)

How do I send the data?

If you have bacteria data collected from surface waters in Ohio, Ohio EPA would be interested in discussing its possible use in the Integrated Report. **Contact Chris Skalski at (614) 644-2144 or chris.skalski@epa.ohio.gov before preparing and submitting any information.**

The Agency’s capacity to accept and utilize the data in preparation of the Integrated Report is dependent upon a variety of factors and the use of all data brought to our attention may not be possible. Data must have been collected after May 1, 2016, and must meet the basic acceptability specifications listed above. Data must be provided in electronic format such as STORET, Excel or Access.

Ohio EPA already has data from some credible data collectors, as listed in the table above. Additional data may be available and Ohio EPA is soliciting these data. If you have biological, chemical or physical habitat data collected from surface waters in Ohio, Ohio EPA would be interested in discussing its possible use in the Integrated Report. **Contact Jeff DeShon at (614) 836-8780 or jeffrey.deshon@epa.ohio.gov before preparing and submitting any information.** The Agency’s capacity to accept and utilize the data in preparation of the Integrated Report is dependent upon a variety of factors and the use of all data brought to our attention may not be possible. Data must have been collected after January 1 2015, and must meet the basic acceptability specifications listed above. Data must be provided in an electronic format such as STORET, Excel or Access.

To whom do I send the data?

Submit microbiological data and supporting information listed above by September 15, 2017 to Chris Skalski, chris.skalski@epa.ohio.gov, Ohio EPA/DSW, P.O. Box 1049, Columbus, Ohio 43216-1049.

Submit biological, physical, and chemical water quality data and supporting information listed above by July 15, 2017, to Jeff DeShon, jeffrey.deshon@epa.ohio.gov, Ohio EPA/Groveport Field Office, 4675 Homer-Ohio Lane, Groveport, Ohio 43125.

D6.2 Web Page Announcing 2018 Integrated Report Preparation

As shown below, Ohio EPA announced the preparation and anticipated schedule⁸ of the 2018 Integrated Report on its website (epa.ohio.gov/dsw/tmdl/OhioIntegratedReport.aspx).

Preparation of 2018 Integrated Report is Underway

Ohio EPA is preparing the 2018 Integrated Report, which fulfills the State’s reporting obligations under [Section 305\(b\) \(33 U.S.C. 1315\)](#) and [Section 303\(d\) \(33 U.S.C. 1313\)](#) of the Federal Clean Water Act. The report will indicate the general condition of Ohio’s waters and list those waters that are currently impaired and may require [Total Maximum Daily Load \(TMDL\)](#) development in order to meet water quality standards.

When will the report be completed?

Major project milestones and expected dates for completion are:

Refine methodologies / compile data	June - October 2017
External level 3 credible data are due to Ohio EPA	July 15, 2017 (bio/physical/chem); Sept 15, 2017 (bacteria)
Prepare list / internal review	October - December 2017
Public notice draft 303(d) list	December 2017 – January 2018
Respond to comments / prepare final list	February - March 2018
Submit to U.S. EPA Region V for approval	April 1, 2018

Please continue to check this Web site for updates.

Call for Level 3 Credible Data

Information regarding level 3 credible data submission can be found at the following [webpage](#).



⁸ Due to a variety of factors, the 2018 Integrated Report did not follow the originally anticipated schedule.

D6.3 Notice of Availability and Request for Comments CWA Section 303(d) TMDL Priority List for 2018

Public Notice Date: March 22, 2018

OHIO ENVIRONMENTAL PROTECTION AGENCY PUBLIC NOTICE

NOTICE OF AVAILABILITY and REQUEST FOR COMMENTS Federal Water Pollution Control Act Section 303(d) TMDL PRIORITY LIST FOR 2018

Public notice is hereby given that the Ohio Environmental Protection Agency (Ohio EPA) Division of Surface Water (DSW) is providing for public review and comment the *2018 Integrated Water Quality Monitoring and Assessment Report*. This report includes the Total Maximum Daily Load (TMDL) priority list for 2018 as required by Section 303(d) of the Federal Water Pollution Control Act (a.k.a., Clean Water Act), 33 U.S.C. Section 1313(d). The list indicates the waters of Ohio that are currently impaired and may require TMDL development in order to meet water quality standards. The list is contained within Section L4, which, in accordance with federal guidance, satisfies the Clean Water Act requirements for both Section 305(b) water quality reports and Section 303(d) lists. The report describes the procedures that Ohio EPA used to develop the list and indicates which areas have been selected for TMDL development during federal fiscal years 2018 through 2020.

Ohio EPA will present information about the list through a webinar on April 25, 2018, at 2:00 pm. The webinar may be viewed at Ohio EPA's Central Office, Conference Room A, 50 West Town Street, Suite 700, Columbus, Ohio 43215 or by registering and joining online at: <https://ohioepa.webex.com/mw3200/mywebex/default.do?siteurl=ohioepa>. All visitors to Ohio EPA must register at the Security desk in the lobby upon arrival. Please bring photo identification (such as a valid driver's license). For security reasons, visitors are required to wear their badge at all times while in the building. Please arrive early to complete these procedures.

All interested persons wishing to submit comments on the list for Ohio EPA's consideration may do so by email to EPATMDL@epa.ohio.gov or in writing to Ohio EPA, Division of Surface Water, P.O. Box 1049, Columbus, Ohio 43216-1049 Attn: 303(d) Comments, by the close of business, May 4, 2018. Comments received after this date may be considered as time and circumstances allow.

After reviewing the comments, Ohio EPA will submit a final document to the United States Environmental Protection Agency (U.S. EPA) for approval.

The report is available for review on Ohio EPA's Division of Surface Water website at <http://epa.ohio.gov/dsw/tmdl/OhioIntegratedReport.aspx>. To arrange to inspect Agency files or records pertaining to the document, please contact Richard Boudier at (614) 644-2782. To request notice of when Ohio EPA submits the document to U.S. EPA, please contact the e-mail address above or call Rahel Babb at (614) 728-2384.

D6.3.1 Response to Comments Received regarding the Request for Comments CWA Section 303(d) TMDL Priority List for 2018

D7. Public Comments and Responses to Comments on Draft Report

The draft Ohio 2018 Integrated Water Quality Monitoring and Assessment Report (a.k.a., Integrated Report or IR) was available for public review from March 22, 2018 through May 4, 2018.

During that time frame, 25 sets of public comments were received on the draft report, as follows:

Name	Organization
Ed Thomas, Director, Regulatory Affairs	The Fertilizer Institute
Ray Flasco	Private citizen
FOMR Water Quality Committee	Friends of the Mahoning River (FOMR)
Jared A. Bartley, CFM, Rocky River Watershed Program Manager	Cuyahoga Soil and Water Conservation District
Adam Lehmann, Stream Specialist	Hamilton County Soil and Water Conservation District
John Stark, Director of Freshwater Conservation	The Nature Conservancy
Marj Mulcahy	Private citizen
Eric B. Partee, LMC Executive Director	Little Miami Conservancy (LMC)
Laura Fay, FLOW Science Committee, chairwoman	Friends of Lower Olentangy Watershed (FLOW)
Kim Folk-Axe	Private citizen
Chris Steffen, Jr., National Leadership Council Representative Donald Dean, President	Ohio Council of Trout Unlimited
Chris Tavenor, Law Fellow Trent Dougherty, General Council	Ohio Environmental Council
No names were provided	Ohio Cattlemen's Association Ohio Pork Council Ohio Dairy Producers Association
Chris O. Yoder, Research Director	Midwest Biodiversity Institute (MBI)
Madeline Fleisher, Senior Attorney	Environmental Law and Policy Center
Jean-Luc Kreitner, Staff Attorney	Environmental Law and Policy Center
Crystal Davis, Policy Director	Alliance for the Great Lakes
Kristy Meyer, Vice President of Policy, Natural Resources	Ohio Environmental Council
Gail Hesse	National Wildlife Federation
Sandy Bihn, Executive Director	Lake Erie Foundation and Lake Erie Waterkeeper
Adam J. Sharp, Executive Vice President	Ohio Farm Bureau Federation
Kirt Merritt, Executive Director	Ohio Soybean Association
Tadd Nicholson, Executive Director	Ohio Corn and Wheat
Christopher Henney, President and CEO	Ohio Agribusiness Association
William Ringo, Treasurer	Guardians of GLSM
Hope Taft, Co-Chair	Little Miami Rivers Kleeners and Little Miami Watershed Network
William T. McCarthy	Private citizen
Catherine and Eric Paetz	Private citizen
Tyler Bender	Private citizen
Sheelagh McCarthy	Private citizen

Most of the comments are expressed verbatim as to how they were received; however, grammatical errors and typos may have been corrected and many comments were reduced to just the main points or requests. Please note that page number references to the draft report may not correspond to the same page numbers in the final report. **Furthermore, responses were only prepared for comments that pertained to the 303(d) list and/or the data that supports the list; other comments were taken into consideration but may not be acknowledged in the text below.**

Complete copies of the comments are included at the end of this section.

Comments Related to Specific Watersheds

Comment 1: While per Sections C7 and J2 there seems to be an internal Ohio EPA discussion about the effectiveness of the TMDL process, and planning to follow a new “Vision,” will the TMDL Assessment be completed for the Mahoning River, and, if so, when?

Comment 2: The lower Mahoning and its tributaries do not appear in Table J-15, even though upper stretches were completed in 2011. If an alternative process is anticipated, such as one associated with planned dam removal, can you summarize what that might involve in current discussion? How would such an alternative process include local initiatives under way, and related activity such as the Youngstown Consent Decree?

Responses 1-2: The Biological and Water Quality Study of the Lower Mahoning River report will be available for stakeholder review and comment soon. This is step two of the TMDL development process. Then Agency will review the water quality impairments, if applicable, along with the causes and sources of those impairments to determine what the appropriate mechanism is to restore the river’s water quality. The projects included in Table J-15 are further along in the development process and more likely to be completed in the next two years.

Comment 3: The area for the Mahoning River Mainstem, as found in Section L4, is reported as being 1.68 square miles. This does not seem to be correct. Is the area included in the assessment a factor evaluated in the priority points accumulated?

Response 3: The area for the large rivers is wrong and has been corrected. This is not a factor that is used to calculate priority points. The process for determining priority points can be found in Section J.

Comment 4: The Assessment Unit Summary for HUC 04110001 02 03 (Rocky River) indicates that the Designated Aquatic Life Use for portions of Abram Creek is “Modified Warmwater Habitat – Channel Modified.” In fact, per OAC 3745-1-20, the Designated Aquatic Life Use for Abram Creek is “Warmwater Habitat.” Ohio EPA had proposed to change the Abram Creek designation to MWH-CM but ceded to local requests to maintain the WWH designation. This designation and associated Attainment Status should be accurately reflected in the Assessment Unit Summary for HUC 04110001 02 03 in the 2018 Integrated Report.

Response 4: The assessment unit summary will be revised to reflect the correct aquatic life use designation and attainment status.

Comment 5: Little Miami Conservancy (LMC) would note that attainment of several watersheds throughout the State of Ohio is based on data older than ten years. Historical data is very important but using this as a determination of present day attainment and the health of the aquatic ecosystem is of concern because of the dynamic conditions of lotic and lentic aquatic ecosystems.

The last comprehensive water quality monitoring sampling conducted by Ohio EPA of the lower Little Miami River occurred in 2007. The attainment status and TMDL for this portion of the river is based on that data. It is noted that Credible Level 3 sampling was conducted on the lower reach in 2012 by Midwest Biodiversity Institute/Center for Applied Bioassessment and Biocriteria (MBI), who was contracted with Hamilton County Metropolitan Sewer District, and this data did document impairment in areas Ohio EPA had previously not noted impairment. We understand Ohio EPA conducted some limited sampling of these same site sampled by MBI and came to different conclusions.

It is unclear in the 2018 IR, where this data is discussed or how it fits into the attainment status for the lower Little Miami River.

It is of concern to the Little Miami Conservancy that Ohio EPA uses data older than 10 years to report attainment in the IR.

Response 5: Ohio EPA received and reviewed the sampling results from MBI but had some questions/concerns with the data. There were some large deviations from both the IBI and MIwb scores (compared to Ohio EPA data collected in 2007 and 2012) at a number of sites, and to date has not been approved as Level 3 data for the purpose of inclusion in the Integrated Report.

Comment 6: Per page G-1 (Background and Rationale), FLOW understands that Ohio EPA has limited resources and cannot study every watershed on a 10-year rotation. We also acknowledge that using historical data as stated, “some earlier data collected between 2003-2006 were retained for specific watershed and large river assessments” is necessary and “can be used if the director has identified compelling reasons as to why data are credible”.

FLOW requests that Ohio EPA continue to utilize historical Olentangy River Data in Integrated Reports unless newer data to replace it is available. Of all the 2003-2004 Olentangy watershed data, Ohio EPA chose to use include only one data point (V04Q05 Downstream of Bill Moose Run).

All the sites from Ohio EPA’s monitoring efforts in the Deep Run, Rush Run and Mouth of the Olentangy River 12 Digit HUCs from the 2003-2004 Technical Support Document could have been included in this report. The lack of data on the Olentangy Tributaries gives a misleading picture of the health of the watershed.

The omission of data has resulted in a misleading report of the water quality of the Olentangy based on previous Ohio EPA reports. Previously the Deep Run HUC had the highest water quality as a designated Exceptional Warmwater Habitat and a State Scenic River, this portion of the Olentangy needed minor restoration. Using Ohio EPA’s 2018 Integrated Assessment Report would lead some to prioritize their efforts solely in this Hydrologic Unit Code (HUC).

We appreciate all that Ohio EPA’s Division of Surface Water is doing to improve water quality and request that you conduct a reassessment of the IR 2018 for the Olentangy to include all the 2003-2004 data. And possibly include the 1999 sampling data as well.

Response 6: The Integrated Report provides a summary of the status of the State’s surface waters. In general, for the aquatic life use, ten years of data is included in the interactive map and used in the summary statistics included in the report. The 2003-2004 survey data on the Olentangy River falls out of this window. That does not mean that attainment determinations based on that data go away. Section L4 List

of Prioritized Impaired Waters still contains the Olentangy River HUCs with the assessments made based on the 2003-2004 survey, unless newer data is available.

For the Mouth Olentangy River HUC-12 (050600011103), the 2003-2004 data for the station at Olentangy River at Columbus, downstream Bill Moose tributary is included on the map because this entire HUC was reassessed using new data collected in 2015 at three other stations within the HUC.

Comment 7: Please explain what “Category 4c Impaired not a pollutant” means? Specifically, FLOW is concerned about what this means for Brandige Run- Olentangy River 4 Ch.

Response 7: The reporting Category 4c is used for situations where there is impairment but a TMDL is not needed because the impairment is not caused by a pollutant (e.g. metal, nutrient, bacteria). For this HUC-12, the main cause of aquatic life impairment is a flow regime alteration, with accompanying sedimentation/siltation. The source of the impairment is a dam or impoundment. In this case, the removal of the dam or impoundment is most likely to bring the HUC back into attainment.

Comment 8: Rush Run HUC (05060001 11 02) is listed on page L-27 as Category 1it for Aquatic Life Use. Since there is no data for this 12-digit HUC, shouldn't the category be 3it (Use attainment unknown, TMDL conducted at HUC 11, not enough data to assess this Assessment Unit (AU))?

Response 8: The Rush Run HUC was sampled in 2003-2004. Sites within the HUC were found to be in attainment. The age of data, as a stand-alone factor, is not sufficient justification to revise an assessment unit category listing from 1 to 3.

Comment 9: The ten-year time frame for Tappan Lake to work through the process and to be delisted is too long.

Response 9: The agency is pleased that there is local interest in evaluating and planning to improve the Tappan Lake water quality and believes that the efforts will be more successful than the agency simply developing a TMDL. The time frame is likely realistic, given that the impacts are suspected to be from sources like mining that may take quite a bit of time and money to mitigate.

General Comments

Comment 10: In reviewing the *Draft 2018 Integrated Water Quality Monitoring and Assessment Report*, I was struck by the absence of much of the tabular and graphical analysis in Section G that has been so useful for interpreting results in past years (e.g. Tables G-2, G-3, and G-4 from the 2016 report are missing). I feel particularly strongly that the information in table G-4 from the 2016 report (“Prevalence of the top five causes of aquatic life impairment in watershed and LRAUs”), be included as it is quite useful for prioritizing efforts for watershed management strategies statewide. I would further encourage the Agency to conduct and present this analysis on an Ecoregion basis to facilitate more localized regional watershed management planning. Ideally, two summary tables (one with state-wide data and one broken-down by ecoregion) would be provided identifying number of instances for ALL “causes” of non-attainment of ALU.

Response 10: Please review Section G of the 2018 Integrated Report again, the tables referenced in the comment are included. Thank you for the suggestion to include ecoregions in the presentation of our data. Please be aware that ecoregion associations may be available in the technical support documents associated with monitored watershed to which links are available on the interactive map. Also available on the interactive map website is a link to the GIS data associated with the report cycle. A link to the Interactive Map that coincides with the 2018 IR can be found here:

<http://oepa.maps.arcgis.com/apps/webappviewer/index.html?id=5df599f41fd241be8de26576ed4d6aae>. A link to the GIS shapefiles can be found in the “About” pane.

Comment 11: In G3.1, the “% Attainment Status for LRAUs” seems to have peaked in 2010 and stayed close to the same or slightly declined since then. What explanation might there be for this apparent lack of further improvement? The agency should note the recent trend as well as progress made in the late 1990s and early 2000s.

Response 11: As noted in the 2012 Integrated Report, the aquatic life statistic for large rivers decreased slightly from 2010 “largely because of new assessments in four large rivers, three of which flow through highly urbanized areas and receive large quantities of flow from wastewater treatment facilities.” These four rivers were the Sandusky River, Cuyahoga River, Scioto River (middle) and Great Miami River (lower). Please note, the statistics are based upon the large rivers that were sampled during a specified window of time and therefore do not include all large rivers.

The 2012 Integrated Report notes that “Taken collectively since the 1980s, the quality of aquatic life in all of Ohio’s large rivers has shown a remarkable improvement. Then, only 21 percent of the large rivers met water quality standards, increasing to 62 percent in the 1990s, to 89 percent today (in the 2012 report). Areas not meeting the standards have decreased from 79 percent in the 1980s to 38 percent in the 1990s to 11 percent today (in the 2012 report).”

Comment 12: Ohio EPA has water quality data dating back approximately 40 years. It is high quality data that tells an important story of the challenges and efforts made by the State for its citizens to improve the quality of its waters. We may have misunderstood in the IR in section G, but it appears the Ohio EPA may be selectively evaluating only the latest 10 years of data for trend assessment rather than assessing the entire database for an assessment unit or watershed. Is this the intention of Ohio EPA? By reducing the database, removing historical data, Ohio EPA risks not catching long-term changes in trend assessment that may reflect decreases in attainment.

Response 12: The IR reports status of water quality on a broader, statewide basis than trends for individual HUCs. The individual biological and water quality reports for a specific watershed contain more details on the trends in attainment. As new databases become available, such as U.S. EPA’s Assessment, Total Maximum Daily Load Tracking and Implementation System (ATTAINS), trend analysis for a HUC may become easier and more customizable.

Comment 13: FLOW requests that you return the water quality app to the Geographic Information System service so that we can have access to all Ohio EPA data again. This will be helpful to FLOW and our partners in assessing priorities for projects for water quality improvements, many of which are needed in our urban tributaries.

Response 13: A link to the Interactive Map that coincides with the 2018 IR can be found here: <http://oepa.maps.arcgis.com/apps/webappviewer/index.html?id=5df599f41fd241be8de26576ed4d6aae>. Also, on this page, in the “About” pane, can be found a link to the GIS shapefiles that are downloadable and useable in your own GIS project.

Comment 14: FLOW noticed errors in how Ohio EPA is assigning priority points in the list of Assessment Units in Section L. Specifically, our concern is about how priority points, listed in Table J-3 (page 241) for Aquatic Life Use and Recreational Use are assigned.

1 point for scores between 0-25

2 points for scores between 75.1-100 should have 4 points

3 points for scores between 25.1-50 should have 2 points

4 points for scores between 50.1- 75 should have 3 points

Are these merely typos in the report or were the priority points for each assessment unit miscalculated?

Response 14: This is not a typo. Priority point rationale are described on page J-4: “For the recreation and aquatic life uses, points are assigned based on a computed index score (see Sections F2 and G2). The lowest quartile (scores between 0 and 25) get the fewest points because a TMDL may not be the most effective way to address the impairments. Scores in this range indicate severe basin-wide problems, comprehensive degradation that may require significant time and resources and broad-scale fixes, including, possibly, fundamental changes in land use practices. Education about the effects various practices have on water quality and encouraging stewardship may be more effective in these areas than a traditional TMDL approach. Scores in the highest quartile (between 75.1 and 100) generally indicate a localized water quality issue. Addressing the impairment may not require a complete watershed effort; rather, a targeted fix for a specific problem may be most effective. Thus, these receive the next lowest number of priority points. The most points are awarded for scores in the middle quartiles (between 25.1 and 50 and between 50.1 and 75), indicating problems of such scale that purposeful action should produce a measurable response within a 10-year period. These waters are the best candidates for a traditional TMDL.” This system of priority points has been in place since the 2010 IR.

Comment 15: Ohio has one of the leading programs among states in the U.S. that allows the agency to produce something better than a simple statewide estimate of use attainment and non-attainment. Based on our experience in reviewing state programs, the analyses like that in *Large Rivers are Making Progress Toward the 100 Percent Attainment by 2020 Aquatic Life Goal* in Section A are the outcome of a nearly 40-year commitment to a robust M&A program and a level of spatial detail that matches the scale of water quality management. Many states, because of a lack of spatial detail in their M&A, over-extrapolate their results from many fewer monitoring sites (including those who employ statistical networks) resulting in not only a reduced accuracy in the application of those results, but a clear severance from meaningfully affecting water quality managements programs.

While we recognize the quality and integrity of the nearly 40 years of M&A on the large river assessment units, we are concerned about the expression of the most recent results in the 2018 IR. The lead in statement “Ohio’s large rivers (the 23 rivers that drain more than 500 square miles) remained essentially unchanged in percent of monitored miles in full attainment compared to the same statistic reported in the 2016 IR” is essentially correct. However, we see this section at least implying that 100% full attainment will occur by 2020, which means that a gain of 12.5% will need to “found” if the goal is to be attained. This section of the IR needs to take a step back and report what has actually happened since 2010 and also to include the full set of results back to 1980. Two graphics are provided to assist in that process and we have assessed the likelihood of actually improving beyond the 2008 full attainment rate of 93.1% in an article on the MBI website (Figure 1). Instead, we see a decline of 5.6% between 2008 and 2016, which we also believe represents a leveling off of improvements seen prior to 2008 at a

minimum and more likely an actual decline. We suggest that the agency modify the IR to recognize this and also the unlikelihood of meeting the 2020 goal especially given the current deregulatory climate. This also highlights the critical importance of maintaining the M&A level of effort otherwise the agency will lose the ability to credibly assess these trends into the future. This issue alone reaffirms our concerns about the pending 80% reduction in the level of sites evaluated annually beginning in 2018.

Comment 16: MBI is concerned about the apparent decision to utilize only the most recent 10 years of assessment data to analyze trends. While we recognize the practical utility of a 10-year period as a “rule-of-thumb” for considering data as being applicable to a particular river or stream at a given point in time, there is no particular validity in that time frame. It should be applied differently to non-attaining vs. attaining streams and rivers and it should also consider the quality at the same time. We would not expect

and EWH river to decline and if the stressor levels have not increased the quality should be the same in 10 years or 20 years. For assessing long term trends, we strongly advise the agency to retain all of the years of assessment dating back to 1980 and simply adding the new biennium of results in each successive reporting cycle. If only the prior 10 years are assessed, then it will only be another reporting cycle before the peak attainment of 93.1% is lost from the analysis and providing an inaccurate assessment of decline or improvement. Again, to preclude misreading these trends we urge the agency to retain all the biennial cycles and updating them to include the years in between 1980 and 2016. We would be willing to work with the agency to build such an analysis.

The HUC-12 assessment shows a continuing improvement and we recommend including the results back to 1980 to provide a solid historical perspective. The attainment rate is well below the large river assessment units and due to the different degrees of success in controlling point and nonpoint sources of impairment.

Response 15-16: While we do not intend to revise the 2018 IR, we appreciate the comments and will take them under advisement for future reports. As you know, the goals will need to be reset in the 2020 report, and that may also be a good time to update/revise our presentation and discussion of the trends.

Comment 17: Ohio in its assessment units and scoring has the lowest number of points allowable in the human health category. Human health is extremely important. Explain??

Response 17: The human health beneficial use in the Integrated Report pertain to the consumption of sport caught fish. In general, the sources of the most common fish tissue contaminants (mercury and PCBs) are remediated through programs other than the TMDL program and, therefore, are assigned a lower priority point value for TMDL development.

Comments Related to Monitoring Schedule

Comment 18: While we appreciate the need to address the new TMDL requirements, we strongly encourage Ohio EPA to resume a full (e.g., up to 6 or 7 basins/watersheds, ~500 sites) monitoring schedule in 2019, using the geometric survey design similar to that used since the 1980s.

Comment 19: Ohio EPA's 2016 Integrated Report contained a Long-Term Monitoring Schedule map depicting monitoring through 2027 for the State of Ohio. This map with the schedule for comprehensive water quality monitoring for Ohio appears to be missing from the 2018 report. The Little Miami Conservancy feels this schedule is imperative to maintain the high-quality data the State of Ohio produces.... Will Ohio EPA provide a long-term monitoring schedule in the 2018 IR or will the schedule be provided in another format?

Comment 20: Ohio EPA has operated an exemplary monitoring and assessment (M&A) program that is nearing 40 years for inland rivers and streams...We therefore urge the agency to reveal the intent of any changes to stakeholders, especially those who have come to rely on the outputs and outcomes of one of the most comprehensive approaches in the U.S. As it reads now the ***Ohio EPA Monitors Water Quality in Ohio And Reports its Findings*** discussion in Part A potentially provides a very misleading message about the future of the program that many stakeholders have simply expected to exist well into the future. There are many other concerns, more than we can state in these comments, but we do not see how any fundamental interruption in the design and execution of this program will allow the agency to effectively execute its mission of protecting and restoring water quality in support of measuring the attainability and attainment of designated uses.

Response 18-20: Ohio EPA currently has over 45 outstanding TMDL and/or Biological and Water Quality Study reports that need to be completed by the same staff that are responsible for doing the field work. With TMDL legislative changes, we need a couple of years to reduce that report back log. In the meantime, we will be evaluating if future monitoring can be done in more efficient and effective ways - especially

having completed surveys in all significant watershed areas for TMDL purposes at least once now. We are evaluating the use of a probabilistic approach layered with specific needs monitoring (e.g. bracketing point sources for permit support) as we work to develop a sustainable monitoring schedule. We hope to hold some stakeholder sessions over the next year to discuss options (e.g. ecoregional assessments) and then provide a new schedule in 2020 Integrated Report.

Comments Related to Lake Erie

Comment 21: Given the importance of the Western Basin to the overall health of Lake Erie and to its role as a public drinking water source, the **Ohio EPA must prioritize its implementation of TMDLs moving forward with the Western Basin in mind.**

The main source of nonpoint source pollution throughout the Maumee Basin is most likely agricultural activities. The *Nutrient Mass Balance Study* notes that the Auglaize River, for instance, has 80 percent of its landscape devoted to cultivated crops, and the entire watershed is 79 percent agricultural production of all forms. Because Phosphorus and Nitrogen are the principal nutrients that can increase the intensity of HABs, the Ohio EPA must ensure that it properly prioritizes TMDLs throughout the region and accounts for phosphorus and nitrogen that results from nonpoint source pollution in those TMDLs. Ohio EPA can use its TMDLs to clearly identify where it can focus its efforts to promote Best Management Practices to reduce nonpoint source pollution.

Response 21: As indicated in Table J-15, four of the six TMDL projects expected to be submitted to U.S.EPA for approval in the next fiscal year are for Lake Erie, and three of those are for the western basin. The comment about ensuring that the TMDLs account for nonpoint source pollution is well taken, and we will be considering that as we move forward with our pending projects.

Comment 22: ... OEC believes that in the final version of the *2018 Integrated Water Quality Monitoring and Assessment Report*, the **Ohio EPA should also include a schedule that discusses when it will update older TMDLs in the Maumee and Portage Basins to account for the new impairment status of the Western Basin.**

Of course, the OEC does not expect the Ohio EPA to accelerate the update of old TMDLs before the agency develops TMDLs for watersheds that presently lack such a guiding document. However, if the Ohio EPA takes seriously its goal to “Incorporate HAB considerations into priorities (both PDWS use and ultimately Recreation use),” then it must develop a schedule to improve and replace old TMDLs that do not properly account for the Western Basin’s algae impairment status. The Draft Report is the perfect moment to outline that schedule, and updated TMDLs can serve as a key opportunity to highlight the ongoing voluntary activities throughout the Maumee and Portage Basins designed to reduce nonpoint source pollution. Updated TMDLs can also provide the public and policy makers with a clear perspective on water quality throughout the region.

Response 22: The state is only required to include a TMDL schedule for the next 2 years in the Integrated Report, which it has done. While we do not disagree that the old TMDLs need updated, we simply do not have the resources to do so in the next 2 years while also completing the new TMDLs. No changes will be made to the 2018 IR, but the comment will be considered in our administrative planning for the program.

Comment 23: Based upon the use of satellite images for this process, is it implied that the size of the algae bloom is directly proportional to the toxicity of the bloom from a recreational stand-point?

Comment 24: According to the proposed assessment methodology, it is bad if the presence of cyanobacteria is at levels at or above the threshold for detection via the satellite images. How does the presence of cyanobacteria adversely impact recreation? Why base the assessment method at a low cyanobacteria density? Why could it not be based on a medium level?

Response 23-24: The density of the bloom is more closely tied to toxicity and therefore recreational impacts. Cyanobacteria cell counts above 20,000 cells/mL are associated with a higher likelihood of having measurable concentrations of microcystins, with 10 ug/L being possible in highly toxic blooms (above Ohio EPA's microcystins recreational health advisory concentration). Source: World Health Organization, Toxic Cyanobacteria in Water, 1999, Chapter 5

http://www.who.int/water_sanitation_health/publications/toxiccyanobact/en/. Historic data show the western basin of Lake Erie is typically dominated by microcystins-producing *Microcystis* blooms (articles showing shift to *Microcystis* dominance: Bridgeman et. al., "A novel method for tracking western Lake Erie *Microcystis* blooms, 2002 – 2011", 2012

https://www.utoledo.edu/nsm/lec/pdfs/A_novel_method_for_tracking_bridgeman.pdf and Meyer et. al. "Genome Sequences of Lower Great Lakes *Microcystis* Sp. Reveal Strain-Specific Genes That Are Present and Expressed in Western Lake Erie Blooms" 2018

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5647855/>)

It should also be noted that a comparison of using a 20,000 cells/mL benchmark to a 100,000 cells/mL benchmark did not change the impairment determination.

Comment 25: How was it determined that a threshold of 30% of the western basin open water unit area with a density of 20,000 cells/mL is acceptable?

Response 25: When cyanobacteria capable of producing cyanotoxins, especially *Microcystis*, exceed concentrations of 20,000 cells/ml, there is a higher likelihood that cyanotoxins will be present at detectable concentrations. The relationship between the presence of *Microcystis* blooms and elevated microcystins concentrations has been well documented in the Lake Erie western basin. The 30 percent coverage was reached by an iterative process to set the threshold at a bloom size close to the 2004 and 2012 blooms, which was established by the GLWQA Annex 4 committee to be an acceptable bloom size. This approach was developed and recommended by the researchers and is being used by the agency to interpret the narrative water quality standards. We consider 30 percent coverage in more than 30 days over a season to be the point at which the algae with a density of 20,000 cell/mL or greater becomes a nuisance and impedes recreation at a significant level (i.e. no longer meets the use).

Comment 26: If a bloom covers less than 30% of the western basin open water but is far denser in cyanobacteria cell count, is it still not impaired?

Response 26: It would not be impaired using this assessment method. As stated in the report, for this large body of water where blooms move and change daily, the intent is not to conclude each small or very short-term bloom causes the water to be listed as impaired, but to ensure that widespread, longer lasting blooms do result in an impairment listing. This is similar to how the beaches are evaluated for recreation use based on bacteria (E. Coli). A single exceedance of the maximum criteria does not make the assessment unit impaired, but multiple exceedances of the maximum criteria or an exceedance of the geometric mean criteria do result in an impairment designation (see Section F, pages F2-F5). There is a realization that some exceedances may occur, but if they are small in nature and/or very infrequent, they do not necessarily mean the water cannot be used for its intended purpose overall.

Comment 27: On page F-34 the report mentions that the use of MODIS was the "first phase" of this process. Is there documentation on the next phase of this process? Will there be an opportunity for input on future processes?

Comment 28: On page I-19 the report indicates the satellite images will be used in conjunction with information from "researchers at the Ohio State University/Stone Laboratory, University of Toledo and Bowling Green State University." We appreciate the use of these tremendous academic assets in the

development of a better understanding of the algae issue. The same page indicates that these universities were utilized in 2017 for water sampling.

Was the information gathered at that time utilized in conjunction with the satellite information discussed earlier as part of the impairment designation? If so, how was it utilized?

Moving forward, will the impairment designation be based upon the “Phase 1” use of MODIS, or will it utilize research from these universities or will it be a combination thereof?

Comment 29: The draft Report presents the first phase of Ohio’s assessment method for recreational use attainment due to the presence of algae in WLE. What is Ohio EPA’s plan for the next phase and what components will it contain? When will that phase be available for review and comment?

Response 27-29: The water quality sampling results and available data were discussed with the researchers during the method development. The concern at this time is that amount of sampling locations, sampling frequency and methods need to be evaluated to determine what is appropriate to conclude that, for instance, the microcystin levels are high enough and/or frequent enough to result in a recreation impairment in such a large body of water. Also, at this time there is no concentration threshold established at the federal or state level to compare the toxicity to for recreation impairment (U.S.EPA has drafted criteria for microcystin and cylindrospermopsin but has not yet finalized it). So Ohio EPA intends to continue working with the researchers to develop an appropriate sampling scheme and assessment method for the actual toxicity levels of the blooms (primarily microcystin concentrations in the western basin, but other cyanobacteria need to be explored for areas like the Sandusky Bay and central basin), as well as continue to monitor other parameters like chlorophyll that could possibly serve as indicators of the use impairment (violation of the narrative water quality standard). The intent is to use these sampling results in conjunction with the satellite data for future assessments, but exactly what and how needs to be worked out.

There is some discussion about future phases in Section I. As those are further explored, at a minimum they would be included in draft Integrated Reports (e.g. the 2020 Integrated Report) for input.

Comment 30: We understand and can appreciate the desire to separate out the assessment units in Lake Erie. Yet as previously mentioned, the challenge with this approach is as you become more targeted, accurate information becomes less available. Specifically, to have an assessment unit for the island shoreline, it would be appropriate to access information at this granular level. As such, we question the validity of having such a small assessment unit when the shape files available from NOAA are unable to differentiate between the island shoreline and the western basin open water as mentioned on page F-36.

Response 30: The shoreline units have been maintained because they are important for evaluating the other use designations since data for those evaluations are collected closer to the land. In particular, the recreation use based on bacteria is most critical at beaches which have been and are intended to continue to be evaluated using only data collected within typical beach areas (i.e. not out in the open waters). Since blooms are known to shift and often hug the shorelines, the public water systems with intakes in the shoreline measured significant microcystin levels, and there is more potential for exposure by swimming/boating/other recreation there, it was concluded that the island shoreline should be considered impaired by algae for recreation use as well as the open water.

Comment 31: The reporting on beneficial use impairments in the Lake Erie Nearshore and Areas of Concern is well done and comprehensive enough, but we are concerned that new and emerging threats that are documented for drinking water supplies and recreation represents a threat to other designated uses including aquatic life. The toxic byproducts of cyanobacteria are toxic to fish and other aquatic life

thus we are recommending that it be recognized as a potential cause of impairment. While not a robust assessment, we had a small project in Maumee Bay in 2018 the results of which represented a backsliding to conditions observed in the early 1990s. Furthermore, one site had DELT anomalies far in excess of the BUI delisting criteria. Given the potential for at least chronic effects we advise looking more closely at the role of Microcystin in having adverse impacts on aquatic life use attainment in the nearshore of Maumee Bay and adjacent waters.

Response 31: Ohio EPA continues to monitor the fish and mayflies along the shore of Lake Erie and hopes to maintain a robust enough data set to track impacts such as these. We have been supporting Ohio State University and others to study microcystin in fish tissue and will continue to support and collaborate with the researchers on these issues to the extent we can. In addition, there are studies and models being developed at the national/international level through the GLWQA Annex 2 that will continue to provide more information about the ecosystem in the future.

Comment 32: It seems a bit contradictory and confusing for Ohio to acknowledge and commit to a 40% phosphorous reduction and a reduction for dissolved reactive phosphorous to have an 'acceptable' level of algae. Instead of using the 40% reduction in the western basin of Lake Erie which is part of Annex 4 in the Great Lakes Water Quality Agreement, Ohio has determined an alternate method of assessing when the western basin is no longer impaired. It seems that the 40% reduction etc. should be the benchmark for eliminating the impaired designation. Why did Ohio change from the 40% reduction for removing the impaired designation to an algae coverage formula?

Response 32: Ohio has not changed from the 40 percent phosphorus load reduction goals for the tributaries to the lake. In fact, the bloom coverage goal for determining impairment status was derived by aiming for size of bloom that is expected to occur when the 40 percent phosphorus load reduction goal from the tributaries is met (blooms no bigger in size than 2004 or 2012).

Comment 33: The NOAA Experimental Lake Erie Harmful Algal Bloom Bulletin has a threshold for cyanobacteria detection of 20,000 cells/mL. The estimated cyanobacteria density is determined through the strength of the measured reflectance signal at multiple wavelengths. What is the relationship between toxin production and cyanobacteria density?

Response 33: For over the past decade, western basin Lake Erie cyanobacteria blooms have been dominated by microcystins-producing *Microcystis* blooms (see prior references in the response to comments 23-24), so a relationship between the phycocyanin spectral signature and severity of the cyanotoxin producing bloom can be made. In other lake systems dominated by non-cyanotoxin producing cyanobacteria genera or strains the relationship may be different (high biomass blooms may not be linked to cyanotoxin production). This is one reason Ohio EPA is proposing to use the NOAA satellite data to help identify impaired conditions on Lake Erie and not on Ohio's inland lakes, where links to toxicity may not be as clearly defined.

Comment 34: Current research being conducted by The Ohio State University at Stone Lab is showing that the ratio of cyanobacteria toxin in the water to the amount of cyanobacteria biomass present changes from year to year and within the summer. The highest toxin per biomass ratio routinely occurs at the start of the bloom and this ratio decreases throughout the summer as nitrate concentrations in the water column decrease. The result is that the composition of the bloom shifts from highly-toxic to low to non-toxic strains of *Microcystis*. The data again leads to the question – How does the presence of cyanobacteria in the later stages of a bloom adversely impact recreation?

Response 34: Recreation season is typically over by the end stages of a bloom (October) when cyanotoxin concentrations can be lower. Microcystins concentrations have been measured above recreational thresholds well after the traditional September Labor Day end of recreation season during severe HAB

years. In addition, some Lake Erie public water systems have had their peak microcystins detection in October, after the traditional end of recreation season. In 2017, microcystins sampling in Lake Erie conducted by the cities of Toledo and Oregon exceeded recreational thresholds after Labor Day.

Comment 35: Section I: NWF supports the acknowledgement in I4 for the need for long term monitoring in Lake Erie but this needs to be a more complete discussion of needs and plans for a more robust analysis of Lake Erie condition. Ohio EPA should identify in the final report its intentions to develop plans and commitments for biological monitoring (including mayfly, phytoplankton, zooplankton and periphyton). Ohio EPA should include discussion on the data needed to apply the Aquatic Life Use Index Score for the open waters of Lake Erie (listed as no data available for analysis). Ohio EPA is in the unique position to apply its expertise and responsibility towards tracking changes in status and condition of the lake. Lake Erie is particularly susceptible to changes in condition and we need long term commitments for a robust monitoring program. We understand that funding may not be currently available, but Ohio EPA has a responsibility and an opportunity to define a minimum needs monitoring program in the IR. While Ohio EPA has deferred to USEPA and then to university and NOAA scientists for a protocol for assessing the open waters, it needs to leverage its own in-agency expertise for identifying the need to track status and condition of Lake Erie.

Response 35: The Integrated Report is not required to contain a detailed accounting of the monitoring needs for determining impairment of the state's waters. However, there are mentions/references to Ohio EPA's nearshore monitoring program for Lake Erie (including an overview on page C7) which is fully expected to continue. The monitoring schedule for the tributaries is being evaluated and is expected to be provided again in the 2020 report. It should be noted that the development of the assessment method was a collaborative process, with input provided by the researchers at Ohio EPA's request to gain a broader perspective of experts, and the result is ultimately the agency's methodology.

Comment 36: Section I: While there is brief mention of monitoring related to algal blooms, NWF requests that Ohio EPA expand this discussion to include needs and plans to address additional cyanotoxins in Lake Erie for future reporting. The specific thresholds for cyanotoxins in the public drinking water use attainment analysis are clear but the satellite imagery analysis has limitations. As mentioned in Section F, the relationship between the presence of *Microcystis* blooms and elevated microcystin concentrations has been well documented in the Lake Erie western basin. However, cell density and the potential for human health impacts for other cyanotoxins with less scum formation are less well understood. We are concerned that saxitoxins, anatoxin-a and cylindrospermopsin could be overlooked in the attainment analysis for recreation and more importantly, for human health exposure. Consideration for future monitoring of algal toxins in recreational waters in Lake Erie and potentially other inland beaches should be presented in this section for the recreation use attainment analysis in future IRs.

Response 36: While no changes to the 2018 report will be made, your comment will be considered as we develop plans to enhance and expand our assessment methods.

Comment 37: Sandusky Shoreline and Sandusky Open Water: The table presented in the webinar "2018 Lake Erie Results" shows that the Sandusky Shoreline is listed as impaired for Recreation *E. coli* but not for Recreation Algae. Nor is the Sandusky Open Water listed for algae. Please explain how Sandusky Bay in particular does not meet the thresholds for algae established with the new methodology, particularly when satellite imagery depicts presence of algae every year and is often the first area to show earliest in the season and the latest to fade in the fall. The Section K map indicates the Sandusky Shoreline as impaired, but without the *e. coli*/algae distinction. The map indicates no data available for the Sandusky Open Water assessment unit. I could not find any narrative in the report to provide any explanation. Please clarify if I missed it.

Response 37: As noted in responses 25 and 33, western basin Lake Erie cyanobacteria blooms have been dominated by microcystins-producing *Microcystis* blooms for many years, so a relationship between the phycocyanin spectral signature and severity of the cyanotoxin producing bloom can be made. This relationship has not yet been developed for other cyanobacteria blooms (e.g. the planktothrix dominated blooms in the bay). The agency has contacted NOAA and is working on a plan to obtain the necessary information and develop similar assessment methods for the Sandusky Bay and central basin areas of the lake.

Comment 38: There should be an assessment for determining impairment for the central basin of Lake Erie which would be based on frequency and size of the dead zone along with if the dead zone is impacting the central basin public drinking water intakes.

Response 38: The agency has been collecting dissolved oxygen and other data related to the anoxic zone, along with the other states bordering the central basin, to understand the extent and movement of the zone. We will continue to collect data and work to develop an assessment method for the anoxic zone.

Summarized Comment 39: There should be a western Lake Erie TMDL scheduled that is designed to include all US western Lake Erie watersheds and would assess high flow nutrient – phosphorous and nitrogen inputs during high flow. That TMDL should be given the highest priority ranking. Lacking that, a thorough discussion of why no TMDL is being pursued should be in the report. Ohio EPA is asked to reconsider whether its ongoing “alternative” efforts under Annex 4 of the Great Lakes Water Quality Agreement are in fact an adequate substitute for a TMDL for western Lake Erie.

Completing TMDLs for all 32 watersheds with nutrient loading limits that aggregate up to the GLWQA loading target should be an urgent priority. Such an effort would equate to a “whole lake” TMDL. A timeline and schedule should be included in the final 2018 Integrated Report

Response 39: The report does include an explanation about why a TMDL is not being pursued immediately and clearly indicates the western basin load reductions are a priority for the agency and the State. The agency recognizes that if there is no progress then a TMDL may ultimately be required but does not believe that a TMDL alone is adequate to address the problem. The Ohio Domestic Action Plan is intended to be a living document that will be updated/enhanced regularly to ensure progress towards the GLWQA Annex 4 goals – which are based on high flow nutrient reduction needs. Actions to reduce nutrients will require the efforts of multiple stakeholders at the local, state and federal levels. Lastly, the tributaries to the western basin are among the highest priorities to complete TMDLs. The western basin is a high priority for action (just not necessarily a lake TMDL), and the efforts will continue as stated in the report.

Comment 40: Ohio’s assessment units for Lake Erie and its TMDL analysis are as clear as mud to the average reader. It appears the scoring for recreation is low while for public drinking water higher. Both of these should receive the highest points because of cyanobacteria/microcystin has very high toxicity that is dangerous for Lake Erie public water intakes and for all who swim or come in contact with the algae.

Response 40: We will consider this for future reports. The shoreline units do receive very high priority points for both drinking water (if there are intakes) and recreation. However, we recognize that we need to evaluate our priority scoring system and consider how best to accommodate multiple pollutants for one use impairment.

Comment 41: The Auglaize and Tiffin Rivers should not be delisted because Heidelberg data shows that these two rivers are major sources of nutrients that are causing problems for Lake Erie. It appears that OEPA is delisting for low flow etc. and is not considering high flow when there is the most significant runoff to Lake Erie. Ohio’s assessment system is fatally flawed when it fails to assess high flow runoff after heavy rains.

Response 41: The upper Auglaize River has an existing TMDL report approved in 2004, therefore impaired HUCs within this project area have been delisted. The lower Auglaize River was surveyed in 2014. A Load Analysis Plan will be prepared for the 12 sites found to be in non-attainment in this project as the next step in the TMDL process. The Tiffin River was surveyed in 2013 and a TMDL report is in preparation. Ohio EPA's routine watershed surveys are designed and intended to determine near field attainment of designated uses. Ohio EPA conducts or collaborates on other monitoring that is designed and intended to determine loading to downstream waters, such as Lake Erie. It should also be noted that watersheds that are sources of pollutants to downstream waters do not have to be listed as impaired to be considered for restoration/implementation projects.

Comment 42: The 2018 Draft Integrated Report states that Ohio EPA requested input from various researchers regarding metrics to be used to provide a “scientifically relevant determination of impairment” using targets to meet these Annex 4 goals. Ohio EPA appears to have concluded that this can be achieved by assuring that the algae bloom is not greater than what occurred in 2004 and 2012. As discussed below, Ohio EPA’s methodology used to support the nutrient impairment designation has not been made available to the public for review and comment. No data or technical justification was provided in the Draft 2018 Integrated Report. Nor did the report provide the linkage between this new methodology and the Annex 4 bloom severity target. We believe it is critical for stakeholders to have the opportunity to review the data and technical justification before the open waters of the lake are declared impaired. This is particularly important because the same target (and linkage) will need to be used to assess when the lake is no longer impaired and is meeting the Annex 4 goal. A peer review process that includes researchers that informed the GLWQA 2012 threshold for algae bloom severity seems to be in order.

Response 42: The report outlines the methodology and data used to develop the assessment method. The water quality data is available upon request, but as usual is not provided as part of the Integrated Report. More information about the method is also available upon request and has been provided to the two parties that did request it. Most of the researchers that provided input to the agency are on the GLWQA Annex 4 subcommittees or task teams and several were involved in the bloom severity threshold discussions/recommendations.

Comment 43: Ohio EPA’s Draft Integrated Report does not indicate that the designated uses of the open waters of the WLEB are not being met or are otherwise threatened. Although the report provides a summary of events reflecting recurring water quality problems (algal blooms) in the open waters: there is no indication that the Agency substantiated the conclusion that water quality standards are either not being attained or are threatened or prepared a Section 301 nonpoint source assessment identifying impairment or threats to water quality standards attainment from nonpoint source pollution. In addition, there appears to be no explanation in the report for the decision to base the impairment determination exclusively on limited satellite imaging data, particularly when that data collection/analysis process has not been demonstrated to satisfy the level 3 credible data standard required by RC 6111.52(C).

Response 43: The report mentions in Section F that data such as nutrient and chlorophyll samples were discussed, but they are not considered the best measures of algal bloom impacts and we do not have numeric water quality standards to compare them to. The agency and researchers also have questions/concerns about where and when to sample very large bodies of water to make decisions based on spot sampling of specific parameters, which we hope to address with additional sampling in the 2018 and 2019. The narrative water quality standard to be met includes a prohibition against nutrients that create nuisance growths of algae, and a prohibition against toxic substances. The threshold for determining impairment (or not) is based on a bloom size that we could reasonably conclude does not constitute a nuisance (i.e. that size that occurred in 2004 or 2012), and a cell density level that is not expected to produce significant toxicity levels.

Comment 44: U.S. EPA’s rules require that Ohio EPA consider “all existing and readily available water quality-related data and information” when making impairment listing determinations and submit with all final impairment listings to U.S. EPA, a rationale for any decision not to consider such data and information. Table D-3, Description of the data used in the 2018 IR from sources other than Ohio EPA, appears to be incomplete, as it does not include the satellite image data.

Response 44: There is a statement prior to tables D-2 and D-3 that “Additional information about data available for Lake Erie related to algae is included in Section F4.” This can be summarized and included in Section D in the future, but for this initial report we believed it was important to present all information about the new method in one place (but we did not want to repeat it in several places, so references were included instead). Table F-19 lists all the data that was reviewed for potential use in the western basin algae assessment.

Comment 45: Under R.C. 6111.56(B), Ohio EPA is prohibited from listing waters of the State as impaired without first demonstrating that the failure to meet applicable water quality standards is not due to the existence of naturally occurring conditions in the open waters of the Western Basin. Ohio EPA has not addressed the complicated issues of climate change or global warming in the Draft Integrated Report. Even if the phosphorus load reduction targets anticipated under Annex 4 were to be realized, some consideration of these factors in the Integrated Report is warranted and these factors may lend themselves to a Category 5-alt determination.

Response 45: Many water quality experts with varying backgrounds have been involved in the GLWQA Annex 4 efforts and have concluded that a driving force behind the algal blooms in the western basin are the nutrient loads from the tributaries. We understand climate change, in particular more intensive rain events that mobilize nutrient runoff, may play a role in the algae blooms.

Comment 46: The methodology Ohio EPA used to list the Lake Erie open waters as impaired, which Ohio EPA has not used previously to support any nutrient-based impairment listing of Ohio’s waters, has not been subjected to meaningful notice and opportunity for engagement by interested stakeholders. 40 CFR 25.5(b)(2), which prescribes the overarching public involvement requirements for state environmental agencies, requires that agencies provide the public with the relevant information “at the earliest practical time,” and states that fact sheets and other data summaries “shall not be a substitute for public access to the full documents.”

Ohio EPA does not have a methodology to comply with 40 CFR 130.7(a), which requires that “the process for developing section 303(d) lists **and public participation** be described in the state’s continuing planning process under section 303(e).” *Guidance for 1994 303(d) Lists*, November 26, 1993. (Emphasis added). U.S. EPA’s guidance regarding the need to timely and fully engage the public in impairment decision-making was updated as recently as January 23, 2018, where the Agency reaffirmed the mandate that “EPA and the states actively engage the public...as demonstrated by documented, inclusive, transparent, and consistent communication.

Ohio EPA’s engagement with the public on the proposed impairment designation of the open waters of the Western Lake Erie Basin is insufficient. The Draft 2018 Integrated Report itself acknowledges that only “**much** of the data used in the report have been presented to the public.” It does not say “all,” or even “most.” The report does not provide any of the NOAA satellite data (or indicate where it is available), does not indicate Ohio EPA’s basis for concluding that the (post-2012) data meets level 3 credible data standards, and does not describe the basis for the Agency’s adoption of the 20,000 cells/mL, 30% coverage for 10 days metric. The lack of communication on these (and other) critical components of Ohio EPA’s decision-making compromises the ability of the public to meaningfully participate in the process.

We believe that Ohio EPA should provide additional information to the public prior to using the new satellite data – based methodology to determine that the open lake waters are impaired. We request that the data and associated analysis used in this determination be made publicly available for all interested stakeholders. We also request a technical analysis of the interconnectedness between this new method and the state’s obligation under Annex 4 of the GLWQA. Ohio EPA’s engagement with the public on the proposed impairment needs additional time prior to the finalization of the Draft 2018 Integrated Report.

Response 46: The draft report was released shortly after the methodology was developed (input presented by researchers in January 2018 and the narrative was written by the agency while drafting the IR in spring of 2018). The method was public noticed as part of the Integrated Report for >40 days, a webinar was provided with an opportunity to ask questions, and the agency provided the underlying data in our possession to the parties that requested it. If a specific request for information is received, we will be happy to provide our records. The underlying data has not been included as part of the Integrated Report in the past but has been made available upon request. As the 2018 report is already past due, the agency is not willing to extend the comment period.

Comment 47: Developing a new numeric 10-day algal cell count/density metric as the standard to define nutrient impairment for the open waters of Lake Erie constitutes the *de facto* establishment of a new nutrient-based, numeric water quality standard for the Lake. Yet this standard has not undergone notice and comment rulemaking, as required by RC 6111.041 and RC Chapter 119.

...Ohio EPA’s new satellite-based, algal cell count/density numeric standard should undergo the rulemaking procedures set forth in RC Chapter 119 before the standard is used to assess the impairment status of the open waters of the Western Basin. That is the rule of law established by the Ohio Supreme Court in *Fairfield Cty. Bd. of Comrs. v. Nally*, 143 Ohio St.3d 93 (2015).

... Ohio EPA’s new 10-day algal cell count/density metric “does more than simply aid in the interpretation of existing rules and statutes. Instead, it prescribes a legal standard that did not previously exist.” Also, as in *Fairfield County*, this new standard has a general and uniform effect even though it will not be implemented until a TMDL and NPDES permit, nutrient management plan, or other regulatory steps are taken.

The 10-day algal cell count/density metric utilized in the Draft 2018 Integrated Report is a water quality standard, just as was the phosphorus target value of 0.11 mg/l taken from the 1999 Association Report. Unless and until it is formally promulgated by Ohio EPA as a rule, it is not appropriate or lawful for the Agency to use it as such. As the Supreme Court held in *Fairfield County*, when state agencies bypass formal rulemaking “affected persons are denied access to the process that the General Assembly intended them to have, *i.e.*, the early, informed, and meaningful opportunity to challenge the legality of the standards...and the underlying assumptions, data, logic, and policy choices that Ohio EPA made in developing the standard.

Response 47: The Integrated Report is just that - a report required by federal statute on the water quality status. We do not agree that the proposed assessment method is establishing a water quality standard. The State has inherent authority and discretion to use science and professional judgment to inform implementation of a narrative standard – and the narrative standards applicable to all state waters (OAC 3745-1-04 (D-E)) were used for the impairment determination. The narrative water quality standards have been adopted in accordance with state rulemaking requirements. It should also be noted that the impairments are tied to specific limited portion of Lake Erie (not a statewide impact/implication).

Comment 48: ...Ohio EPA’s decision not to give a “5-alternative” designation to the open waters of Lake Erie is especially puzzling given that the State is already pursuing just the sorts of alternative approaches that it indicated it would pursue in its 2015 303(d) Vision Implementation Plan.

In light of these extensive approaches to addressing impairments caused by phosphorus, the State should consider designating the open waters of Lake Erie as “5-alternative” and assigning a lower priority ranking for those waters. While there is more work to be done to restore water quality, the State should employ an adaptive management approach and allow these alternative approaches a chance to achieve water quality goals. It should not reflexively head straight down the TMDL path.

Response 48: The 5-alt category is being considered by Ohio EPA. However, the state must first develop an alternative plan and that plan must be reviewed and accepted by U.S.EPA before U.S.EPA can/will approve a 303(d) list with a 5-alt category included. While Ohio EPA believes that the Domestic Action Plan in conjunction with our other initiatives form the basis of an alternative plan, we have additional ideas to enhance/fine tune the Domestic Action Plan and have not yet developed a formal 5-alt proposal to submit to U.S. EPA. That is under consideration and may be used in future lists.

Copies of comment letters follow and include those from organizations followed by private citizens.

D6.3.2 Comments Received during the Request for Comments CWA Section 303(d) TMDL Priority List for 2018

National Wildlife Federation
Comments on the
Ohio 2018 Integrated Water Quality Monitoring and Assessment
Report

May 4, 2018

1. The National Wildlife Federation (NWF) applauds Ohio EPA in the designation of the open waters of Lake Erie as impaired. We support the methodology developed by the universities, NOAA and the agency utilizing satellite imagery and the thresholds for density and duration.
2. Section D. NWF supports the delineation of Lake Erie into the seven assessment units. We believe it is an appropriate consolidation of the ten assessment units initially proposed in the 2014 Integrated Report (IR) and the three units used in previous IRs.
3. Section I: NWF supports the acknowledgement in I4 for the need for long term monitoring in Lake Erie but this needs to be a more complete discussion of needs and plans for a more robust analysis of Lake Erie condition. Ohio EPA should identify in the final report its intentions to develop plans and commitments for biological monitoring (including mayfly, phytoplankton, zooplankton and periphyton). Ohio EPA should include discussion on the data needed to apply the Aquatic Life Use Index Score for the open waters of Lake Erie (listed as no data available for analysis). Ohio EPA is in the unique position to apply its expertise and responsibility towards tracking changes in status and condition of the lake. Lake Erie is particularly susceptible to changes in condition and we need long term commitments for a robust monitoring program. We understand that funding may not be currently available, but Ohio EPA has a responsibility and an opportunity to define a minimum needs monitoring program in the IR. While Ohio EPA has deferred to USEPA and then to university and NOAA scientists for a protocol for assessing the open waters, it needs to leverage its own in-agency expertise for identifying the need to track status and condition of Lake Erie.
4. Section I: While there is brief mention of monitoring related to algal blooms, NWF requests that Ohio EPA expand this discussion to include needs and plans to address additional cyanotoxins in Lake Erie for future reporting. The specific thresholds for cyanotoxins in the public drinking water use attainment analysis are clear but the satellite imagery analysis has limitations. As mentioned in Section F, the relationship between the presence of *Microcystis* blooms and elevated microcystin concentrations has been well documented in the Lake Erie western basin. However, cell density and the potential for human health impacts for other cyanotoxins with less scum formation are less well understood. We are concerned that saxitoxins, anatoxin-*a* and cylindrospermopsin could be overlooked in the attainment analysis for recreation and more importantly, for human

health exposure. Consideration for future monitoring of algal toxins in recreational waters in Lake Erie and potentially other inland beaches should be presented in this section for the recreation use attainment analysis in future IRs.

5. Section J-3: Ohio EPA assigns the impaired AUs for Lake Erie low priority points stating that the tributary TMDLs and other actions are underway for Lake Erie. However, recent reports (second edition of the Nutrient Mass Balance Study for Ohio's Major River Basin and the 2017 Western Lake Erie Tributary Water Monitoring Summary) indicate little to no progress has been made in nutrient reduction. Clearly, more needs to be done and the actions described in J-3 are not enough.

NWF strongly supports the project under contract with Tetratech to develop a method for setting load reduction goals for Lake Erie and to evaluate whether tributary TMDLs will provide the load reductions to “protect the lake.” However, we do not expect that existing tributary TMDLs will align with the GLWQA targets. This project needs to be accelerated along with adoption of nutrient loading limits in watershed TMDLs that **align with GLWQA targets**, and not just “protect the lake” as described in the J-3 narrative. **Completing TMDLs for all 32 watersheds with nutrient loading limits that aggregate up to the GLWQA loading target should be an urgent priority.** Such an effort would equate to a “whole lake” TMDL. A timeline and schedule should be included in the final 2018 Integrated Report. Our greatest opportunity for success is when we can bring all programmatic tools together. We need to create the links between the GLWQA targets and the tools of the Clean Water Act. The previous targets for Lake Erie under the GLWQA in the early 1980s resulted in the 1 mg/l phosphorus limit for all major wastewater treatment plants in the Lake Erie basin, an excellent example of how the nonbinding GLWQA was incorporated into Clean Water Act authorities to bring about change. Utilizing the current GLWQA targets presents a powerful opportunity for integrating the components of tributary/watershed-based TMDLs with the needed reductions of nutrient loading to Lake Erie. Why allow programmatic silos to perpetuate when gains can be made by leveraging programs to work in concert with the other?

6. Sandusky Shoreline and Sandusky Open Water: The table presented in the webinar “2018 Lake Erie Results” shows that the Sandusky Shoreline is listed as impaired for Recreation E. coli but not for Recreation Algae. Nor is the Sandusky Open Water listed for algae. Please explain how Sandusky Bay in particular does not meet the thresholds for algae established with the new methodology, particularly when satellite imagery depicts presence of algae every year and is often the first area to show earliest in the season and the latest to fade in the fall. The Section K map indicates the Sandusky Shoreline as impaired, but without the e. coli/algae distinction. The map indicates no data available for the Sandusky Open Water assessment unit. I could not find any narrative in the report to provide any explanation. Please clarify if I missed it.

May 4, 2018

Via email to epatmdl@epa.ohio.gov

Ohio Environmental Protection Agency
Division of Surface Water
P.O. Box 1049
Columbus, Ohio 43216-1049
Attn: 303(d) Comments

Re: Comments on Ohio's Draft 2018 Integrated Water Quality Monitoring and Assessment Report

To Whom It May Concern:

The Environmental Law & Policy Center, the Alliance for the Great Lakes, and the Ohio Environmental Council (collectively, "Environmental Groups") appreciate the opportunity to submit these comments regarding the draft Ohio 2018 Integrated Water Quality Monitoring and Assessment Report ("Draft 2018 IR") on behalf of our members throughout Ohio and the Midwest region who rely on Lake Erie for their drinking water, livelihoods, and day-to-day enjoyment.

For almost a decade, harmful algal blooms ("HABs"), resulting mainly from phosphorus pollution from agricultural sources, have been periodically contaminating significant portions of the western Lake Erie basin. These HABs often produce cyanotoxins like microcystin that threaten human and animal health and drive drinking water treatment costs. Even when these cyanotoxins are absent, HABs can cover large swaths of the western basin water with green scum that deters people from fishing, swimming, boating, or otherwise recreating in Lake Erie. This problem is only likely to worsen as climate change results in more severe and frequent spring rainstorms that cause much of the agricultural runoff into the western Lake Erie basin.

The Clean Water Act ("CWA") is a vital tool for confronting and addressing the phosphorus pollution that drives HABs in western Lake Erie. Ohio EPA has taken an important step in applying the Clean Water Act's framework by proposing to designate all of western Lake Erie, including the open waters, as impaired by phosphorus pollution. But that is not enough.

Having determined that the western Lake Erie basin is impaired by phosphorus pollution under the CWA, Ohio EPA's next step should be to prepare a Total Maximum Daily Load ("TMDL") that provides a "pollution diet" by setting an overall cap on phosphorus loadings and allocating that cap among the various sources of phosphorus in the watershed. Troublingly, the Draft 2018 IR suggests that the agency intends to stop short on implementing its CWA obligations in favor of focusing on existing efforts – primarily, implementation of the state Domestic Action Plan under Annex 4 of the Great Lakes Water Quality Agreement, under which Ohio has agreed to work toward reducing phosphorus loadings into western Lake Erie by 40% by 2025. Not only is this proposed approach inconsistent with the CWA's legal requirements, but we are also concerned that it will leave Lake Erie in the same place in 2025 as it is today: dealing with a

potentially existential threat that undermines its role as a vital resource for the entire region. Ohio should be using all of the tools at its disposal to address this pressing problem rather than focusing on a single agreement that, among other flaws, lacks key accountability and transparency mechanisms available under the CWA.

Impairment Designation for the Open Waters of Western Lake Erie

Given the ecological, economic, and recreational importance of Lake Erie to those in the Great Lakes region and beyond, we commend Ohio EPA's decision to recognize the damage that harmful algal blooms are doing to this vital resource and to fully designate the Ohio waters of the western Lake Erie basin as impaired. It is clear that the agency and supporting stakeholders invested significant time and effort in developing a workable methodology for assessing impairment by phosphorus pollution and the harmful algal blooms that it causes.

The 2018 impairment designation for Ohio's Lake Erie waters presents a fuller picture than previous Ohio EPA assessments. Although the 2016 Integrated Report designated the shoreline and drinking water intakes for western Lake Erie as impaired based on the impacts of toxic algae on their use as public drinking water supply, that earlier assessment ignored the question of whether western Lake Erie's designated recreational uses are being attained. Cyanotoxins from algal blooms are a central concern for the millions of people who get their drinking water from Lake Erie, as well as businesses that rely on the lake as a source of clean, safe water. However, there are many more individuals and companies that rely on Lake Erie as a recreational asset, whether for swimming, fishing, boating, waterskiing, or just enjoying the view.

Thus, we are pleased that the Draft 2018 IR acknowledges this important facet of Lake Erie's value by including a methodology for determining whether HABs impair the recreational use of western Lake Erie, and concluding that they do. This formal finding is consistent with on-the-ground research showing that the incidence of HABs on western Lake Erie has a significant effect on recreational use, such as purchases of fishing licenses,¹ and may even affect nearby property values in the long-term.² Notably, according to one of the scientists who helped develop the impairment methodology for the Draft 2018 IR, western Lake Erie could have been designated impaired using this more comprehensive methodology as early as 2010.³

Prioritization of Western Lake Erie for Total Maximum Daily Load (TMDL) Development

In the Draft 2018 IR, Ohio EPA has proposed to list all of the Lake Erie Assessment Units ("LEAUs") in the western basin as Category 5 for recreation and public drinking water supply designated uses. Section 303(d) of the CWA obligates a state to promulgate a TMDL for any

¹ David Wolf, Will Georgic & H. Allen Klaiber, *Reeling in the damages: Harmful algal blooms' impact on Lake Erie's recreational fishing industry*, 199 J. of Env'tl. Mgmt. 148, 148-157 (2017).

² See David Wolf & Henry Klaiber, *Bloom and bust: Toxic algae's impact on nearby property values*, 135 Ecological Economics 209, 209-221.

³ Tom Henry, *Data shows Lake Erie impairment declaration was justified in 2010*, THE TOLEDO BLADE (Apr. 13, 2018), <http://www.toledoblade.com/local/2018/04/13/Data-shows-Lake-Erie-impairment-declaration-was-justified-in-2010.html> (last visited May 3, 2018).

water body it has designated as impaired. A TMDL sets a limit on pollution that can be discharged into the waterway and still achieve “the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.”⁴ A TMDL is subdivided into: (1) the loading allotments for existing and future point sources of pollution (known as a “wasteload allocations”); and (2) the loading allotments for existing and future nonpoint sources of pollution or natural background sources of pollution (known as a “load allocations”).⁵

A state’s duty to establish TMDLs applies whether the sources of pollution impairing a water body are “point” sources that discharge pollution subject to NPDES permits or “non-point” sources outside the traditional permitting structure of the CWA.⁶ If a state fails to carry out this CWA duty, then U.S. EPA must do so.⁷ Once established, a TMDL must be incorporated into the state’s required “continuing planning process” (“CPP”) to achieve water quality standards.⁸

However, a state may prioritize development of certain TMDLs over others. Ohio EPA’s Draft 2018 IR provides two mechanisms for doing so. First, Ohio EPA has created a subcategory for its “Category 5” listing for impaired waters, labeled “5-alternative.” The Draft 2018 IR indicates that Ohio EPA will use that subcategory to “report on alternative restoration approaches for CWA 303(d) listed waters” (page J-1), consistent with the agency’s plan to “use approaches that are an alternative to a TMDL” where “they are likely to result in water quality improvements more efficiently than a TMDL.” (Page C-31) Second, Ohio EPA formally assigns all impaired water bodies in the state an individual priority ranking, based on specific metrics outlined in Table J-3, as well as more qualitative considerations set forth on page J-5.

For the Lake Erie Assessment Units (“LEAUs”) in the western Lake Erie basin, the Draft 2018 IR assigns 14 priority points for the Lake Erie Islands Shoreline; 17 priority points for the Lake Erie Western Basin Shoreline; and 10 priority points for the Lake Erie Western Basin Open Water. Of the more than a thousand water bodies on Ohio EPA’s 2018 impairment list, those scores put the Lake Erie Western Basin Shoreline as the highest priority assessment unit, the Lake Erie Islands Shoreline as sixth-highest, and the Lake Erie Western Basin Open Waters in the top 30. The Draft 2018 IR does not specifically discuss how Ohio EPA applied the qualitative factors from page J-5 for the LEAUs, but does state that “Ohio EPA is actively participating in TMDLs for tributaries as well as many other actions for Lake Erie outlined in Section J3, so priority for Ohio EPA-initiated TMDLs is assigned a low priority for those waters.” (Page J-3)

This explanation suggests that Ohio EPA is *de facto* categorizing the western Lake Erie basin assessment units as “5-alt.” However, absent a more detailed discussion of Ohio EPA’s application of its prioritization methodology, the rationale for the agency’s low prioritization of a

⁴ 33 U.S.C. §§ 1313(d)(1)(C).

⁵ See 40 C.F.R. §§ 130.2(e)-(i).

⁶ *Pronsolino v. Nastri*, 291 F.3d 1123 (9th Cir. 2002).

⁷ See, e.g., *Scott v. City of Hammond*, 741 F.2d 992, 996 (7th Cir. 1984).

⁸ See 33 U.S.C. § 1313(e)(2).

TMDL for the western Lake Erie Assessment Units remains unclear. The Environmental Groups therefore respectfully request that the Final 2018 IR include a thorough discussion of Ohio EPA’s reasoning in declining to pursue a TMDL for the western Lake Erie basin as a top priority in dealing with the harmful algal bloom crisis.

Even more importantly, the Environmental Groups urge Ohio EPA to reconsider whether its ongoing “alternative” efforts under Annex 4 of the Great Lakes Water Quality Agreement are in fact an adequate substitute for a TMDL for western Lake Erie. Ohio EPA has itself admitted that its own most recent analyses show that the state’s current efforts to reduce agricultural manure and fertilizer runoff through voluntary programs and incentive payments – efforts that also form the bulk of the Ohio Domestic Action Plan – have not “moved the needle” on reducing phosphorus loading into the lake.⁹ Even before that, the umbrella Domestic Action Plan prepared by U.S. EPA to summarize all of the state plans acknowledged that it might be necessary to “implement[] a suite of conservation practices on nearly every acre in the watershed through voluntary programs” in order to achieve the 40% target under Annex 4 – requiring 770,000 acres of additional cover crops and more than a million additional acres of subsurface placement in the Maumee River watershed alone.¹⁰ The U.S. Domestic Action Plan also indicates that “the key federal and state programs and projects at work in the basin” are on track to reach only a third of the phosphorus reductions needed to meet the Annex 4 goal.¹¹

In light of these facts, Ohio EPA should not rely on its Domestic Action Plan and other ongoing efforts as a reason to put off its CWA obligation to prepare a TMDL for the western Lake Erie basin. Rather, a TMDL should be a top priority for the state, as reflected in its own point rankings. Moreover, the Draft 2018 IR specifically states that “Ohio EPA is making inland lakes used for public water supply a focus for the next several years for monitoring and improving water quality through TMDLs or other approaches,” and that “Ohio EPA considers nutrients (primarily phosphorus as the TMDL parameter) to be the priority for” its work to clean up inland

⁹ Ohio EPA, 2017 Western Lake Erie Monitoring Study Shows High Phosphorus Levels, <http://www.epa.state.oh.us/News/OnlineNewsRoom/NewsReleases/TabId/6596/ArticleId/1302/1/language/en-US/2017-western-lake-erie-monitoring-study-shows-high-phosphorous-levels.aspx> (last visited May 3, 2018); Marion Renault, *Ohio has ‘long way to go’ to solve Lake Erie’s algae problem, state officials say*, THE COLUMBUS DISPATCH (Apr. 29, 2018), <http://www.dispatch.com/news/20180429/ohio-has-long-way-to-go-to-solve-lake-eries-algae-problem-state-officials-say>. Prior to Ohio EPA’s acknowledgment of this lack of progress, the Environmental Groups previously published reports and submitted public comments about the inadequacy of the Ohio Domestic Action Plan and other existing state actions to reduce phosphorus pollution. See, e.g., Alliance for the Great Lakes et al., EXPECTATIONS FOR DOMESTIC ACTION PLANS UNDER THE GREAT LAKES WATER QUALITY AGREEMENT (June 21, 2016), http://freshwaterfuture.org/wp-content/uploads/2014/09/Expectations-for-Domestic-Action-Plans-under-the-Great-Lakes-Water-Quality-Agreement_21June2016-1.pdf; Ohio Environmental Council, Alliance for the Great Lakes, & Environmental Law & Policy Center, Comments on Ohio’s draft Domestic Action Plan, submitted to Karl Gebhardt, Deputy Director, Water Resources & Lake Erie Programs, Ohio EPA (Sept. 25, 2017).

¹⁰ U.S. EPA, U.S. Action Plan for Lake Erie 96 (2018).

¹¹ *Id.* at 97.

lakes. (Page J-6) Lake Erie fits within these stated priorities as not only a source of drinking water for millions of people, but also a key natural resource for the entire region's economy and ecology. Undoubtedly the significant analysis and data-gathering that has taken place under Annex 4 and beyond can contribute to relatively speedy development of a TMDL, but as detailed below the Annex 4 process is not itself a replacement for the unique value that a TMDL can provide in Ohio's efforts to reduce phosphorus pollution. The western Lake Erie basin should accordingly be first in line for a TMDL in Ohio.

The Value of a TMDL for the Western Lake Erie Basin

Ohio EPA is now turning to the state legislature to supplement the state's existing approach to reducing phosphorus loadings to Lake Erie with enforceable requirements for management of fertilizer and manure.¹² The Environmental Groups agree that requiring the agricultural sector to adopt common-sense measures to reduce phosphorus pollution is vital to stopping HABs in western Lake Erie.¹³ However, a TMDL is an important piece of the puzzle as Ohio EPA moves forward.

While a TMDL does not, by itself, restrict the discharge of pollutants, it provides a blueprint for future actions by the state to restore impaired waters. As described above, developing a TMDL for a particular waterbody involves setting specific wasteload allocations for point sources and load allocations for nonpoint sources.¹⁴ This exercise requires states to analyze and address where pollution discharges are coming from, and allows states to consider what levels of reductions in those discharges are actually achievable with existing or new regulatory tools. Thus, a TMDL is a key "informational tool" for a state considering how to achieve necessary pollution reductions.¹⁵

As Ohio considers how to best target existing funding and enforcement efforts, and what new regulatory tools may be warranted, a TMDL can offer not just a "pollution diet," but also a roadmap for how to follow that diet. This is especially important in light of the fact that Senate

¹² Tom Henry, *Running out of Lake Erie options, Ohio looks to get tougher on farmers*, THE TOLEDO BLADE (Apr. 13, 2018), <http://www.toledoblade.com/local/2018/04/13/Running-out-of-Lake-Erie-options-Kasich-administration-looks-to-get-tougher.html>.

¹³ A number of credible experts have provided recommendations for practical policy and legal reforms that would put Ohio on a path toward reducing agricultural pollution enough to achieve its phosphorus reduction goals, such as mandatory soil testing and subsurface fertilizer or manure application. *See, e.g.* Kristen Fussell *et al.*, SUMMARY OF FINDINGS AND STRATEGIES TO MOVE TOWARD A 40% PHOSPHORUS REDUCTION (Sept. 25, 2017), *available at* <http://www.lakeeriefoundation.org/wp-content/uploads/2017/12/White-Paper-Strategies-Summary.pdf>.

¹⁴ *See* 40 C.F.R. §§ 130.2(e)-(i).

¹⁵ *Pronsolino v. Nastri*, 291 F.3d 1123, 1129 (9th Cir. 2002); *see also City of Arcadia v. EPA*, 265 F. Supp. 2d 1142, 1144 (N.D. Cal. 2003) ("TMDLs established under Section 303(d)(1) of the CWA function primarily as planning devices and are not self-executing."); *Idaho Sportsmen's Coal. v. Browner*, 951 F. Supp. 962, 966 (W.D. Wash. 1996) ("TMDLs inform the design and implementation of pollution control measures.").

Bill 1, the state legislature's last attempt to address phosphorus pollution in Lake Erie after the 2014 Toledo drinking water crisis, is among the efforts that have so far failed to measurably reduce phosphorus loadings to western Lake Erie. A TMDL could help ensure that any further legislative efforts are targeted at measures that will make a real difference. Furthermore, the assignment of pollutant load allocations to specific Ohio geographies under a TMDL transparently identifies discrete targets for the state's efforts to protect Lake Erie. Such geographic targeting is essential to ensure that future actions efficiently reduce phosphorus inputs from nonpoint agricultural sources. It also provides important transparency by helping to identify the private actors that are the ones actually causing nutrient pollution discharges to Lake Erie.

The assertion in the Draft 2018 IR that Ohio's formulation of its Domestic Action Plan is "very similar to the TMDL process" – implying that the two would produce similar impacts – is inaccurate. A TMDL must go through review by U.S. EPA for adequacy and should include "reasonable assurances" that the overall pollution cap and individual allocations are actually achievable.¹⁶ This was a key feature of the TMDL put in place for Chesapeake Bay, because the participating states identified real and actionable consequences that would result if they did not meet specific loading targets, such as limitations on U.S. EPA funding; stepped-up U.S. EPA supervision and enforcement of existing CWA requirements; or additional restrictions for nutrient point sources such as Concentrated Animal Feeding Operations.¹⁷ If either Ohio EPA or U.S. EPA prepares a TMDL, it could and should include such provisions to provide real incentives for Ohio policymakers and stakeholders to make needed changes at the state level to reduce non-point source nutrient pollution. These provisions, as well as the overall nutrient reduction targets, would then be subject to judicial review that would offer crucial accountability in determining whether Ohio has a workable plan to address the pollution driving HABs in western Lake Erie.

Conclusion

Lake Erie is the backdrop for more than 120,000 water-dependent jobs and more than \$14 billion in tourism revenue annually. The lake provides drinking water for approximately three million Ohioans every day and should be a cornerstone of the state's identity as a place that takes protection of public health, economic growth and environmental sustainability. We therefore appreciate the state's recent action to list the open waters of Lake Erie as impaired. The next step is to take action to address that impairment. Ohio has already invested billions in the restoration and protection of Lake Erie over the last decade. With the knowledge gained from

¹⁶ 33 U.S.C. §§ 1313(d)(2), 1341(a)(4); *Am. Farm Bureau Fed'n v. U.S. EPA*, 792 F.3d 281, 307 (3d Cir. 2015).

¹⁷ A copy of the 2010 Chesapeake Bay TMDL is available at <https://www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-tmdl-document>. The TMDL's "Reasonable Assurance and Accountability Framework" section required the Chesapeake Bay states to submit a series of "Watershed Implementation Plans," and provided that U.S. EPA would evaluate the results of those plans every two years. U.S. EPA also identified a number of potential actions it could take to ensure development of appropriate plans, attain the projected pollution reductions, and undertake necessary reporting. U.S. EPA, Chesapeake Bay TMDL Document 7-12 (Dec. 29, 2010).

that effort, we urge you to take advantage of the TMDL tools already available to you under the federal Clean Water Act to begin the next phase of saving Lake Erie.

Sincerely,

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May 3, 2018

Dear Division of Surface Water:

The Nature Conservancy in Ohio has reviewed the draft released March 22, 2018, of the Ohio "2018 2018 Integrated Water Quality Monitoring and Assessment Report." The Conservancy greatly appreciates the effort that went into the report and especially the new sections on current issues such as the condition of Lake Erie, Harmful Algal Blooms and Ohio's significant and high quality wetlands. Thank you for the opportunity to provide the following comments.

In summary, our comments are:

- We commend the agency for including the excellent summary of current and past actions in "Section J3. Addressing Nutrients in Lake Erie" and encourage its distribution as a separate, readily accessible document.
- We appreciate the Agency's effort to work with the coalition of experts (NOAA, universities, etc.) on what constitutes impairment for the open waters of Lake Erie. The emphasis on current science and technically-based agreement is on track and should be supported.
- We encourage Ohio EPA and the Ohio Lake Erie Office to be strong leaders in tracking and measurement of progress toward removing Lake Erie from designation as impaired.
- In G3.1, the "% Attainment Status for LRAUs" seems to have peaked in 2010, and stayed close to the same or slightly declined since then. What explanation might there be for this apparent lack of further improvement? The agency should note the recent trend as well as progress made in the late 1990s and early 2000s.
- While we appreciate the need to address the new TMDL requirements, we strongly encourage Ohio EPA to resume a full (e.g., up to 6 or 7 basins/watersheds, ~500 sites) monitoring schedule in 2019, using the geometric survey design similar to that used since the 1980s.
- We strongly encourage Ohio EPA to continue the effort described in Section I1. Wetlands, and conduct these recommended wetland assessments, reporting on conditions in future IRs.
- Given the overall decline of the Ohio mussel community, we encourage the Agency to include coverage of the status of mussels in Ohio in future Integrated Reports and TMDLs.

More detailed comments are attached to this summary. We appreciate the effort and additions that went into this report and the new topics that are being added and emphasized. Thank you for the opportunity to comment, and we look forward to the final version and to working with you in the future. Please contact me at jstark@tnc.org, or Anthony Sasson at asasson@tnc.org, 614-717-2770 if there are any questions.

Sincerely,



John Stark

Director of Freshwater Conservation

cc: Anthony Sasson, TNC

The Nature Conservancy in Ohio
Comments re: draft Ohio EPA "2018 Integrated Water Quality Monitoring and Assessment Report"

Lake Erie

In "Section I5 Lake Erie" of the 2014 Integrated Report (IR), the Agency proposed "an assessment unit framework (which) provides an overview of available data." The draft 2018 IR appears to address this framework and data, and the agency is to be commended for following through on such analyses.

In the draft 2018 IR, "Section J3. Addressing Nutrients in Lake Erie" provides an excellent summary of what is being done to reduce Harmful Algal Blooms (HABs) and improve central basin hypoxia in Ohio. This includes more detail of progress, especially in agricultural BMP implementation, and measurement of the success of these programs. We encourage Ohio EPA to work with NOAA, universities, USDA/NRCS, ODA and others to further document programmatic and outcome measures.

We encourage Ohio EPA to issue this Section J3 summary, or revisions, as a separate, readily accessible document to inform the public of the scope of actions Ohio has taken.

D3. Evaluation of Lake Erie

Pg D-7:

"Ohio has proceeded, with the considerable aid of several universities and NOAA, to develop a method for assessing the western basin open waters in Ohio for algae blooms. This new methodology is presented in Section F4, and utilizes the new assessment units defined in Section D1."

The report includes new coverage of Lake Erie, its condition and impairment, and methods for measurement. We thank Ohio EPA for covering these areas, establishing a definition of impairment, and new topics. We greatly appreciate the coordinated effort the Agency has undertaken, including the cooperation with NOAA and the universities and the compilation of information in this report. We offer our support for the Section D1. Assessment Units, i.e., the new assessment units for the entire Ohio portion of Lake Erie, and the assessments such as F.4 Recreation Assessment for Algae in Western Lake Erie, on developing methods for determining the condition of the western basin open waters in Ohio for algae blooms.

We thank Ohio EPA for working with a coalition of experts (NOAA, universities, etc.) on what constitutes impairment for the open waters of Lake Erie. The emphasis on current science and technically-based agreement is commendable. We encourage Ohio EPA to participate in and expand ongoing science with these. As you know, the Conservancy is active in addressing nutrient runoff to the Western Lake Erie Basin and we offer our support for the future.

We encourage Ohio EPA and the Ohio Lake Erie Office to be strong leaders in tracking and measurement of implementation of the progress toward removing Lake Erie from designation as impaired. We recognize the Annex 4 process of developing loading targets and Domestic Action Plans. Ohio EPA is familiar with such tracking, as is commonly done in the TMDL process and in the Integrated Reports, and

the overall mechanism to measure progress should be similar, as illustrated in “Figure J-6, State TMDL vs Binational Annex 4.”

Section G: Evaluating Beneficial Use: Aquatic Life

G1.2 General Determination of Attainment Status (and - J6: Schedule for TMDL Work; K: Maps)

Ohio EPA has done an excellent job of collecting and managing data related to the biological, habitat and chemical conditions in and health of Ohio’s streams. These data are extremely useful for many reasons and we encourage continuation of their collection. In past IRs, Ohio EPA has included maps with the “Long-Term Monitoring Schedule” for Ohio watersheds, e.g., that from Section K, Maps, of the 2016 IR is at http://epa.ohio.gov/Portals/35/tmdl/2016intreport/MonitSched_2016.pdf. No map illustrating a monitoring schedule is included in the draft 2018 IR and we are concerned that there is not a projected long-term monitoring map or schedule.

Our understanding is that monitoring that would result in watershed water quality reports will be significantly reduced in 2018, with perhaps only one watershed monitored, plus limited other monitoring such as for Section 319 project and fish tissue purposes. We recognize that this should be an aberration due to requirements of the Ohio Supreme Court decision (“Recent Developments in the TMDL Program,” Section C on pages C-16 and C-17) which resulted in new procedures for TMDLs.

While we appreciate the need to address the new TMDL requirements, we strongly encourage Ohio EPA to resume a full (e.g., up to 6 or 7 watersheds) monitoring schedule in 2019. We also encourage using a geometric survey design like that used for at least the last decade or more (e.g., ~70 or more monitoring sites per watershed). Otherwise, without an extensive, robust monitoring schedule we are concerned about potential impacts to the program such as staff and institutional memory loss, data continuity (loss of the ability to continue to review watershed and statewide trends, such as in Section G: Evaluating Beneficial Use: Aquatic Life), or failure to have enough information to detect degradation and take action. This monitoring is essential for determining, as noted in “B2. 2020 Water Quality Goals,” Table B-3, if Ohio is reaching goals, such as for Aquatic Life Use, “100% full aquatic life use attainment on all Ohio large rivers by 2020” and “80% full aquatic life use attainment on Ohio's principal streams and small rivers by 2020.” Determining upgrades to higher use designations also is important, recognizing the Table B-3 goal to “Identify more high-quality waters.”

Ohio EPA watershed monitoring provides a great service that we would like to see continued with a return to a full schedule by 2019.

G3.1 LRAUs

Pg G-8:

“Continued success ... will depend on ... monitoring LRAUs with an emphasis on those which were last sampled prior to 2009 and whose data will exceed 10 years in age in 2018.”

“Eleven large rivers (15 AUs), representing nearly 490 large river miles, currently meet this constraint and none have been sampled or are scheduled for sampling.”

In Figure G-2, (“Percent attainment status and goal progress ... LRAUs...”) % Attainment Status seems to have peaked in 2010, and stayed close to the same or slightly declined since then. What explanation might there be for this apparent lack of further improvement? We encourage discussion in the report on this relatively recent portion of the graph. Recognizing there is a 100% attainment goal by 2020, what are the challenges to LRAU attainment exceeding 90% and higher in the future? How does the agency intend to address what appears to be this plateau in progress?

The agency also should note the recent trend as well as progress made in the late 1990s and early 2000s.

We also would expect that with the reduction in statewide monitoring by Ohio EPA for 2018 and given the eleven large rivers (data exceeding ten years old) not sampled or scheduled for sampling, that the agency might encounter a shortage of LRAUs to use in this calculation. How might that affect the calculation of this LRAU attainment trend for the 2020 IR and later reports? We therefore encourage a return to a full monitoring program in 2019, including LRAUs.

I1. Wetlands

We thank Ohio EPA for including wetlands in the IR since 2012. The draft IR sections, I1.1 Documented High-Quality Wetlands and I1.2 Significant Wetland Areas, and two tables, Table I-1 — List of high-quality wetland areas, and Table I-2 — List of significant wetland areas, are welcome additions to the report and should be included and refined in future reports.

Section “I1.3 Next Steps” states “Ohio EPA proposes that periodic Level 2 and Level 3 field assessments be conducted on a random selection of wetlands within targeted HUC12 watersheds on a rotating basin schedule.” We strongly encourage Ohio EPA to continue this effort and conduct these assessments, reporting on conditions in future IRs. We agree with the Ohio EPA’s Wetland Ecology Group that those that lack prior assessment data should be the focus, and we encourage Ohio EPA to provide resources needed for wetland staff to accomplish this.

Mussels

As we recommended in our comments on previous Ohio EPA’s Integrated Reports, we encourage the Agency to include coverage of the status of mussels in Ohio in future Integrated Reports and TMDLs. Given the overall decline of the Ohio mussel community, range reductions of many Ohio-listed species, additional species listings by the U.S. Fish and Wildlife Service, and emerging knowledge about issues such as ammonia’s impacts on mussels, the Agency could correlate its extensive biological, chemical and physical data with its own mussel data and that from other sources. As the Agency has done with Lake Erie’s impairment, it is time to review and assess Ohio mussel communities and include them with the review of fish and other macroinvertebrates. A cooperative effort with others, including the U.S. Fish and Wildlife Service, ODNR, universities and others, such as is being done for Lake Erie impairment, would help determine the status of Ohio mussel species and could lead to developing effective strategies to prevent further range reduction and extirpation. With its expertise in stream monitoring and data analysis, Ohio EPA is a well-qualified leader in how to do such assessments.

Freshwater mussels are at significant risk throughout Ohio (e.g., see ODNR's listed species, available at <http://wildlife.ohiodnr.gov/species-and-habitats/state-listed-species>). ODNR's listed mollusks include 24 endangered mussel species, four threatened and eight species of concern; eleven species are considered extirpated, and six are extinct. These 53 represent a significant percentage of the 80 mussel species that have been recorded in Ohio (Watters et al 2009¹). These changes are also an indication that challenges remain to the health of our streams.

¹ Watters, G.T., M.S. Hoggarth and D.H. Stansbery. 2009. Freshwater Mussels of Ohio. The Ohio State University Press, Columbus.



Ohio Environmental Council

**Comments of the Ohio Environmental Council
Regarding
The Draft 2018 Integrated Water Quality Monitoring and Assessment Report**

Ohio EPA, Division of Surface Water
Attn: 303(d) Comments
P.O. Box 1049
Columbus, Ohio 43216-1049

To the Ohio EPA Division of Surface Water:

Please see the comments below regarding the 2018 Integrated Water Quality Report. The Ohio Environmental Council (the “OEC”) provides these comments as a supplement to the joint comments submitted today by the Environmental Law & Policy Center (“ELPC”), Alliance for the Great Lakes (“ALG”) and the OEC. These supplemental comments focus on the TMDL priority list for the Maumee River Basin and related assessment units. If you have any questions, please do not hesitate to contact us.

Introduction

The OEC applauds the recent actions taken by the Ohio Environmental Protection Agency (Ohio EPA), especially regarding their decision to list the Western Basin of Lake Erie as impaired with regards to algae. The OEC looks forward to working with the Ohio EPA and other stakeholders to develop robust regulatory mechanisms and galvanize community support to fix the pollution crisis causing the Lake’s impairment status.

With these goals in mind, the OEC focuses these comments on the immense and complex watershed that flows into the Western Basin: The Maumee Basin, which includes the Maumee River and its major tributaries, the Blanchard, Auglaize, and Tiffin Rivers. The Portage River 8-digit Assessment Unit also flows into the Western Basin. If the Ohio EPA is to reduce the intensity of Lake Erie’s harmful algal blooms (HABs), it must ensure that upstream TMDLs are effectively implemented and enforced. Because the agency chose not to promulgate numeric criteria for the Western Basin’s impairment status, the only measurable numeric criteria connected to the algae lives in those other TMDLs.

Therefore, the OEC provides these comments in addition to the joint comments focusing on the need for a TMDL on the Lake’s open waters, to note where the Ohio EPA should clarify or

justify its reasoning for certain TMDL prioritizations in light of the Western Basin's new impairment status.

Upstream TMDLs are necessary to protect the Western Basin

In the Integrated Water Quality Report, the Ohio EPA emphasizes, among others, the following long term general priorities for its TMDL program:

1. "Work statewide, using rotating basin scheduling for assessment and listing but on a more limited basis to allow for increased focus on lakes and protecting downstream uses;" and
2. "Incorporate HAB considerations into priorities (both PDWS use and ultimately Recreation use)."¹

Ohio EPA provided a comprehensive scientific overview of its assessment methodology for its narrative criteria for the Western Basin on pages F-27 to F-36 of the *Integrated Water Quality Monitoring and Assessment Report*. Given the monumental effect of HABs, the OEC believes it is vitally important for the agency to have a scientifically robust monitoring tool to determine if the Western Basin manages to escape its impaired status for algae.

Given the importance of the Western Basin to the overall health of Lake Erie and to its role as a public drinking water source, the Ohio EPA must prioritize its implementation of TMDLs moving forward with the Western Basin in mind. In its recent *State of Ohio Nutrient Mass Balance Study*, the Ohio EPA emphasized in the first sentence that "excess nutrients (nitrogen and phosphorus) stimulate algal growth affecting water quality."² In addition, the Study found that the phosphorus loads for the Maumee and Portage watersheds was 88 and 87 percent, respectively, due to nonpoint source pollution.³ The Maumee watershed also suffers from massive nitrogen loads, reaching "an average of 41,100 mta," the highest of all measured watersheds in Ohio.⁴ Like phosphorus, the nitrogen loads for rivers flowing into Lake Erie primarily resulted from nonpoint source pollution.⁵

The main source of nonpoint source pollution throughout the Maumee Basin is most likely agricultural activities. The *Nutrient Mass Balance Study* notes that the Auglaize River, for instance, has 80 percent of its landscape devoted to cultivated crops, and the entire watershed is 79 percent agricultural production of all forms.⁶ Because Phosphorus and Nitrogen are the principal nutrients that can increase the intensity of HABs, the Ohio EPA must ensure that it properly prioritizes TMDLs throughout the region and accounts for phosphorus and nitrogen that

¹ 2018 *Integrated Water Quality Monitoring and Assessment Report - DRAFT*, Ohio Environmental Protection Agency, (March 2018), at C-29, http://epa.ohio.gov/Portals/35/tmdl/2018intreport/2018IR_FinalDraft.pdf.

² *State of Ohio Nutrient Mass Balance Study*, Ohio Environmental Protection Agency, (March 2018), at 2, http://epa.ohio.gov/Portals/35/documents/Nutrient%20Mass%20Balance%20Study%202018_Final.pdf.

³ Id. at 3.

⁴ Id.

⁵ Id.

⁶ Id. at 25.

results from nonpoint source pollution in those TMDLs. Ohio EPA can use its TMDLs to clearly identify where it can focus its efforts to promote Best Management Practices to reduce nonpoint source pollution.

The Report’s TMDL Priority List

According to the Report, the Ohio EPA has completed 22 of 32 TMDLs for the Lake Erie watershed, with the 10 remaining TMDLs under development.⁷ However, many of those completed TMDLs were developed years before the new Impairment Status created for the Western Basin of Lake Erie regarding algae. The Draft Report does not list a schedule for reviewing these older TMDLs. Given the new information regarding the relationship between excess phosphorus, nitrogen, and algae, updating those TMDLs is vital to ensuring communities have the best guidance available on how to reduce their agricultural pollution.

Consider the following (nonexhaustive) table noting the dates of TMDL approval within the Maumee and Portage Basins:

TMDL	Date Approved by U.S. EPA	Pollutants Allocated by U.S. EPA
Auglaize River	September 23, 2004	Ammonia, phosphorus, pathogens, sediment
Toussaint Creek	September 22, 2006	phosphorus
Sugar Creek	May 8, 2007	bacteria
Beaver Creek	September 28, 2007	Nutrients (phosphorus and nitrate), bacteria
Blanchard River, select sections, and Riley Creek	July 2, 2009	Phosphorus, bacteria, sediment
Swan Creek	January 6 and October 25, 2010	<i>E. coli</i> , total phosphorus, nitrate, nitrogen, total suspended solids, total aluminum, total copper, ammonia, total dissolved solids, dieldrin, strontium, benzo(a)pyrene
Portage River and Rocky Ford	September 30, 2011	<i>E.coli</i> , total phosphorus, carbonaceous biochemical oxygen demand, sediment
Ottawa River	April 15, 2014	<i>E. coli</i> , total phosphorus, sediment

⁷ Supra FN 1, at J-12.

The OEC notes that Ohio EPA plans completion of TMDLs for many Western Basin tributaries between the present and 2021, including the Maumee River, the St. Joseph River, Fish Creek, the Tiffin River, Bean Creek, Lick Creek, and Turkeyfoot Creek. The OEC expects these TMDLs will include a discussion on how they can best accomplish their collective goal of limiting HABs in the Western Basin of Lake Erie.

However, the OEC believes that in the final version of the *2018 Integrated Water Quality Monitoring and Assessment Report*, the Ohio EPA should also include a schedule that discusses when it will update older TMDLs in the Maumee and Portage Basins to account for the new impairment status of the Western Basin.

Consider the TMDL for the Upper Auglaize River, issued in 2004.⁸ The TMDL does not discuss agricultural nonpoint source pollution in the context of the Lake Erie Western Basin. Ohio EPA needs to update these TMDLs to address the new impairment status.

Of course, the OEC does not expect the Ohio EPA to accelerate the update of old TMDLs before the agency develops TMDLs for watersheds that presently lack such a guiding document. However, if the Ohio EPA takes seriously its goal to “Incorporate HAB considerations into priorities (both PDWS use and ultimately Recreation use),” then it must develop a schedule to improve and replace old TMDLs that do not properly account for the Western Basin’s algae impairment status. The Draft Report is the perfect moment to outline that schedule, and updated TMDLs can serve as a key opportunity to highlight the ongoing voluntary activities throughout the Maumee and Portage Basins designed to reduce nonpoint source pollution. Updated TMDLs can also provide the public and policy makers with a clear perspective on water quality throughout the region.

Furthermore, if the Ohio EPA developed a schedule for updating its old TMDLs throughout the Western Basin, it could actually jump start future conversations to regulate nonpoint source pollution. If the legislature knew that the Western Basin TMDLs would be updated by a certain date, it would know it needed to pass legislation regulating nonpoint source pollution before those TMDLs were completed. Then, the Ohio EPA could implement new rules regulating nonpoint source pollution directly into the TMDL process (if the Assembly decided to give it that power).

Conclusion

The OEC recognizes the immense amount of work that has gone into developing the Integrated Report. The priority lists show that the Ohio EPA is taking seriously its role to implement TMDLs that protect the waters of the state, especially after the momentary delay in TMDL development due to unexpected legal precedent.

However, the OEC hopes that the Ohio EPA will consider our comments provided above and

⁸ See *Upper Auglaize River Watershed TMDLs*, Ohio Environmental Protection Agency, (2004), <http://epa.ohio.gov/portals/35/tmdl/UpperAuglaizeFinalTMDL.pdf>.

develop a clear plan for integrating the TMDL process for the Maumee and Portage Basins with the new Impairment Status for the Western Basin of Lake Erie regarding algae. If the state truly wishes to solve this important drinking water and water quality problem, it must take a holistic approach that revises and updates its guiding documents when necessary. Given the massive levels of phosphorus and nitrogen entering the rivers and eventually the Lake each year, it will not be easy to solve the problem. But with careful planning, the Ohio EPA can lead the state and the other state and federal agencies with whom it coordinates to protect the Western Basin of Lake Erie from HABs.

Respectfully Submitted,

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April 22, 2018

Subject: Ohio EPA's Draft 2018 Water Quality Report

To Whom It May Concern:

Friends of the Mahoning River (FOMR) is a not for profit, community organization whose mission is to advocate for the Mahoning River through education about the river and her watershed. FOMR advocates safe recreation on the river and envisions the restoration of the Mahoning River to its pre-industrial condition.

During the steel making heyday, the Mahoning River had nine fully integrated steel mills both drawing water to use in their industrial processes and discharging wastewater back into the river. At times, the river water reached temperatures in excess of 100 degrees Fahrenheit. The chemicals in the discharged wastewater included greases and oils, solvents, metals, and more. Much of the river ecology was destroyed; what fish could be found were mutated and diseased.

In the 1940s, the Mahoning river was essential to the United States in our war efforts during World War II. The river was also essential during the period of U.S. expansion and growth after the war. Not many thought about the water quality or ecology until such things as Rachel Carson's book, *Silent Spring*, Love Canal, and the burning of the Cuyahoga River brought environmental awareness to the forefront.

With the birth of the Environmental Protection Agency, many sources of pollution, coming from pipes and stacks, were addressed. In Ohio, many of our rivers have been restored via improved wastewater treatment standards, reducing or preventing non-point sources of surface water pollution, and the removal of dams on rivers with the associated contaminated sediments.

Restoration efforts for the Mahoning have not kept pace with many rivers in Ohio. Locations exist where contaminated sediments have resulted in health advisory bans warning citizens against contact with the sediments. Many of these areas are associated with the low head dams constructed by the steel making facilities that are now defunct. Today, they function only to accumulate contaminated sediments and act as major safety hazards for paddlers on the river; in some cases, resulting in the death of the paddlers.

Ohio EPA's Draft Water Quality Report

Upon review of the Ohio EPA's draft Water Quality Report, the FOMR observe that the Mahoning River continues to be on the list of impaired water bodies. Ohio EPA has yet

to complete the study of Total Maximum Daily Load for the mainstem of the Mahoning River. In the absence of the TMDL data, the attainment indicators such as aquatic life use and recreational use cannot be fully evaluated.

While per Section C7 and J2, there seems to be an internal Ohio EPA discussion about the effectiveness of the TMDL process, and planning to follow a new "Vision", will the TMDL assessment be completed for the Mahoning River, and if so, when?

The lower Mahoning and its tributaries do not appear in Table J-15, even though upper stretches were completed in 2011. If an alternative process is anticipated, such as one associated with planned dam removal, can you summarize what that might involve in current discussion? How would such an alternative process include local initiatives under way, and related activity such as the Youngstown Consent Decree?

Section L4. *Section 303(d) List of Prioritized Impaired Waters.* This table, which has prioritized Ohio's surface waters, has the Mahoning River Mainstem (Eagle Creek to Pennsylvania Border) listed as 1.68 square miles.

This does not seem to be correct. Is the area included in the assessment a factor evaluated in the priority points accumulated?

Recreation and Water Quality

Recreational use on the Mahoning River is on the rise. In 2017, ODNR hosted an Ohio Paddle on the Mahoning River; and the estimated number of boats on the river on that day, was 80. The city of Girard has completed the installation of a kayak/canoe launch on the Mahoning River; a celebratory paddle is scheduled for June 9, 2018. A kayak livery, expanding from the Cuyahoga River, is starting up in Trumbull County. The Village of Lowellville has an ambitious plan for riverfront recreation, including boating. Lawrence County PA, while outside of Ohio, has several initiatives encouraging paddle boating, and this attracts traffic on the lower Mahoning in Ohio.

Are people safe paddling the river? Contacting the sediments?

Water Quality and Biological Study of the Mahoning River

The Ohio EPA's Water Quality and Biological Study conducted in 2013-2014 has not been released to the public. Is this typical for the report to be released four to five years after the study is completed? When will it be released? When will the next Water Quality and Biological Study for the Mahoning River be conducted?

Ohio EPA is charged with protecting human health and the environment. **Does the Agency have maps showing where the contaminated sediments in the Mahoning River are located? Are there signs warning citizens of the health hazard? If not,**

are readily accessible maps or signs, or support for local agencies to offer them, planned?

The Mahoning River is considered by many in our community, including the Chamber of Commerce and the business community, as a valued asset; for economic development as well as a positive environmental attribute. FOMR envisions a restored river; but realizes assistance from the Ohio EPA is essential.

What other plans and timeline does the Ohio EPA have for the Mahoning River?

Friends of the Mahoning River are grateful, Ohio EPA, for all you do to protect the environment. But frankly, and especially considering the historic service of the Mahoning River watershed for our country, the subsequent environmental costs absorbed by the watershed community, as well as the continued and ongoing social struggles in our communities, FOMR feels the Mahoning River has been neglected, relative to other recreational and lifestyle watersheds.

The FOMR does not dispute prioritizing watersheds key to improving Lake Erie and water supply conditions such as the Maumee and Scioto above the Mahoning. However, FOMR believes it is time for the state, and the nation, to repay the Mahoning River by working to restore her water quality now...whatever it takes.

Sincerely,

Friends of the Mahoning River
9710 King Graves Road N.E.
Warren, Ohio 44484

Signed, on behalf of Friends of the Mahoning River

John A. Smith water quality committee
Don Rex Jan
Thomas M. Hoover
Julia Armstrong
Susan K. Helub
Stephanie Stevens
Colleen E. McKeon

Ohio EPA, Division of Surface Water
Attn: 303(d) Comments
P.O. Box 1049
Columbus, Ohio 43216-1049

Comments: Ohio Integrated report

Sent via email May 4, 2017

To: epatmdl@epa.ohio.gov

From: Sandy Bihn, Executive Director Lake Erie Foundation and Lake Erie Waterkeeper
sandylakeerie@aol.com

Comments to the Ohio EPA 'Integrated Report' prepared for USEPA to meet Clean Water Act Requirements.

Please consider the following comments:

1. Section C-6 fails to list local government and public drinking and wastewaters providers substantial funding for pollution control – both in drinking water treatment costs and capital improvements and wastewater treatment costs and capital improvements.
2. There is a statement in Section J 3 the report that “TMDLs were not developed to address the excessive wet weather loads delivered to Lake Erie.” This dooms all nutrient reduction plans for Lake Erie and other waters impaired due to algae. It is estimated that in 2017, 78% of the load entering Lake Erie came from nine rainfall events. This simply means that reductions during low flow will never come near the 40% reduction needs to reduce Lake Erie’s harmful algae. There should be a western Lake Erie TMDL scheduled that is designed to include all US western Lake Erie watersheds and would assess high flow nutrient – phosphorous and nitrogen inputs during high flow. This would include an implementation plan that has targets for high flow nutrient reductions.
3. On page one of the executive summary, there is a statement on the sources of nitrates which should include manure.
4. There should be an assessment for determining impairment for the central basin of Lake Erie which would be based on frequency and size of the dead zone along with if the dead zone is impacting the central basin public drinking water intakes.
5. The report does not follow the Clean Water Act provision for reasonable assurances to address pollution from non point sources and needs to do so.
6. It appears in the report that the Great Lakes Water Quality Annex 4 provisions are being used as a substitute for TMDL’s and other Clean Water Act requirements. The Agreements should instead be using and following the Clean Water Act, as required by law, instead of substituting with the Domestic Action plans which for Ohio, lack accountability and measurement.
7. Grad Lake St. Marys(GLSM) is Ohio’s largest inland lake. Ohio lists GLSM as impaired and has conducted a TMDL that was completed in 2008. The Clean Water Act requires that once there is a TMDL, there is an implementation plan that shows progress (or the lack of) to continue to ensure that over time progress is made to have Grand Lake St. Marys delisted. Ohio elected (there is

correspondence with USEPA on this) to substitute the implementation plan to a distressed watershed, which Ohio claimed would work better than the implementation plan.

GLSM has been posted for no contact for swimming for the past nine years. It has become clear that it was a mistake for USEPA to approve Ohio's deviation from the Clean Water Act/implementation plan process. What should have been done, is for Ohio to make the distressed watershed as part of the implementation plan with a requirement to report progress – or the failure of – and to take additional steps to reduce nutrient loadings, especially from manure into Grand Lake St. Marys. Monitoring shows that total phosphorous has gone down but dissolved reactive phosphorus – the driver of the algae, has not been reduced.

There is much economic and environmental consequences to the continuing toxic algae problem in GLSM. Clearly, Ohio's approach to reduce toxic algae in GLSM is not working. In fact, Ohio DNR is now proposing to dredge a part of the lake with a beach and put up a n air curtain to keep the waters of GLSM away from the beach – quite bizarre and certainly not reducing sources as required under the Clean Water Act.

This a request for Ohio to develop an Implementation plan for Grand Lake St. Marys as required under the Clean Water Act.

8. Ohio was required by USEPA years ago to develop nutrient standards which would be very helpful for assessing nutrient reduction progress. Phosphorous standards for rivers and lakes need to be developed in a stated and committed time frame as is required under the Clean Water Act.
9. It seems a bit contradictory and confusing for Ohio to acknowledge and commit to a 40% phosphorous reduction and a reduction for dissolved reactive phosphorous to have an 'acceptable' level of algae. Instead of using the 40% reduction in the western basin of Lake Erie which is part of Annex 4 in the Great Lakes Water Quality Agreement, Ohio has determined an alternate method of assessing when the western basin is no longer impaired. It seems that the 40% reduction etc. should be the benchmark for eliminating the impaired designation. Why did Ohio change from the 40% reduction for removing the impaired designation to an algae coverage formula?
10. Ohio in its assessment units and scoring has the lowest number of points allowable in the human health category. Human health is extremely important. Explain??
11. The ten year time frame for Tappan Lake to work through the process and to be delisted is too long.
12. This statement on Lake Erie nutrients in the report lacks a statement of measurement and accountability and specificity:
"13. Addressing Nutrients in Lake Erie Ohio is working to address its contribution to the problems in Lake Erie through: nutrient TMDLs on tributaries; numerous state initiatives to reduce nutrient loads from Ohio in accordance with the Domestic Action Plan; and active participation on Annex 4 (Nutrients) and other Great Lakes Water Quality Agreement (GLWQA) efforts. Effective lake management and coordinated implementation are needed to address the Western Basin of Lake Erie algal blooms and the Central Basin hypoxia issues, requiring a multi-state and binational effort. Currently, there are many parallel planning and management efforts ongoing at the state, federal and binational level. For the open waters of Lake Erie, respecting and working through the binational governance framework is the appropriate process and Ohio intends to aggressively pursue state measures that complement the process and are neither duplicative nor contradictory". This statement needs to include a time frame, accountability and measurement. The sections below it about the Collaborative Agreement for a 20% reduction by 2020 simply are not credible. Recently, there has been acknowledgement that after about ten years of efforts to reduce western Lake Erie nutrients, little to no progress has been made. Doing the same ole same ole is not acceptable.
13. Ohio's assessment units for Lake Erie and its TMDL analysis are as clear as mud to the average reader. It appears the scoring for recreation is low while for public drinking water higher. Both of

these should receive the highest points because of cyanobacteria/microcystin has very high toxicity that is dangerous for Lake Erie public water intakes and for all who swim or come in contact with the algae.

14. Western Lake Erie needs a TMDL and Ohio EPA should schedule one because of the threat to drinking water, human health, recreation and aquatic life. The voluntary agreement based path that Ohio is taking has no track record for success. Chesapeake tried agreements for thirty years and they failed. It was not until there was a TMDL that real progress was made.
15. Ohio needs to assert the reasonable assurance provisions of the Clean Water Act to address non point nutrient reductions in the western Lake Erie watershed.
16. The Auglaize and Tiffin Rivers should not be delisted because Heidelberg data shows that these two rivers are major sources of nutrients that are causing problems for Lake Erie. It appears that OEPA is delisting for low flow etc. and is not considering high flow when there is the most significant runoff to Lake Erie. Ohio's assessment system is fatally flawed when it fails to assess high flow runoff after heavy rains.



LITTLE MIAMI CONSERVANCY

Ohio EPA, Division of Surface Water
Attn: 303(d) Comments
P.O. Box 1049
Columbus, Ohio 46216-1049

May 4, 2018

RE: Little Miami Conservancy comments regarding the OEPA 2018 Integrated Water Quality Monitoring and Assessment Report

To Whom It May Concern:

The Little Miami Conservancy (LMC) appreciates the opportunity to comment on the Draft OEPA 2018 Integrated Water Quality Monitoring and Assessment Report (IR). LMC offers the following comments:

- 1) LMC would note that attainment of several watersheds throughout the State of Ohio is based on data older than ten years. Historical data is very important, but using this as a determination of present day attainment and the health of the aquatic ecosystem is of concern because of the dynamic conditions of lotic and lentic aquatic ecosystems. The anthropogenic effects of land use and development in watersheds can be detrimental to the health of the aquatic environment.

The Little Miami River, the first river in Ohio to be designated National and State Scenic River, is a highly desirable watershed for wildlife and for people to live and to recreate. Development of residences, commercial properties, and industry is ongoing in the watershed, adding loadings to wastewater treatment plants, increasing impervious surfaces, and suburban stormwater runoff.

The last comprehensive water quality monitoring sampling conducted by Ohio EPA of the lower Little Miami River occurred in 2007. The attainment status and TMDL for this portion of the river is based on that data. It is noted that Credible Level 3 sampling was conducted on the lower reach in 2012 by Midwest Biodiversity Institute/Center for Applied Bioassessment and Biocriteria (MBI), who was contracted with Hamilton County Metropolitan Sewer District, and this data did document impairment in areas Ohio EPA had previously not noted impairment. We understand Ohio EPA conducted some limited sampling of these same site sampled by MBI, and came to different conclusions.

It is unclear in the 2018 IR, where this data is discussed or how it fits into the attainment status for the lower Little Miami River.

Saving a National Treasure since 1967

It is of concern to the Little Miami Conservancy that Ohio EPA uses data older than 10 years to report attainment in the IR.

- 2) The OEPA 2016 Integrated Report contained a Long-Term Monitoring Schedule map depicting monitoring through 2027 for the State of Ohio. This map with the schedule for comprehensive water quality monitoring for Ohio appears to be missing from the 2018 report. The Little Miami Conservancy feels this schedule is imperative to maintain the high quality data the State of Ohio produces. The data generated by this type of monitoring, documents the health of our streams, rivers, and lakes for the safety of the citizens of Ohio who use our waterbodies for fishing, swimming, boating, and drinking water sources. Many environmental improvement projects and the efficient use of taxpayer dollars depends on this data.

Ohio is recognized nationwide for its quality aquatic assessment program. Monitoring of aquatic organisms provides detection of environmental concerns that may not be obvious through other monitoring methods. Will Ohio EPA provide a long-term monitoring schedule in the 2018 IR or will the schedule be provided in another format?

- 3) Ohio EPA has water quality data dating back approximately 40 years. It is high quality data that tells an important story of the challenges and efforts made by the State for its citizens to improve the quality of its waters. We may have misunderstood in the IR in section G, but it appears the Ohio EPA may be selectively evaluating only the latest 10 years of data for trend assessment rather than assessing the entire database for an assessment unit or watershed. Is this the intention of Ohio EPA? By reducing the database, removing historical data, Ohio EPA risks not catching long-term changes in trend assessment that may reflect decreases in attainment.

Again, the Little Miami Conservancy (LMC) appreciates the opportunity to comment on the Draft OEPA 2018 Integrated Water Quality Monitoring and Assessment Report.

LMC looks forward to your response to these concerns, and to continuing the historic partnership between OEPA and LMC that has made great strides in the protection and restoration of the Little Miami – a true national treasure here in Ohio.

Sincerely,



Eric B. Partee
LMC Executive Director

Saving a National Treasure since 1967



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Columbus, OH 43221-0561

Ohio EPA, Division of Surface Water
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May 4, 2018

To Whom It May Concern:

The Midwest Biodiversity Institute (MBI) has reviewed the draft Ohio "2018 Integrated Water Quality Monitoring and Assessment Report" released on March 22, 2018. MBI is a not-for-profit corporation specializing in applied research with aquatic bioassessments, water quality standards, monitoring and assessment, and state bioassessment program development. As part of our mission MBI has conducted in depth reviews of 25 state, three federal, and two tribal programs since 2002. These reviews have included the development and implementation of the monitoring and indicators needed to produce a biennial 305[b]/303[d] Integrated Report (IR). In addition, MBI has also conducted comprehensive watershed bioassessments in Ohio and other states that emulate the essential concepts and attributes of the Ohio EPA program that is reflected in the 2018 IR. It is from this base of experience that we offer the attached comments and suggestions for improving the draft report.

Historically, Ohio EPA has operated one of the leading state programs, now spanning 39 years. We believe that it is in the best interests of the State of Ohio and the many stakeholders with an invested interest in water quality to see that the IP reflects the many positive accomplishments achieved over that time period while at the same time providing an accurate assessment of recent trends. Ohio is one of the few states that can report at this level of detail and accuracy and we look forward to this level of quality continuing well into the future.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Chris O. Yoder".

Chris O. Yoder, Research Director
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**Comments on Draft 2018 Ohio Integrated Report
Submitted by Midwest Biodiversity Institute**

Monitoring to Support Impaired Waters Listings and TMDLs

Ohio EPA has operated an exemplary monitoring and assessment (M&A) program that is nearing 40 years for inland rivers and streams. This approach allows Ohio EPA to use M&A data and information to support *all* water quality management programs. States with lesser levels of rigor in their M&A and WQS programs are limited to producing a biennial IR and at a much lesser level of detail in terms of spatial detail and content. There is no question one the essential components of the Ohio program is the systematic implementation of M&A and the rigor in the spatial context and biological, chemical, and physical indicators upon which the assessments are based. However, the absence of a monitoring schedule is of concern as is the intent to scale back on the number of watershed and mainstem river assessments in 2018. While we understand the impact of the Supreme Court ruling on the TMDL program, an 80% reduction in what has been the baseline M&A effort for nearly 40 years raises many questions not only about the future direction of monitoring, but the Ohio EPA surface water program as a whole. We therefore urge the agency to reveal the intent of any changes to stakeholders, especially those who have come to rely on the outputs and outcomes of one of the most comprehensive approaches in the U.S. As it reads now the ***Ohio EPA Monitors Water Quality in Ohio And Reports its Findings*** discussion in Part A potentially provides a very misleading message about the future of the program that many stakeholders have simply expected to exist well into the future. There are many other concerns, more than we can state in these comments, but we do not see how any fundamental interruption in the design and execution of this program will allow the agency to effectively execute its mission of protecting and restoring water quality in support of measuring the attainability and attainment of designated uses.

The Ohio EPA program is rated as one of the most rigorous and comprehensive in accordance with the U.S. EPA program evaluation guidance *“Biological Assessment Program Review: Assessing Level of Technical Rigor to Support Water Quality Management”* (U.S. EPA 2013). The most recent review conducted in 2007 resulted in Ohio program attaining Level 4 (the highest) and a score of 98.1%. At least part of the score is the result of the agency being able to manage and sustain a mature M&A program at a spatial scale that meets the needs of being able to assess the effectiveness of water quality management programs, tracking trends, and responding to new threats. While the 2007 program review emphasized the inland rivers and streams program, it is quite evident that what was accomplished over three decades of development and implementation has trickled down to having similarly robust methods for assessing other waterbody types including wetlands, the Lake Erie Nearshore, and the Ohio River. Therefore, while we are not requesting for this to be discussed in the 2018 IR, the agency

needs to recognize how fundamental changes made in the near future will affect all aspects of future IRs and their water quality management programs.

Reference:

U.S. EPA. 2013. Biological Assessment Program Review: Assessing Level of Technical Rigor to Support Water Quality Management. EPA 820-R-13-001. Office of Water, Office of Science and Technology, Washington, D.C. 144 pp.

http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/biocriteria/technical_index.cfm.

Lake Erie Nearshore & AOCs

The reporting on beneficial use impairments in the Lake Erie Nearshore and Areas of Concern is well done and comprehensive enough, but we are concerned that new and emerging threats that are documented for drinking water supplies and recreation represents a threat to other designated uses including aquatic life. The toxic byproducts of cyanobacteria are toxic to fish and other aquatic life this we are recommending that it be recognized as a potential cause of impairment. While not a robust assessment, we had a small project in Maumee Bay in 2018 the results of which represented a backsliding to conditions observed in the early 1990s. Furthermore, one site had DELT anomalies far in excess of the BUI delisting criteria. Given the potential for at least chronic effects we advise looking more closely at the role of Mycrosystin in having adverse impacts on aquatic life use attainment in the nearshore of Maumee Bay and adjacent waters.

We are appreciative of the agency recognizing the vital role of habitat and stream health in dealing with the effects of excessive nutrient enrichment. The statement in Part J *“The long-term solution is to reduce sources of nutrients while holistically restoring stream health and improving the waterway’s ability to assimilate and utilize nutrients. This is also known as the stream’s assimilative capacity. Restoring stream health will not only reduce the amounts of nutrients that reach the receiving water body, but restoration of in-stream and riparian habitat supports a healthy ecosystem, builds resilience to climate change impacts and improves recreational opportunities”* is on target as is the listing of habitat as a TMDL eligible stressor. However, the use of the term “habitat” is almost completely absent in **Ohio’s Domestic Action Plan for Lake Erie** and many of the associated documents produced by the bevy of entities involved in assessing, modeling, and dealing with implementation practices to reduce nutrient loadings to Lake Erie. In our view the majority of these efforts are focused almost entirely on loading determinations without an apparent regard to the assimilative capacity of the watershed network. We suggest the agency exert some leadership in assuring that habitat is a primary factor in the management practices for reducing the adverse effects of nutrients in Lake Erie. If habitat continues to be relegated to a subsidiary role, then the attainability of the

BUIs in Maumee Bay and Lake Erie will no doubt be questioned which could lead to some undesirable outcomes in the current deregulatory environment.

Aquatic Life Use Attainment in Inland Rivers and Streams

As indicated earlier in our comments Ohio has one of the leading programs among states in the U.S. that allows the agency to produce something better than a simple statewide estimate of use attainment and non-attainment. Based on our experience in reviewing state programs, the analyses like that in ***Large Rivers are Making Progress Toward the 100 Percent Attainment by 2020 Aquatic Life Goal*** in Section A are the outcome of a nearly 40 year commitment to a robust M&A program and a level of spatial detail that matches the scale of water quality management. Many states, because of a lack of spatial detail in their M&A, over-extrapolate their results from many fewer monitoring sites (including those who employ statistical networks) resulting in not only a reduced accuracy in the application of those results, but a clear severance from meaningfully affecting water quality managements programs.

While we recognize the quality and integrity of the nearly 40 years of M&A on the large river assessment units, we are concerned about the expression of the most recent results in the 2018 IR. The lead in statement *“Ohio’s large rivers (the 23 rivers that drain more than 500 square miles) remained essentially unchanged in percent of monitored miles in full attainment compared to the same statistic reported in the 2016 IR”* is essentially correct. However, we see this section at least implying that 100% full attainment will occur by 2020, which means that a gain of 12.5% will need to “found” if the goal is to be attained. This section of the IR needs to take a step back and report what has actually happened since 2010 and also to include the full set of results back to 1980. Two graphics are provided to assist in that process and we have assessed the likelihood of actually improving beyond the 2008 full attainment rate of 93.1% in an article on the MBI website¹ (Figure 1). Instead, we see a decline of 5.6% between 2008 and 2016, which we also believe represents a leveling off of improvements seen prior to 2008 *at a minimum* and more likely an actual decline. We suggest that the agency modify the IR to recognize this and also the unlikelihood of meeting the 2020 goal especially given the current deregulatory climate. This also highlights the critical importance of maintaining the M&A level of effort otherwise the agency will lose the ability to credibly assess these trends into the future. This issue alone reaffirms our concerns about the pending 80% reduction in the level of sites evaluated annually beginning in 2018.

¹ A Retrospective on the Clean Water Act in Ohio: Is Today As Good As It Gets?
<https://midwestbiodiversityinst.org/publications/articles/a-retrospective-on-the-clean-water-act-in-ohio-is-today-as-good-as-it-gets>.

We are also concerned about the apparent decision to utilize only the most recent 10 years of assessment data to analyze trends. While we recognize the practical utility of a 10 year period as a “rule-of-thumb” for considering data as being applicable to a particular river or stream at a given point in time, there is no particular validity in that time frame. It should be applied differently to non-attaining vs. attaining streams and rivers and it should also consider the quality at the same time. We would not expect an EWH river to decline and if the stressor levels have not increased the quality should be the same in 10 years or 20 years. For assessing long term trends we strongly advise the agency to retain all of the years of assessment dating back to 1980 and simply adding the new biennium of results in each successive reporting cycle. If only the prior 10 years are assessed, then it will only be another reporting cycle before the peak attainment of 93.1% is lost from the analysis and providing an inaccurate assessment of decline or improvement. Again, to preclude misreading these trends we urge the agency to retain all of the biennial cycles and updating them to include the years in between 1980 and 2016. We would be willing to work with the agency to build such an analysis.

The HUC12 assessment shows a continuing improvement and we recommend including the results back to 1980 to provide a solid historical perspective. The attainment rate is well below the large river assessment units and due to the different degrees of success in controlling point and nonpoint sources of impairment.

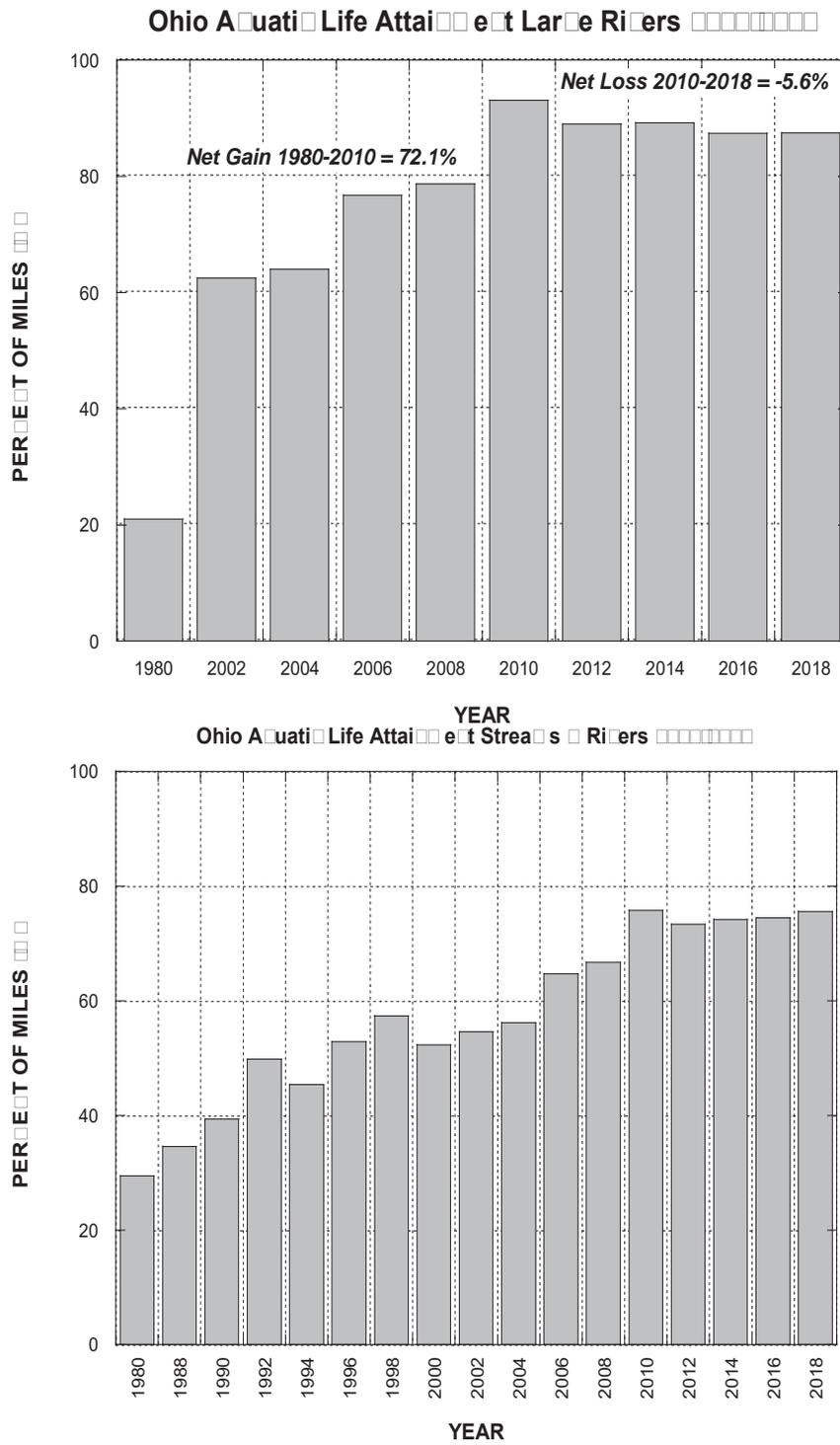


Figure 1. Trends in attainment of aquatic life uses in Ohio large river assessment units between 1980 and the 2002-18 reporting periods by Ohio EPA (upper) and for all stream and river units combined between 1980 and the 1988-2018 reporting periods (lower).

Friday, May 4, 2018

Ohio Environmental Protection Agency
Division of Surface Water
Attn: 303(d) Comments
P. O. Box 1049
Columbus, Ohio 43216-1049

To Whom it May Concern,

We appreciate the opportunity to comment on the Ohio Integrated Water Quality Monitoring and Assessment Report. Ohio's livestock organizations and farmers are neither opposed or supportive of an impairment designation for Lake Erie. Rather, we share the same goal of the Ohio Environmental Protection Agency (Ohio EPA) and the Ohio General Assembly, which is to improve Ohio's water quality standards and to ensure the highest quality of water both for today, and for the future. That is why our organizations continue to be cooperative, willing partners of the Ohio EPA, the legislature and other advocates in helping Ohio closely examine the issues and contribute to the efforts aimed at this goal.

Without a thorough understanding of the science that was used to determine the "impairment" of Lake Erie - or any of the other bodies of water – we cannot attest to, nor dissuade, from the scientific validity. As such our comments below are not meant to indicate that the use of Moderate Resolution Imaging Spectroradiometer through NOAA is an incorrect format. Instead the questions below are intended to help us better understand the process and science that was used to come to this determination:

- Based upon the use of satellite images for this process, is it implied that the size of the algae bloom is directly proportional to the toxicity of the bloom from a recreational stand-point?
- How was it determined that a threshold of 30% of the western basin open water unit area with a density of 20,000 cells/mL is acceptable?
- If a bloom covers less than 30% of the western basin open water but is far more dense in cyanobacteria cell count, is it still not impaired?
- On page F-34 the report mentions that the use of MODIS was the "first phase" of this process. Is there documentation on the next phase of this process?
 - Will there be an opportunity for input on future processes?

On page I-19 the report indicates the satellite images will be used in conjunction with information from "researchers at the Ohio State University/Stone Laboratory, University of Toledo and Bowling Green State University."¹ We appreciate the use of these tremendous academic assets in the development of a better understanding of the algae issue. The same page indicates that these universities were utilized in 2017 for water sampling.

- Was the information gathered at that time utilized in conjunction with the satellite information discussed earlier as part of the impairment designation?
 - If so, how was it utilized?
- Moving forward, will the impairment designation be based upon the "Phase 1" use of MODIS, or will it utilize research from these universities or will it be a combination thereof?

We understand and can appreciate the desire to separate out the assessment units in Lake Erie. Yet as previously mentioned, the challenge with this approach is as you become more targeted, accurate information becomes less available. Specifically, to have an assessment unit for the island shoreline, it would be appropriate to access information at this granular level. As such, we question the validity of having such a small assessment unit when the shape files

¹ Ohio Environmental Protection Agency, Division of Surface Water. *Ohio 2018 Integrated Water Quality Monitoring and Assessment Report*. March 2018. Pg.I-19.

available from NOAA are unable to differentiate between the island shoreline and the western basin open water as mentioned on page F-36.²

Agriculture understands its contribution to this issue, and it's important to note that livestock farmers have been working to be part of the solution for decades. In fact, it is an important reminder that the Livestock Environmental Permitting Program was established in December 2000 by Ohio's legislature to proactively manage the environmental impact of the expanding livestock facilities in Ohio. Livestock farmers have embraced this permitting program, which is among the most stringent in the nation, and they must adhere to the rules - established upon sound science and best management practices. Livestock facilities that fit the criteria for a Concentrated Animal Feeding Operation designation must be permitted and adhere to rigorous rules established to protect the environment and the communities in which they operate.

Over the years, many would argue that non-point agriculture has done more to protect the environment at its own expense than any other non-point contributor. That being said, regardless of farm size, livestock agriculture has embraced the need for continuous improvement of managing manure as a natural fertilizer and identifying new, innovative and cost-efficient ways to manage, store and apply manure as a natural fertilizer to contribute toward healthy and productive soil.

Again, we appreciate the opportunity to comment on the Ohio Integrated Water Quality Monitoring and Assessment Report. We share your goal of having a scientific process to designate impairment, and we ask for robust consideration of the points raised above as this moves forward.

Sincerely,



Ohio Cattlemen's
Association
10600 U.S. Highway 42
Marysville, OH 43040



Ohio Pork Council
5930 Sharon Woods Blvd.
Columbus OH 43229



Ohio Dairy Producers Association
2800 Corporate Exchange Dr.
Suite 260
Columbus OH



Ohio Poultry Association
5930 Sharon Woods Blvd.
Columbus OH 43231

² Ohio Environmental Protection Agency, Division of Surface Water. *Ohio 2018 Integrated Water Quality Monitoring and Assessment Report*. March 2018. Pg. F-36



Working together for Ohio farmers to advance agriculture and strengthen our communities.

May 4, 2018

Ohio EPA Division of Surface Water
Attention: 303(d) comments
P.O. Box 1049
Columbus, Ohio 43216-1049

Re: Ohio Farm Bureau Federation's comments on the draft 2018 Integrated Water Quality Monitoring and Assessment Report

Please accept Ohio Farm Bureau Federation's comments on the draft 2018 Integrated Water Quality Monitoring and Assessment Report (the "Report"). These comments will focus on the assessment for algae in Western Lake Erie ("WLE").

While we believe the Great Lakes Water Quality Agreement is a preferable plan for improving water quality compared to impairment, it is important to note that Farm Bureau has never opposed the impairment designation for WLE. Regardless of the impairment designation, our goal has been and will continue to be focused on the great work being done by Ohio's farmers, be it voluntarily or under enactment of laws such as Senate Bill 150 and Senate Bill 1, to reduce nutrient runoff.

We do however have some questions surrounding the methodology of the assessment tool for determining the open waters of WLE as impaired and offer the following comments and questions.

1. The draft Report presents the first phase of Ohio's assessment method for recreational use attainment due to the presence of algae in WLE.
 - What is Ohio EPA's plan for the next phase and what components will it contain?
 - When will that phase be available for review and comment?
2. The NOAA Experimental Lake Erie Harmful Algal Bloom Bulletin has a threshold for cyanobacteria detection of 20,000 cells/ml. The estimated cyanobacteria density is determined through the strength of the measured reflectance signal at multiple wavelengths.
 - What is the relationship between toxin production and cyanobacteria density?
3. According to the proposed assessment methodology, it is bad if the presence of cyanobacteria are at levels at or above the threshold for detection via the satellite images.
 - How does the presence of cyanobacteria adversely impact recreation?



Working together for Ohio farmers to advance agriculture and strengthen our communities.

- Why base the assessment method at a low cyanobacteria density? Why could it not be based on a medium level?

4. Current research being conducted by The Ohio State University at Stone Lab is showing that the ratio of cyanobacteria toxin in the water to the amount of cyanobacteria biomass present changes from year to year and within the summer. The highest toxin per biomass ratio routinely occurs at the start of the bloom and this ratio decreases throughout the summer as nitrate concentrations in the water column decrease. The result is that the composition of the bloom shifts from highly-toxic to low to non-toxic strains of *Microcystis*.

- The data again leads to the question – How does the presence of cyanobacteria in the later stages of a bloom adversely impact recreation?

We have concerns that impairment will slow the current efforts by Ohio's farmers as it creates uncertainty on what will be expected of them. Farmers will be hesitant to invest in new technologies and practices if they are not certain they are the same practices that may be required by impairment. We are also concerned that impairment will be a lengthy legal and regulatory process that could take until 2025 for implementation of an action plan to begin. This coincidentally is the same date that the Great Lakes Water Quality Agreement stipulates that all parties should have attained the 40 percent nutrient reduction goal.

Thank you for consideration of Ohio Farm Bureau Federation's comments.

Sincerely,

A handwritten signature in black ink that reads 'Adam J. Sharp'.

Adam J. Sharp
Executive Vice President
Ohio Farm Bureau Federation

AS/ts



Ohio EPA, Division of Surface Water
P.O. Box 1049
Columbus, Ohio 43216-1049
Attn: 303(d) Comments
via email EPATMDL@epa.ohio.gov

May 4, 2018

Dear Sirs and Mesdames:

The Ohio Corn and Wheat Growers Association (OCW), the Ohio Soybean Association (OSA), and the Ohio AgriBusiness Association appreciate the opportunity to provide comments on the draft Ohio's 2018 Integrated Water Quality Monitoring and Assessment Report, which includes the Clean Water Act Section 303(d) list of impaired waters. Together, OCW and OSA represent the interests of over 25,000 farmers across Ohio. These mostly small businesses are a critical component of Ohio's economy and create one out of eight jobs in the state. The Ohio AgriBusiness Association represents more than 225 companies that make up Ohio's fertilizer industry along with the grain, feed, seed, and crop protection industries serving Ohio agriculture.

We believe that to restore and maintain Lake Erie's water quality, that Ohio's top priority and primary area of emphasis must be the adoption of sound, practical measures and systems that, to the best of our knowledge and understanding, will make a positive contribution to the health of the lake. This should be the approach taken by all the stakeholders whose activities may be contributing to the lake's water quality problems, including but not limited to agriculture. Ohio agriculture is committed to this proactive approach, expanding on the strong and sustained history of actions we have taken that demonstrate this commitment, as explained below. We will do this independent of whether the lake receives an official Clean Water Act impairment designation or not, and we will do this despite the significant procedural, substantive and scientific concerns that we articulate below about the accuracy, validity, and therefore practical usefulness, of the 2018 report's proposed impairment designations. We respectfully request that you consider these comments, including the request of extending the comment period, while at the same time remain a full partner with us in support of our own ongoing and on-the-ground efforts to improve Lake Erie's water quality.

PROGRESS AND OUR ONGOING COMMITMENT

Water quality is, and has been, a top priority for Ohio's grain farmers. OCW and Ohio Soybean Council (OSC) fund research to increase the understanding of the relationships between agricultural practices and impacts on water quality, including algae blooms in Lake Erie. On an ongoing basis, we evaluate and recommend to our members throughout the state actions they can take to cost-effectively improve water quality, remain profitable, and continue to contribute to Ohio's economy.

The best basin-wide analysis that we are aware of reporting on how these and the many other efforts of farmers have expanded over time is from the USDA Natural Resources Conservation Service's (NRCS) 2016 Western Lake Erie Basin (WLEB) special study looking at the changes in conservation practice adoption on

cultivated cropland acres between the 2003-2006 and 2012 periods and issued in 2016¹. We are confident that the conservation practice adoption progress that farmers made over period has continued and likely grown considerably. That report found, for example, that:

- Cropland acres managed with one or more structural practice controlling erosion increased from 34 to 54 percent of acres.
- Cropland acres managed with an edge-of-field trapping practice, such as a filter or buffer, increased from 18 to 31 percent of acres.
- Nitrogen and phosphorus application methods improved. Acres on which all nutrient applications were incorporated in some manner (knifed, injected, tilled, or banded) increased. The percent of cropped acres on which nitrogen was incorporated at every application increased from 29 to 43 percent and on which phosphorus was incorporated at every application increased from 45 to 60 percent.
- About 71 percent of acres had a soil test within the last 5 years in the 2012 conservation condition.
- Use of precision agriculture techniques increased. Acres on which GPS was used to map soil properties increased from 8 percent to 36 percent of cropland acres. The use of variable rate technology increased from 4 to 14 percent of cropland acres.

Ohio agriculture, working in partnership with many stakeholders and the State of Ohio, have been aggressively engaged in efforts that are almost certainly building on and expanding this progress documented in the NRCS report. Since 2011, the Ohio Corn Marketing Program (OCMP), the Ohio Small Grains Marketing Program (OSGMP), and the OSC have invested more than \$3.5 million of farmer dollars in research and education to help mitigate nutrient-related problems in Ohio. These programs provide significant resources to research initiatives being conducted by The Ohio State University to better understand and improve nutrient-related conditions in Ohio. These include:

- Participating in edge of field research to identify how phosphorus leaves Ohio fields and evaluate management practices to determine the best management practices (BMPs) that will effectively limit phosphorus transport from farmers' fields to streams.
- Supporting fertilizer placement research.
- Funding updates to the Ohio portion of the Tri-State Fertilizer recommendations which will be updated this year.
- Providing nutrient management plan (NMP) development assistance to Western Lake Erie Basin (WLEB) farmers.
- Revising the Best Management Practices Manual.
- Identifying the economics associated with BMPs to help encourage adoption of cost-effective BMPs.

We also provide financial and other support to the 4RTomorrow awareness campaign led by the Ohio Federation of Soil and Water Conservation Districts, which provides education to Ohio farmers on nutrient

¹ U.S. Department of Agriculture, Natural Resources Conservation Service. 2016. Effects of Conservation Practice Adoption on Cultivated Cropland Acres in Western Lake Erie Basin, 2003-06 and 2012. 120 pp.
<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/ceap/pub/?cid=nrcseprd949606>

stewardship. We support the voluntary 4R Nutrient Stewardship Program's fertilizer retailer certification program led by the Ohio AgriBusiness Association and The Nature Conservancy. This program has certified 37 branch facilities, covers 1.9 million acres and serves 3,580 clients in the WLEB as well as additional facilities, clients, and acres throughout the state.

Additionally, our organizations continue to support our members located in the WLEB in their efforts to comply with the Ohio Domestic Action Plan, the Ohio Clean Lakes Initiative, Ohio Senate Bill 1, Ohio Senate Bill 150, and other nutrient reduction efforts.

COMMENTS ON THE DRAFT REPORT

As we support our members in these nutrient reduction efforts, we are concerned with Ohio EPA's sudden about-face regarding inclusion of the open waters of the WLEB on the 2018 Draft Ohio 303(d) list, based on a review of satellite imagery. We are concerned that this change in direction will divert attention from the collaborative efforts of the United States and Canada to meet the goals of Annex 4 of the Great Lakes Water Quality Agreement (GLWQA) to restore and protect the waters of the Great Lakes. Annex 4 has already established a phosphorus "diet" based on multiple lines of scientific investigations. Efforts need to be directed at implementation of nutrient reduction efforts to meet this "diet". With the Draft Integrated Report, Ohio has proposed a novel (and as far as we know, not yet peer reviewed) approach to link estimates of bloom size and frequency to impairment. We recognize that many stakeholders believe that the next step after the impairment listing should be development of a TMDL. A TMDL will require additional time and will slow nutrient reduction progress and likely increase the cost to all sources to achieve the desired outcome.

We are requesting an extension of the comment period so that we can obtain additional information to better understand the approach that Ohio EPA used to make the impairment listing and whether there are additional data that should be considered as part of this listing. **We also offer the following technical and procedural comments** on the Draft 2018 Integrated Report for your consideration. Given the scientific and policy concerns associated with this document, we believe that **additional stakeholder outreach** is warranted. We also believe that the open waters of WLEB, if they are to be declared "impaired" in the final report, should be placed in **Category 5-alt to reflect the ongoing efforts to restore WLEB and reduce phosphorus loads in the tributaries.**

[Relationship of New Targets to Annex 4 of the Great Lakes Water Quality Agreement](#)

The U.S. EPA's Great Lake National Program office coordinates the effort to comply with the GLWQA. The most recent update to the GLWQA included Annex 4, which required, among other things, updates to the phosphorus loading targets for the open waters of each of the Great Lakes and a determination of appropriate loading allocations (by country) to achieve the Lake Ecosystem Objectives. For the nearshore waters, load reductions targets are required for priority watersheds. The revised Lake Erie loading targets and objectives were finalized in 2015. The result is a commitment from the U.S. to reduce phosphorus loading to the western and central portions of the lake by 40 percent, from 2008 levels (to meet the 2012 threshold for algae bloom severity at a frequency of nine out of ten years).

In response to the update to the GLWQA, a U.S. Action Plan for Lake Erie was developed, with input from each impacted state, including Ohio. Each entity developed a Domestic Action Plan that includes specific actions to meet the Annex 4 reduction goals.

The 2018 Draft Integrated Report states that Ohio EPA requested input from various researchers regarding metrics to be used to provide a “scientifically relevant determination of impairment” using targets to meet these Annex 4 goals. Ohio EPA appears to have concluded that this can be achieved by assuring that the algae bloom is not greater than what occurred in 2004 and 2012. As discussed below, Ohio EPA’s methodology used to support the nutrient impairment designation has not been made available to the public for review and comment. No data or technical justification was provided in the Draft 2018 Integrated Report. Nor did the report provide the linkage between this new methodology and the Annex 4 bloom severity target. We believe it is critical for stakeholders to have the opportunity to review the data and technical justification before the open waters of the lake are declared impaired. This is particularly important because the same target (and linkage) will need to be used to assess when the lake is no longer impaired and is meeting the Annex 4 goal. A peer review process that includes researchers that informed the GLWQA 2012 threshold for algae bloom severity seems to be in order.

Procedural Concerns

OEPA’s Proposed Nutrient Impairment Designation of the Open Waters of the Western Basin of Lake Erie is Missing Several U.S. EPA Procedural Requirements.

Ohio EPA’s Draft Integrated Report does not indicate that the designated uses of the open waters of the WLEB are not being met or are otherwise threatened. Although the report provides a summary of events reflecting recurring water quality problems (algal blooms) in the open waters: there is no indication that the Agency substantiated the conclusion that water quality standards are either not being attained or are threatened or prepared a Section 301 nonpoint source assessment identifying impairment or threats to water quality standards attainment from nonpoint source pollution. In addition, there appears to be no explanation in the report for the decision to base the impairment determination exclusively on limited satellite imaging data, particularly when that data collection/analysis process has not been *demonstrated* to satisfy the level 3 credible data standard required by RC 6111.52(C).

U.S. EPA’s rules require that Ohio EPA consider “all existing and readily available water quality-related data and information” when making impairment listing determinations and submit with all final impairment listings to U.S. EPA, a rationale for any decision not to consider such data and information. Table D-3, Description of the data used in the 2018 IR from sources other than Ohio EPA, appears to be incomplete, as it does not include the satellite image data.

In addition, under R.C. 6111.56(B), Ohio EPA is prohibited from listing waters of the State as impaired without first demonstrating that the failure to meet applicable water quality standards is not due to the existence of naturally occurring conditions in the open waters of the Western Basin. Ohio EPA has not addressed the complicated issues of climate change or global warming in the Draft Integrated Report. Even if the phosphorus load reduction targets anticipated under Annex 4 were to be realized, some consideration of these factors in the Integrated Report is warranted and these factors may lend themselves to a Category 5-alt determination.

Ohio EPA's Methodology Used to Support the Nutrient Impairment Designation of the Open Waters of the Western Basin has not been Made Available to the Public for Review and Comment.

The proposed impairment designation is based on Ohio EPA's finding that algal cell count/density in the open waters of the Western Basin frequently exceeded a level (20,000 cells/ml) established as a "nominal floor" by the National Oceanic and Atmospheric Administration (NOAA) to control the generation of cyanotoxins.² Using satellite imaging data collected by NOAA for the open waters on certain (clear) days from July through October between 2012 and 2017, Ohio EPA calculated the number of 10-day time frames when the algal cell count level exceeded 20,000 cells/ml over 30% or more of the open waters.³ All of the open waters of the Western Basin were then declared impaired because *some* areas had more than three 10-day periods where they exceeded this standard in each of the past six years.⁴ There is no explanation in the report showing how Ohio EPA developed this methodology.

This methodology, which Ohio EPA has not used previously to support any nutrient-based impairment listing of Ohio's waters, has not been subjected to meaningful notice and opportunity for engagement by interested stakeholders. 40 CFR 25.5(b)(2), which prescribes the overarching public involvement requirements for state environmental agencies, requires that agencies provide the public with the relevant information "at the earliest practical time," and states that fact sheets and other data summaries "shall not be a substitute for public access to the full documents."

Ohio EPA's process for listing impaired waters, including the public engagement aspect, has unfortunately lagged behind its TMDL process. Whereas HB 49 and OAC 3745-2-12 prescribe detailed procedures for the development of TMDLs, Ohio EPA does not have a rule that defines the procedures the Agency must follow when developing a listing of impaired waters under Section 303(d) of the Clean Water Act. Nor does Ohio EPA have a rule setting forth the data and information that must be reviewed and shared with the public to support determinations of potential impairment.

Ohio EPA does not have a methodology to comply with 40 CFR 130.7(a), which requires that "the process for developing section 303(d) lists **and public participation** be described in the state's continuing planning process under section 303(e)." *Guidance for 1994 303(d) Lists*, November 26, 1993. (Emphasis added). U.S. EPA's guidance regarding the need to timely and fully engage the public in impairment decision-making was updated as recently as January 23, 2018, where the Agency reaffirmed the mandate that "EPA and the states actively engage the public...as demonstrated by documented, inclusive, transparent, and consistent communication."⁵

Ohio EPA's engagement with the public on the proposed impairment designation of the open waters of the Western Lake Erie Basin is insufficient. The Draft 2018 Integrated Report itself acknowledges that only "**much** of the data used in the report have been presented to the public." It does not say "all," or even "most." The report does not provide any of the NOAA satellite data (or indicate where it is available), does not indicate Ohio EPA's basis for concluding that the (post-2012) data meets level 3 credible data

² Draft Integrated Report, Section F.4, page F-34

³ Draft Integrated Report, Section F.4, page F-36

⁴ *Id.*

⁵ Impaired Waters and TMDLs: Working with Partners and Stakeholders. January 23, 2018.

standards, and does not describe the basis for the Agency's adoption of the 20,000 cells/ml, 30% coverage for 10 days metric. The lack of communication on these (and other) critical components of Ohio EPA's decision-making compromises the ability of the public to meaningfully participate in the process.

Developing Satellite-Based Numeric Water Quality Standards to Define Nutrient Impairment in the Open Waters of the Western Basin of Lake Erie Should be Preceded by Rulemaking.

Developing a new numeric 10-day algal cell count/density metric as the standard to define nutrient impairment for the open waters of Lake Erie constitutes the *de facto* establishment of a new nutrient-based, numeric water quality standard for the Lake. Yet this standard has not undergone notice and comment rulemaking, as required by RC 6111.041 and RC Chapter 119.

RC 6111.56(C) states that narrative standards are to be established when numeric standards *cannot* be established or to *supplement* existing numeric standards. U.S. EPA's rules provide the same limitation. 40 CFR 131.11(b). Ohio EPA's existing narrative "free from" standards (OAC 3745-1-04) do not shield the Agency from the requirement to develop numeric standards when possible, using proper notice and comment procedures for rulemaking. Were the law otherwise, Ohio (and other states) could circumvent the protections of notice and comment rulemaking for numeric standards by relying solely upon vague narrative standards, implemented using numeric water quality criteria documents as "guidance" or "interpretation."

The development of a new, satellite-based, algal cell count/density numeric standard for defining impairment in the Lake Erie open waters constitutes the establishment of a new standard. However, under Ohio law (R.C. 6111.56(B)), such impairment decisions must be based on actual or threatened nonattainment of *existing* water quality standards, not on actual or threatened nonattainment of *new, unpromulgated* standards that are an "interpretation" of narrative standards promulgated many decades ago before scientific improvements enabled numeric standards to be developed.

Ohio EPA's new satellite-based, algal cell count/density numeric standard should undergo the rulemaking procedures set forth in RC Chapter 119 before the standard is used to assess the impairment status of the open waters of the Western Basin. That is the rule of law established by the Ohio Supreme Court in *Fairfield Cty. Bd. of Comrs. v. Nally*, 143 Ohio St.3d 93 (2015). That case involved the same enigmatic narrative water quality standard — "waters shall be free from nutrients...in concentration that create nuisance growths of [algae]" (OAC 3745-1-04) — that is putatively being used as the basis for the Agency's proposed Lake Erie open water impairment designation. In that case, Ohio EPA asserted that non-rule derived numeric standards for phosphorus, taken from a 1999 guidance document, were a lawful basis for regulatory decisions.

It is important to note that the Court's holding in *Fairfield County* had two independent bases: the establishment of a numeric nutrient standard triggers Ohio EPA's obligation to promulgate a rule under *both* R.C. Chapter 119 *and* R.C. 6111.041. As regards Chapter 119, there can be no dispute that the proposed Lake Erie designation has a far broader application than the phosphorus standard at issue in *Fairfield County*—which applied only to point sources in the Big Walnut Creek watershed— but which the Court nevertheless found to have the general and uniform effect of a rule. Furthermore, just as in *Fairfield County*, Ohio EPA's new 10-day algal cell count/density metric "does more than simply aid in the interpretation of existing rules and statutes. Instead, it prescribes a legal standard that did not previously

exist.” Also, as in *Fairfield County*, this new standard has a general and uniform effect even though it will not be implemented until a TMDL and NPDES permit, nutrient management plan, or other regulatory steps are taken.

The parallels of the proposed Lake Erie open waters designation with the second basis of the Supreme Court’s holding in *Fairfield County*—R.C. 6111.041 requires Ohio EPA to promulgate water quality standards as rules—are even closer. Acknowledging that it had never promulgated a numeric standard for phosphorus, Ohio EPA nevertheless utilized a number taken from a technical guidance document (*Association Between Nutrients, Habitat, and the Aquatic Biota in Ohio Rivers and Streams* (Ohio EPA, 1999) to develop a *de facto* phosphorus WQS (0.11 mg/L) that it applied to the Big Walnut Creek watershed. The Supreme Court held that such a “target value” for all water bodies in the Big Walnut Creek watershed “clearly constitutes a standard of water quality’ for ‘waters of the state of Ohio’ within the meaning of R.C. 6111.041,” and was, therefore, first required to be promulgated as a rule.

The 10-day algal cell count/density metric utilized in the Draft 2018 Integrated Report is a water quality standard, just as was the phosphorus target value of 0.11 mg/l taken from the 1999 Association Report. Unless and until it is formally promulgated by Ohio EPA as a rule, it is not appropriate or lawful for the Agency to use it as such. As the Supreme Court held in *Fairfield County*, when state agencies bypass formal rulemaking “affected persons are denied access to the process that the General Assembly intended them to have, *i.e.*, the early, informed, and meaningful opportunity to challenge the legality of the standards...and the underlying assumptions, data, logic, and policy choices that Ohio EPA made in developing the standard.

Total Maximum Daily Load (TMDL) Categories

The Draft 2018 Integrated Report discusses EPA’s new 303(d) vision. This vision resulted from U.S. EPA’s and states’ frustration over perpetual litigation (“deadline suits”) that were focused on churning out TMDLs at the expense of really assessing whether those TMDLs were the most effective way to achieve actual water quality improvements.⁶ One particularly important aspect of U.S. EPA’s new vision is the “Alternatives Goal.” It states that “By 2018, States [should] use alternative approaches, in addition to TMDLs, that incorporate adaptive management and are tailored to specific circumstances where such approaches are better suited to implement priority watershed or water actions that achieve the water quality goals of each state, including identifying and reducing nonpoint sources of pollution.”⁷ According to U.S. EPA, because so many TMDLs have been litigation-driven, “States and EPA have not always had the opportunity to objectively evaluate whether a TMDL would be the most effective tool to promote and expedite attainment of State water quality standards.”⁸ This admirable goal thus envisions that States may give certain impaired waters a lower priority ranking for TMDL development so that alternatives designed to achieve water quality standards may be pursued in the near term. The waterbodies would remain on the 303(d) list and may ultimately require a TMDL if alternative approaches do not fully attain water quality standards.⁹ But in the near term, the waterbodies would receive a “5-alternative” or “5-alt”

⁶ See Draft Integrated Report at C-28.

⁷ US EPA, A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program, at 9 (Dec. 2013).

⁸ *Id.*

⁹ See *id.*

designation and a lower priority ranking while the State pursues alternative approaches for restoring water quality.¹⁰

In furtherance of U.S. EPA's new vision, Ohio EPA prepared a 303(d) Vision Implementation Plan and submitted it to U.S. EPA for final concurrence in August 2015. Ohio's plan states that Ohio EPA plans to use alternative approaches to TMDLs "designed to address specific impairments caused by pollutants such as phosphorus[.]"¹¹ Potential alternative approaches include Nine Element Watershed Plans, National Pollutant Discharge Elimination System (NPDES) permit revisions, funding installation of BMPs, and supporting implementation of new rules.¹² Despite Ohio EPA's stated intent to use alternative approaches to address nutrients, the Draft 2018 Ohio Integrated Report admits that "Ohio does not have any [Assessment Units] listed under 5-alt in this report but anticipates using this subcategory in the future."¹³ Ohio EPA's decision not to give a "5-alternative" designation to the open waters of Lake Erie is especially puzzling given that the State is already pursuing just the sorts of alternative approaches that it indicated it would pursue in its 2015 303(d) Vision Implementation Plan.

Specifically, the Draft 2018 Ohio Integrated Report explains that the State is addressing nutrient problems in Lake Erie using a variety of mechanisms, including nutrient TMDLs for tributaries; state initiatives to reduce nutrient loads in accordance with the Domestic Action Plan; and active participation in Annex 4 and other GLWQA efforts.¹⁴ As the State recognizes, several "parallel planning and management efforts" are underway at the state, federal, and bi-national levels.¹⁵ For the open waters in particular, "respecting and working through the bi-national governance framework is the appropriate process," and under that framework, "whole lake management plans are developed, implemented and tracked."¹⁶

Multi-state and bi-national efforts are not limited to the GLWQA. Recognizing that Annex 4 does not specify timeframes for implementation and restoration goals, Ohio entered into the Lake Erie Collaborative Agreement with Michigan and Ontario in 2015.¹⁷ This important development allows the signatories to "get a head start on the Annex 4 process and hasten efforts to improve water quality in Lake Erie."¹⁸ To that end, Ohio is striving to meet the Collaborative Agreement's phosphorus reduction goals of 20 percent and 40 percent by 2020 and 2025 respectively.¹⁹ Finally, Ohio EPA has already completed TMDLs for 22 of the 32 watersheds that feed into Lake Erie, and TMDLs for the remaining 10 watersheds are under development.

The Draft 2018 Integrated Report also catalogs the various State-based nutrient reduction efforts, which include implementation of the Statewide Nutrient Reduction Strategy; nutrient reduction projects utilizing \$13.9 million in grants; three separate pieces of legislation aimed at POTWs, fertilizer and manure application and education, sewage sludge application, and reporting of nutrient loadings; and various workgroup and task force efforts.

¹⁰ See Draft Integrated Report at J-1.

¹¹ Plan at 11.

¹² See *id.*

¹³ Draft Integrated Report at J-1.

¹⁴ See *id.* at J-10.

¹⁵ See *id.*

¹⁶ *Id.* at J-10 to J-11.

¹⁷ See *id.* at J-11.

¹⁸ *Id.*

¹⁹ *Id.*

In light of these extensive approaches to addressing impairments caused by phosphorus, the State should consider designating the open waters of Lake Erie as “5-alternative” and assigning a lower priority ranking for those waters. While there is more work to be done to restore water quality, the State should employ an adaptive management approach and allow these alternative approaches a chance to achieve water quality goals. It should not reflexively head straight down the TMDL path.

We believe that Ohio EPA should provide additional information to the public prior to using the new satellite data – based methodology to determine that the open lake waters are impaired. We request that the data and associated analysis used in this determination be made publicly available for all interested stakeholders. We also request a technical analysis of the interconnectedness between this new method and the state’s obligation under Annex 4 of the GLWQA. Ohio EPA’s engagement with the public on the proposed impairment needs additional time prior to the finalization of the Draft 2018 Integrated Report.

Thank you for your consideration of these comments.



Kirk Merritt
Executive Director
Ohio Soybean Association



Tadd Nicholson
Executive Director
Ohio Corn and Wheat



Christopher Henney
President and CEO
Ohio Agribusiness Association

May 4th, 2018

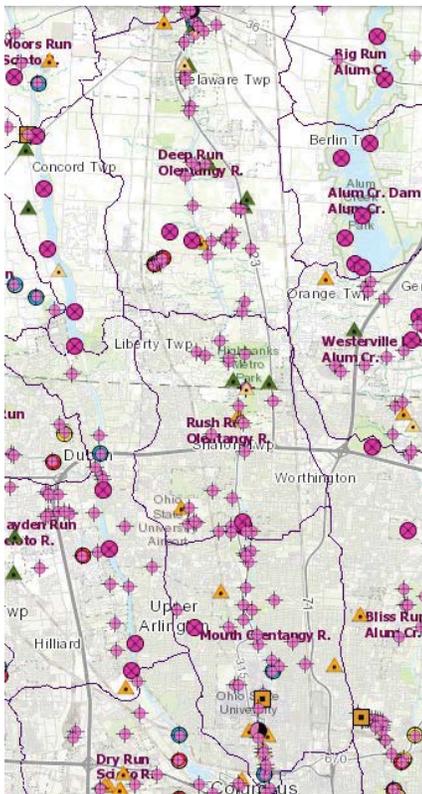
Ms. Tiffani Kavalec
Chief, Division of Surface Water
Lazarus Government Center
10 W. Town St., Suite 700
P.O. Box 1049
Columbus, Ohio 43216-1049

Dear Ms. Kavalec,

The Friends of the Lower Olentangy Watershed (FLOW) have reviewed the draft 2018 Integrated Assessment Report and continue to have concerns about the treatment of historical data and how its arbitrary omission or inclusion affects the impression of actual water quality in a watershed.

1. Per page G-1 (Background and Rationale), FLOW understands that Ohio EPA has limited resources and cannot study every watershed on a 10 year rotation. We also acknowledge that using historical data as stated "some earlier data collected between 2003-2006 were retained for specific watershed and large river assessments" is necessary and can be used if the director has identified compelling reasons as to why data are credible.

FLOW requests that Ohio EPA continue to utilize historical Olentangy River Data in Integrated Reports unless newer data to replace it is available. Of all the 2003-2004 Olentangy watershed data, Ohio EPA chose to use include only one data point (V04Q0 - Downstream of Bill Moose Run).



"Keeping the Olentangy River and its tributaries clean and safe for all to enjoy, through public education, volunteer activities, and coordination with local decision-makers".

All the sites from Ohio EPA's monitoring efforts in the Deep Run, Rush Run and Mouth of the Olentangy River 12 Digit HUCs from the 2003-2004 Technical Support Document could have been included in this report. The lack of data on the Olentangy Tributaries gives a misleading picture of the health of the watershed.

The omission of data has resulted in a misleading report of the water quality of the Olentangy based on previous Ohio EPA reports. Previously the Deep Run HUC had the highest water quality as a designated Exceptional Warmwater Habitat and a State Scenic River, this portion of the Olentangy needed minor restoration. Using Ohio EPA's 2018 Integrated Assessment Report would lead some to prioritize their efforts solely in this Hydrologic Unit Code (HUC).

We appreciate all that Ohio EPA's Division of Surface Water is doing to improve water quality and request that you conduct a reassessment of the IR 2018 for the Olentangy to include all the 2003-2004 data. And possibly include the 1999 sampling data as well.

2. FLOW also requests that you return the water quality app to the Geographic Information System service so that we can have access to all Ohio EPA data again. This will be helpful to FLOW and our partners in assessing priorities for projects for water quality improvements, many of which are needed in our urban tributaries.

3. FLOW noticed errors in how Ohio EPA is assigning priority points in the list of Assessment Units in Section L. Specifically our concern is about how priority points, listed in Table J-3 (page 241) for Aquatic Life Use and Recreational Use are assigned.

- 1 point for scores between 0-20
- 2 points for scores between 20.1-100 should have 4 points
- 3 points for scores between 100.1-200 should have 2 points
- 4 points for scores between 200.1- 700 should have 3 points

Are these merely typos in the report or were the priority points for each assessment unit miscalculated?

4. Please explain what "Category 4c Impaired not a pollutant" means? Specifically, FLOW is concerned about what this means for Brandige Run- Olentangy River 4 Ch.

5. Based on the Slide Presentation on April 20, 2018 shouldn't the Olentangy River be considered a large river since it is over 32 miles long and has a drainage area greater than 1000 square miles?

6. Rush Run HUC (06001 11 02) is listed on page L-27 as Category 1it for Aquatic Life Use. Since there is no date for this 12 digit HUC, shouldn't the category be 3it (Use attainment unknown, TMDL conducted at HUC 11, not enough data to assess this Assessment Unit (AU))?

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7. FLOW requests an estimate of the financial and staff resources that Ohio EPA would need to return to a 10 year watershed assessment schedule. The data that Ohio EPA produces is invaluable and is needed by watershed groups and municipalities to prioritize restoration efforts. We believe the public should know how the current resource situation will affect Ohioan's long term water quality improvements.

Thanks to all the unsung heroes in the Division of Surface Water for their help in protecting our water quality.

Sincerely,

A handwritten signature in blue ink that reads "Laura Fay".

Laura Fay
FLOW Science Committee, Chairwoman

"Keeping the Olentangy River and its tributaries clean and safe for all to enjoy, through public education, volunteer activities, and coordination with local decision-makers".

From: Eric Paetz
To: [EPA TMDL](#)
Subject: comments on the draft list of impaired water bodies
Date: Wednesday, April 25, 2018 6:46:47 PM

My wife and I are an Ohio residents and have been living along Lake Erie our entire lives. We have been spending our Summers since 1980 on the shores of the Western Lake Erie Basin. We are both active and spend significant time on the Lake during the warm weather.

We have have personally observed the positive effects of efforts made over the last 30-40 years in cleaning up the lake. We've also watched over the last 10 years the onset of the Summer algae season destroy that work. It starts as early as mid-July with the water turning a pale green as the little algae spores begin to drift eastward from the western portion of the lake.

Usually by early August, the lake has turned a consistency of pea soup due to the high concentration of algae in the Western Basin. That is not an exaggeration. The depth of the green soup varies but I'd say it it's as deep as 4-6 feet. I stopped immersing in the lake during algae season after I became aware of the toxins in the water. We do not allow any of our children or pets into the water, usually from late July through the end of the October, until the advent of cold weather kills the algae.

The thick green mats of algae form on all of the beaches, and the rest sinks to the bottom of the lake every season. A few years ago the Toledo water system was impacted significantly. Our enjoyment of the lake during the best days of the year is limited from late May through the end of June due to the recurring bloom. Our water bill and health are impacted by the chemicals my municipal water system introduces to kill the algae.

This problem is not recent. We remember growing up in Cleveland and the bad taste in the water during the summer because of the treatment of the water due to algae. The human and economic costs of this man-made issue are significant and I believe that we can afford to spread the costs of mitigating the issue, for both farmers, municipal sewer systems and state residents.

We hope that this issue can be addressed at the regional level to include the other States that contribute to the algae growth and also our neighbor Canada. In the mean time we applaud your recognition of this issue and hope that you can solve it. However, if you should bend to the will of fertilizer lobbyists or fail in your effort, we'll be petitioning our members of Congress and the Federal EPA to take over the job of cleaning up this disgusting and unhealthy problem.

Good luck and you have our full support (for now).

Yours Sincerely,
Catherine and Eric Paetz
3237 Chadbourne Road
Shaker Heights, Ohio
44120

From: William Ringo
To: [EPA TMDL](#)
Subject: Comment Ohio Integrated Report
Date: Friday, May 04, 2018 1:28:51 PM

RE: Comment on Ohio Integrated Report 2018

Grand Lake St. Marys(GLSM) is the largest inland lake and is in the most degraded watershed in Ohio. Ohio lists GLSM as impaired and has conducted a TMDL that was completed in 2009. In addition, in 2011 the GLSM watershed was labeled as "distressed", a designation it shared alone.

The Clean Water Act requires that once there is a TMDL, there is to be an implementation plan developed that shows measureable progress(or lack there of) that would assure the eventual delisting of GLSM as impaired. Moreover, to be examined for progress after 10 years.

Ohio elected to substitute the Implementation Plan to a "distressed watershed" designation, which Ohio claimed would work better than the Implementation Plan.

Since then GLSM continues to be posted for "NO CONTACT" with the water! It now is clear that it was a mistake for the USEPA to approve Ohio's deviation from the CWA/Implementation Plan process. Ohio needed to make the "distressed watershed" as part of the Implementation Plan with the requirement to report progress or failure and to take additional steps to reduce nutrient loadings into GLSM, especially animal manure.

Monitoring data, collected for OEPA at the city of Celina's PWS raw water intake, demonstrates the continued increase in pollution. The Ohio Department of Health's threshold for posting a health advisory for microcystin(HAB's) is 6ppb. In the summer of 2017 toxic algae counts reached a level over 196ppb. It must be pointed out that GLSM is the public drinking water source for the citizens of Celina at and ever increasing cost to purify.

There is much economic, quality of life, and environmental consequences to the continuing toxic algae problems in GLSM. The current approaches to reduce these threats is not viable or acceptable.

We are requesting the USEPA revisit and require a CWA Implementation Plan for the GLSM watershed that will provide for the recommended reductions(measureable) in all pollutants into GLSM.

Respectfully,

Bill Ringo, Treasurer
Guardians of GLSM

From: Sheelagh McCarthy
To: [EPA TMDL](#)
Cc: [Bill McCarthy](#); [Debbie McCarthy](#); [brodrick coval](#)
Subject: Public Comment regarding Lake Erie's impaired status
Date: Thursday, May 03, 2018 9:48:42 PM

I would like to express my support to the Governor and Ohio EPA for taking this crucial step to bring attention to the impaired state of Lake Erie. Although many locals and non-locals have been aware of the disheartening polluted state of Lake Erie for some time, listing the western basin of Lake Erie as impaired waters will help to bring this issue to national attention. This issue can no longer be ignored by those that need to be held responsible.

Growing up in Michigan, my summers were defined by days spent swimming, sailing, and enjoying the Great Lakes, and particularly Lake Erie. Time spent with my family and friends on the shores and waters of Lake Erie helped to instill a love for the beauty and activities this lake had to offer, along with a curiosity for how these ecosystems work. It also brought an alarming attention to the detrimental effects harmful algal blooms caused by excessive nutrient pollution can have on such a beloved place.

I transferred my love of the Great Lakes to my undergraduate geology and environmental science studies at Michigan State, and again during my graduate studies at Michigan Tech, where I was lucky to research the Great Lakes on a deeper level. My research allowed me the opportunity to study Lake Superior and the rest of the Great Lakes from docks, shorelines, research vessels, classrooms, labs, and computer models. Ultimately, I worked to calibrate a model that simulated temperature, phosphorus cycling, and algal growth in offshore Lake Superior. Through this work, I recognized the importance of the balance of these Great Lakes systems and how vulnerable these systems are to anthropogenic influence.

The effects of nutrient pollution and non-point runoff are well understood and documented throughout the academic and Great Lakes community. Why then, is Lake Erie *still* so polluted? I've witnessed firsthand on my drive from Detroit to Marblehead, all of the agricultural runoff entering ditches that ultimately feed into the Maumee River and Lake Erie. How can we let this happen?

The facts and data are there, the regulation of point sources is there, the support and love of citizens of the Great Lakes community is there, and yet this problem won't be fixed by wishful thinking on voluntary actions. Large steps, in the form of regulations, nutrient reductions, and nutrient limits for non-point and agricultural sources, are necessary to clean up the lake.

We need to hold those that are degrading the quality of Lake Erie accountable. Large-scale agriculture and non-point sources needs to be held responsible, and we need the support and action of local, state, and federal governments in order to achieve this.

Although my career path as a water quality scientist has taken me out of the Great Lakes region for now, I attribute my passion for studying and protecting the quality of our nation's waters to my time spent on the Great Lakes. I look forward to my trips back home that are strategically scheduled during the summer so I can enjoy time with my family in our favorite place in Marblehead on Lake Erie. I want to continue these trips without the bewildered looks of my colleagues and friends on the West Coast, as I try to explain that there is more to Lake Erie than all of the pollution they see and hear about on the news.

Water is life, and we owe it to ourselves and our future generations to provide water that is fishable, swimmable, and drinkable.

Make the Great Lakes great again.

Sheelagh McCarthy

From: hope taft
To: [EPA TMDL: hope taft](#)
Subject: TMDL guidelines
Date: Thursday, May 03, 2018 9:50:46 AM

To Whom it may concern:

Since Bob and I moved to Greene County in 2007 and live in a house on the Little Miami River, I have become very interested in this particular river and all water sources in general. As you know, he worked hard to preserve the Great Lakes as governor, so that part of these proposed regulations also are of interest to us.

Living on the banks of the Little Miami river has taught me a lot. I hear the river speaking to us everyday for every day it is different and its mood can change instantly. At high water, it is telling at us to help save it from the destruction caused by the first flushes of sediment and pollution. It is eating the land it runs through and killing aquatic life and changing the environments of others. At the end of summer when it is barely more than a creek, it is hoping that the WWTP have released clean water, but it knows that medications are not handled well by them and that its waters are used for recreational purposes long after the change in rules for emissions in October. It is suffering the same as bees from the pesticides we humans use.

This leads me to believe that testing the water for pollutants and TMDL often is very important. The health of the rivers is a key to the health of the population whether you live on the river or not.

They are used for drinking water, for recreation, for aquatic food sources, and life giving nutrients to people and wildlife.

Please return to testing the waters of the state to a regular and consistent basis so the data we share with others less interested in the water's quality can know what is happening to them.

This is the 50th anniversary year of the Ohio Scenic Rivers Act. We have managed to keep these few river sections in pretty good shape, but as urbanization continues to unfold, the next 50 years may have a different story. OEPA is the finger in the dike. Please test the waters more often and report the findings more frequently so we can be alerted to major problems before it is too late.

It is hard to get people concerned over data that is derived from testing in years past. Please do all you can to raise the priority of this issue. and protect our waters.

People can live longer without food than they can without clean water, and as climate change continues to unfold, water will become even more important to life. Ohio is blessed to have so much, but it will be useless, if it is not taken care of and protected.

Thank you for doing what is best for the vast majority of Ohioans that you will never hear from.

Sincerely,

Hope Taft

Hope Taft, co chair, Little Miami river Kleeners and Little Miami Watershed Network, 2933 Lower Bellbrook Rd., Spring Valley, OH 45370, 937-848-2993, ohiohoper@yahoo.com

From: Chris Steffen
To: [Chris Steffen](#); [Dean, Donald](#); [EPA TMDL](#)
Subject: TMDL report public comment
Date: Friday, May 04, 2018 3:43:07 PM

The OH council of Trout Unlimited is encouraged by your recent report that declared the Lake Erie western basin as impaired. The first step in solving the problem is establishing an evidence-driven argument that the problem exists. We look forward to continued monitoring and proposed mitigation plans to restore this special resource. Many of our 3100 Ohio members rely upon the health of Lake Erie for both recreational fishing and our source of drinking water. We look forward to progress on resolving the algal bloom issue and partnering with other stakeholders to create a lasting solution.

Chris Steffen, Jr.
National Leadership Council Representative
Ohio Council of Trout Unlimited

Donald Dean, President
Ohio Council of Trout Unlimited

From: Ed Thomas
To: [EPA TMDL](#)
Subject: 2018 IR Report
Date: Wednesday, April 25, 2018 2:55:59 PM

Can you provide the background methodologies, data, and scientific studies that you relied upon to make the Western lake erie open waters impairment finding?

Regards, Ed Thomas

Ed Thomas
Director, Regulatory Affairs
The Fertilizer Institute
425 Third Street, SW Suite 950
Washington, DC 20024

(p) 202-515-2714
(c) 443-739-1358

From: Bill McCarthy
To: [EPA TMDL](#)
Cc: [Debbie McCarthy](#); [Sheelagh McCarthy](#)
Subject: Western Lake Erie Water Condition
Date: Thursday, April 26, 2018 4:54:51 PM

First, I applaud the Governor for taking the action to declare the waters of Western Lake Erie impaired. This is an important first step.

I have had the great fortune to have lived my entire life in the Great Lakes region and have enjoyed using this treasured resource. Summer Camp as a youth on Lake Huron. I remember summering on Lake Erie in Ontario in the early 70's when Lake Erie was proclaimed dead and thus was a partial impetus to start the EPA. I have lived in Houghton, Mi and enjoyed the majesty of Lake Superior. My wife and I lived 7 years in Holland, Mi and were in awe of the beauty of Lake Michigan.

Our family migrated back southeast Michigan and discovered the Lake Erie Islands. We were so taken with the lake and the beauty of the region we bought our summer homes here beginning in 2003. It was the algae bloom caused by the blackout in 2003 which really prompted us to move our summer boating activities from Monroe to Ohio. We remarked at the clarity of the water, which our family has thoroughly enjoyed in the summer months.

As someone who is involved in the construction industry, and abides by the stringent requirements for proper storm water management both during and after the course of construction, I am sick to my stomach as I witness farm practices which dump/pump runoff right into waterways. They farm to the edge of the ditch and pump flooded fields into the ditches. I witnessed this practice firsthand while constructing projects in NW Ohio, which are part of the Maumee watershed. This practice can readily be observed on any trip along Route 2, from Oregon to Lake Erie. It is no wonder that the gains made in the 80's, 90's and early 2000's have been eradicated by the selfish practice of over fertilization and improper storm water management. Most industries would be fined for dumping chemicals/nutrients direct like this into our waters.

The Agricultural Industry needs to be mandated to adhere to proper management of their discharges. Non-mandated encouragement will yield some results-but I am afraid not significant enough to create the changes that are desperately needed. It is the EPA's charge to enforce. If the closure of freshwater intakes for Community drinking water doesn't alarm offenders enough to change practices, only mandates will.

Our Lake House is in Marblehead. We thoroughly enjoy the region and love the Lake dearly. We are saddened when we start to see the particulate arrive in late summer. It is very distressing to see the Lake covered in a pea soup mixture.

We in the Great Lakes region are fortunate to be near the greatest natural resource of all-Fresh Water. This is our regions life blood. All within the region need to treat it with the utmost respect.

What can we do to be of help?

Sincerely,

William T. McCarthy
8399 Reserveway
Marblehead, OH

President

McCarthy & Smith, Inc.

24317 Indoplex Circle / Farmington Hills, MI 48335

O 248.427.8400 / c 248.302.4274

bmccarthy@mccarthysmith.com

www.mccarthysmith.com



From: Tyler Bender
To: [EPA TMDL](#)
Subject: Dear Director Butler,
Date: Tuesday, May 01, 2018 10:11:06 PM

Dear Director Butler,

As a concerned citizen of Ohio for the water quality of our Great Lake, I want to express my support for the Ohio Environmental Protection Agency in designating the Lake Erie western basin shoreline region as impaired in all four categories. I fully support the draft 2018 water quality report's list of impaired water bodies that includes the Lake Erie Western Basin Shoreline and Open Waters as impaired. I also support the new methodology designed to analyze the Lake Erie, especially for algal blooms, and use of scientific methods to determine its water quality. Please continue Ohio EPA's efforts to improve the water quality of our Great Lake and address the critical issue of algal blooms around the state.

Sincerely,
Tyler Bender

From: Flasco, Ray
To: [EPA TMDL](#)
Cc: [Ramey, Basil](#)
Subject: Integrated Report of Water Quality in Ohio waters
Date: Thursday, April 26, 2018 7:38:06 AM

In regard to yesterday's webinar, is or has OH EPA been collecting data on emerging contaminants such as pharmaceuticals, endocrine disruptors, personal care products, Teflon, micro-plastics and etc. in Ohio's lakes, rivers and streams? Will these be included in future Integrated Reports, or are historical trends of these contaminants being tabulated separately?

Ray Flasco

From: Folk-Axe, Kim
To: [EPA TMDL](#)
Subject: Comment on Integrated Report required by close of business day 5/4/18
Date: Friday, May 04, 2018 2:58:42 PM

According to the Clean Water Act { section 502(6)} agricultural waste discharged into water is considered a "pollutant." In the Clean Water Act {section 512 (14)} Concentrated Animal Feeding Operations are listed as point sources which should require an NPDES permit.

Kim Folk-Axe
NICU Social Worker
CARE Facilitator
Office-(419)291-9475
Vocera- (419)291-6900
Fax- (419)480-6860

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From: Jared Bartley
To: [EPA TMDL](#)
Subject: 303(d) comments
Date: Tuesday, May 01, 2018 12:54:32 PM

I'd like to submit the following comment regarding the draft 2018 Integrated Report:

- The Assessment Unit Summary for HUC 04110001 02 03 (Rocky River) indicates that the Designated Aquatic Life Use for portions of Abram Creek is "Modified Warmwater Habitat – Channel Modified." In fact, per OAC 3745-1-20, the Designated Aquatic Life Use for Abram Creek is "Warmwater Habitat." Ohio EPA had proposed to change the Abram Creek designation to MWH-CM, but ceded to local requests to maintain the WWH designation. This designation and associated Attainment Status should be accurately reflected in the Assessment Unit Summary for HUC 04110001 02 03 in the 2018 Integrated Report.

Thank you,
Jared

Jared A. Bartley, CFM

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From: Marj Mulcahy
To: [EPA TMDL](#)
Subject: 2018 Integrated Report
Date: Friday, May 04, 2018 9:24:45 AM

In studying the Integrated Report I would first like to commend Ohio EPA for taking the step of including the Western Lake Erie Basin (WLEB) in the 303d list of impaired waters. By officially recognizing the serious decline of water quality in Lake Erie, Ohioans have been given hope that substantial improvements will be made. This is greatly appreciated.

Using the TMDL process as defined by US EPA is extremely important in developing hard and meaningful nutrient water quality standards for the WLEB. This is the only way that the sources of pollution can be identified and held accountable to change their business practices. This process is the most reliable process to eliminate the harm caused to the citizens of Northwest Ohio and all people who use Lake Erie for swimming, fishing and most importantly, the 11 million people who use it as their drinking water source.

The 2016 Mass Balance Report documents that runoff from agricultural fields is the cause of 84% of the phosphorus pollution and 90% in the WLEB watershed resulting nutrients that feed the harmful algal booms in Lake Erie and sometimes the Maumee River. In view of this I am astounded that there are 201 permitted CAFOs in Ohio but only 28 of those CAFOs have NPDES permits.

How can this situation be allowed by the State of Ohio in the face of these facts? Beyond doubt, mandatory reforms must be implemented.

I do hope in future Integrated Reports changes can be made in the format to make it more understandable. It's a very difficult read for the public (of which I am a part). Making it more interactive by linking maps and reports, etc. would be so helpful and I am sure there many tech savvy Ohio EPA personnel who would love take on the challenge.

Sincerely,

Marjorie Mulcahy
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From: Lehmann, Adam
To: [EPA TMDL](#)
Subject: 2018 Integrated report comments
Date: Thursday, May 03, 2018 8:58:26 AM

In reviewing the *Draft 2018 Integrated Water Quality Monitoring and Assessment Report*, I was struck by the absence of much of the tabular and graphical analysis in Section G that has been so useful for interpreting results in past years (e.g. Tables G-2, G-3, and G-4 from the 2016 report are missing). I feel particularly strongly that the information in table G-4 from the 2016 report (“Prevalence of the top five causes of aquatic life impairment in watershed and LRAUs”), be included as it is quite useful for prioritizing efforts for watershed management strategies statewide. I would further encourage the Agency to conduct and present this analysis on an Ecoregion basis to facilitate more localized regional watershed management planning. Ideally, two summary tables (one with state-wide data and one broken-down by ecoregion) would be provided identifying number of instances for ALL “causes” of non-attainment of ALU.

Thank you for considering my comment.

Adam Lehmann, Stream Specialist

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