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 2016 Integrated Report (IR) continues Ohio's evolution to a fully-formed watershed basis for reporting on water quality conditions. For the past 20 years 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 prepared CWA Section 305(b) reports every two years since 1988 using a biologically based assessment methodology[1]. 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, as follows:

1. 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 2016 methodology is unchanged from what was used in the 2014 IR. Additionally, as in the 2012 and 2014 IRs, a methodology for assessing the aquatic life condition of inland lakes is previewed for possible inclusion in the 2018 or 2020 report provided necessary rule revisions to the Ohio Water Quality Standards are promulgated.

2. Recreation: A methodology for using bacteria data to assess recreation suitability was developed for the 2002 report and refined in 2004, remaining essentially the same for 2006 and 2008. In 2010, the recreation use analysis changed significantly to a new indicator, a new water quality standard, and a data grouping procedure similar to that used for aquatic life. The methodology has not changed for the 2016 report.

3. 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 2016 report.

4. 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 2016 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 2016 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:

1. 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).

2. 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.

3. Lake Erie Assessment Units (LEAUs) – for three shoreline areas of the lake: western (Ohio/Michigan state line to eastern terminus of Sandusky Bay opening to Lake Erie); central (eastern terminus of Sandusky Bay opening to Lake Erie to Ohio/Pennsylvania state line); and Lake Erie islands (including South Bass Island, Middle Bass Island, North Bass Island, Kelleys Island, West Sister Island and other small islands) extending 100 meters from the shore. These assessment units also include Public Drinking Water Supply intake zones (500-yard radius around intakes) associated with the nearest shoreline unit even if they are greater than 100 meters from the shore.

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 of 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 http://www.epa.ohio.gov/dsw/document_index/psdindx.aspx. Total Maximum Daily Load (TMDL) reports, available at http://www.epa.ohio.gov/dsw/tmdl/index.aspx, are another source of more in-depth analyses. Water chemistry data collected by Ohio EPA's Division of Surface Water (DSW) is regularly reviewed and uploaded to the national STORET Data Warehouse. Approved data collected from 2005 to present can be queried and downloaded from STORET via the Water Quality Portal at http://www.waterqualitydata.us/. Ohio EPA data can be found under the organization ID "21OHIO_WQX". Biological data is available from Ohio EPA upon request but is not currently available through the Water Quality Portal or STORET.

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.

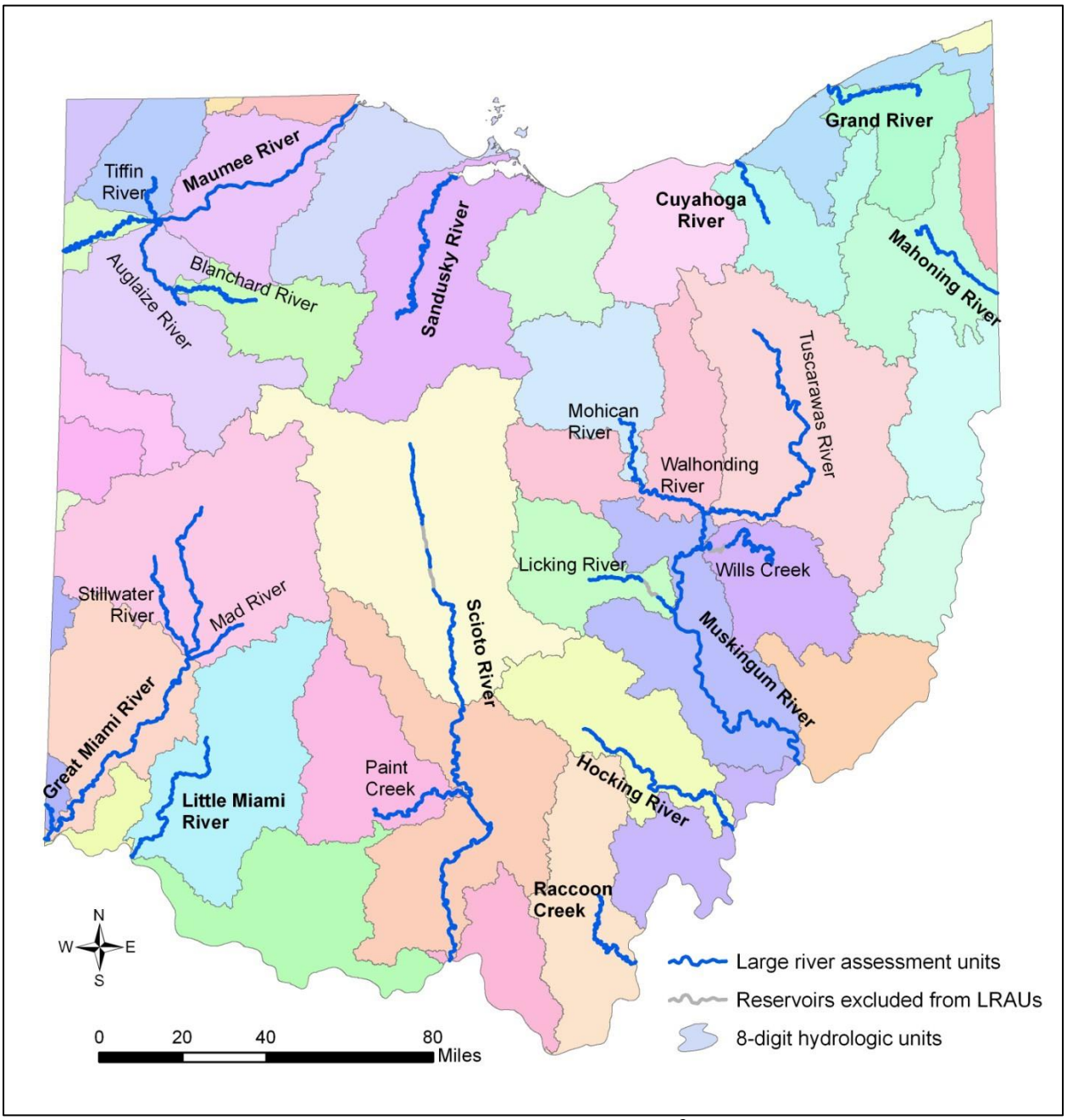


Figure D-1. Ohio's large rivers (rivers with drainages greater than 500 mi^2) and their watersheds.
Note: Bolded river names indicate the primary mainstem of that drainage basin.

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

D2. Evaluation of the Ohio River

Since 1948, the Ohio River Valley Water Sanitation Commission (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. ORSANCO was established on June 30, 1948, to control and abate pollution in the Ohio River Basin. ORSANCO is an interstate commission representing 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, RiverWatchers Volunteer Monitoring Program and Friends of the Ohio.

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 http://www.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 *2014 Biennial Assessment of Ohio River Water Quality Conditions* (ORSANCO 2014). ORSANCO has completed its 2016 biennial assessment of Ohio River Water Quality Conditions, which can be found online at http://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. In Ohio's 2014 Integrated Water Quality Report *Section I: Considerations for Future Lists*, Ohio proposed a new approach for Lake Erie with new assessment units and methodology for the nearshore and open waters. Ohio EPA initially planned to

adopt the new assessment units and methodology during a later IR cycle, anticipating that the GLWQA Annex 4 efforts would produce nutrient concentration targets or criteria for the open waters.

The GLWQA Annex 4 efforts so far have resulted in load reductions targets rather than in-lake nutrient concentration targets or criteria. For this and other reasons outlined in Section J3, Ohio does not intend to pursue development of the open water assessment units and methods at this time. Ohio EPA believes that assessment and listing of the open waters under the CWA should be led by U.S. EPA in consultation with the states and Ohio is willing to assist its federal partners with the development of appropriate monitoring and assessment protocols for the open waters. Federal leadership on the open water assessments will also facilitate coordination with the ongoing GLWQA Annex 4 efforts (U.S. EPA and Environmental Canada are federal co-leads). In the meantime, Ohio is actively working towards the nutrient reduction goals for Lake Erie recommended by the Annex 4 subcommittee (see Section J3 for more information).

To be clear, the three current Lake Erie shoreline units have been assessed and impairment determinations made for the aquatic life use, recreational use, and human health (fish contaminants) use for over 10 years. **In the 2014 IR, the Western Basin Shoreline Unit was listed as impaired for all four beneficial uses, including the public drinking water supply beneficial use for the first time.** Public drinking water supply intakes that are located in Lake Erie beyond 100 meters from the shore were associated with the nearest shoreline assessment units. An algae indicator assessment methodology was implemented for the first time in the 2014 report, based on the state drinking water thresholds for microcystins, saxitoxin, anatoxin-a and cylindrospermopsin. This association and application for assessment and listing has been clarified in response letters to U.S. EPA in 2015 and in this report. These impairment determinations were made based on numeric targets or standards and objective assessment methods for each use designation (see Sections E through H for more information about how impairment is determined for each use) in line with how assessments for large river and watershed units have been conducted for the last several report cycles.

For this 2016 IR, Ohio has continued to use the three Lake Erie shoreline assessment units with all four beneficial uses assessed and all Lake Erie public drinking water intakes associated with one of the three units, as shown in Figure D-3. The shoreline unit extends 100 meters from the actual shore. The 303(d) Prioritized List of Impaired Waters (Table L4) includes all three assessment units and shows that all three are now listed as impaired for aquatic life use, public drinking water use and human health (fish tissue). The western basin shoreline and central basin shoreline are also listed as impaired for recreation use by bacteria (*e. coli*).

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 uses. Table D-1 lists all of Ohio's water quality standards (WQS) designated uses and outlines how the use was evaluated for the Ohio 2016 IR.

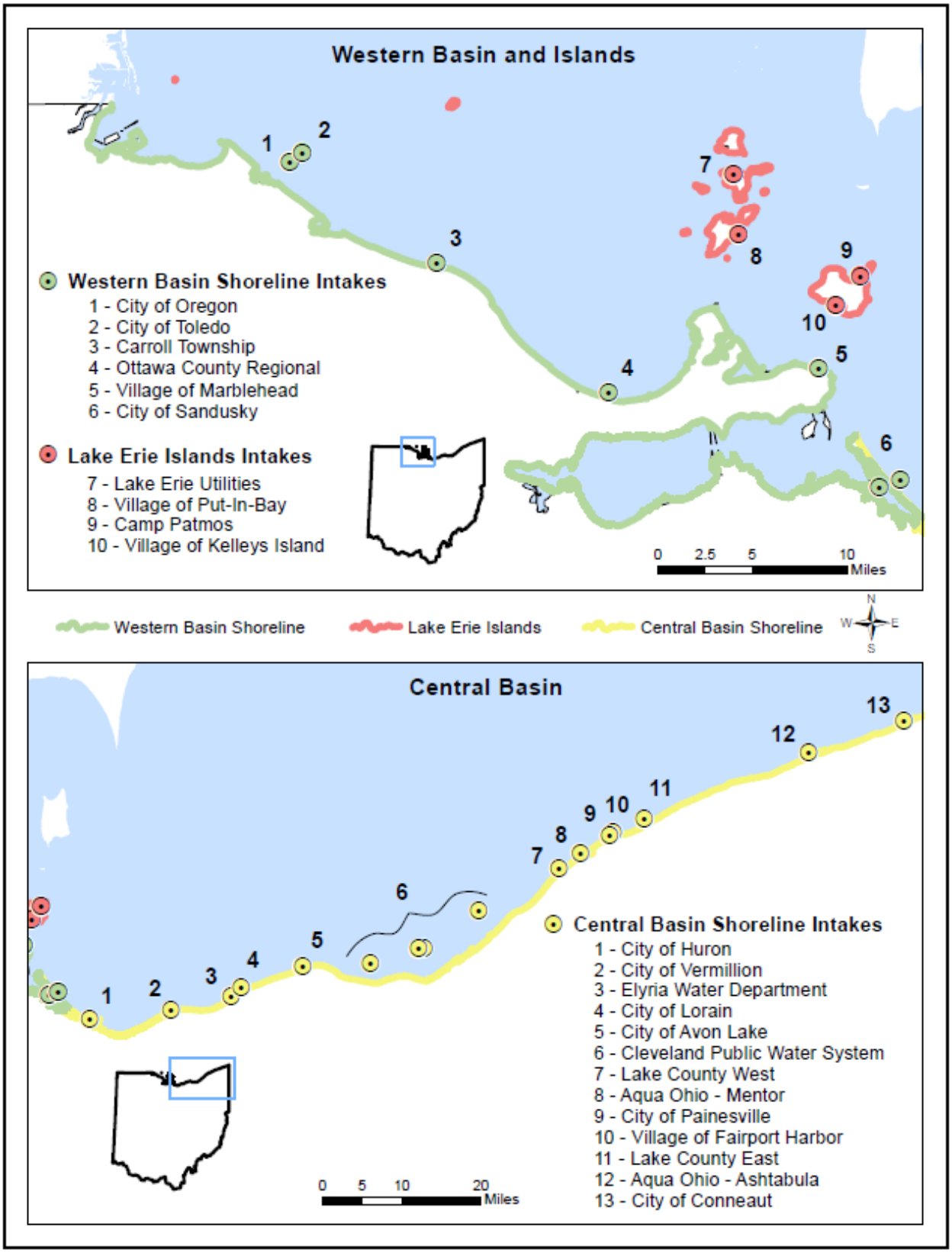


Figure D-3. Ohio's Lake Erie assessment units – western basin, islands and central basin shoreline with associated Public Water Supply intake zones.

Table D-1. Ohio water quality standards in the 2016 IR.

Beneficial Use Category	Key Attributes[2]	Evaluation status in the 2016 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	64 percent of the WAUs and 98 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 macro- invertebrates; 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 recreational activities		
Bathing Waters	Lake Erie (entire lake); for inland waters, bathing beach with lifeguard or bathhouse facility	Lake Erie public beaches fully evaluated; nine inland lakes evaluated
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	45 percent of the WAUs, 45 percent of the LRAUs and 100 percent of beaches in LEAUs 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, publically owned lakes, waters used as emergency supplies	Sufficient data were available to assess 57 percent of the 123 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

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

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 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, revised in 2011, 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 2016 IR. The letter requesting data and the web site containing information about how to submit data are included in Section D5.1. Table D-2 summarizes the WQS uses evaluated in the 2016 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 2016 IR. Ohio EPA's 2016 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 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

Table D-2. Data types used in the 2016 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 2005 to 2014	Fish Tissue Contaminant Database	Data collected within past 10 years. Two samples, each from trophic levels 3 and 4 in each WAU or inland lake.
Recreation uses and subclasses - evaluation based on a comparison of *E. coli* levels to applicable geometric mean *E. coli* criteria in the WQS. Lake Erie shoreline evaluated on the basis of frequency of advisories posted at beaches	*E. coli* counts 2011 to 2015 (May through October only)	Ohio Dept of Health Cuyahoga County Health Department Northeast Ohio Regional Sewer District (NEORSD)	Bathing Waters – One or more geometric mean *E. coli* values (inland lakes; *E. coli* data from one or more beaches (Lake Erie shoreline AUs); minimum of one geometric mean *E. coli* concentration per WAU or one site every ~5 to 7 river miles for LRAUs
Aquatic life (specific sub-categories), fish and macroinvertebrate community index scores compared to biocriteria in WQS[4]	Watershed scale biological and water quality surveys & other more targeted monitoring 2003 to 2014	ODNR U.S. Geological Survey NEORSD Midwest Biodiversity Institute Heidelberg College Ohio State University EnviroScience, Inc.	Fish and/or macroinvertebrate samples collected using methods cited in WQS[5]. Generally, 2 to 3 locations sampled per WAU (12-digit HUC).
Public drinking water supply (criteria apply within 500 yards of active drinking water intakes, all publically owned lakes, and all emergency water supplies)	Chemical water quality data 2010 to 2015	SDWIS (PWS compliance database) Syngenta Crop Protection, Inc. (Atrazine Monitoring Program)[6]	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] OAC 3745-1-07(A)(6) and Table 7-15
[5] OAC 3745-1-03(A)(5)
[6] 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 2016 IR from sources other than Ohio EPA.

Entity	Dates data were collected	Data description	Basis of qualification[7]
Data Collected Before Credible Data Law (March 24, 2006)			
Ohio Department of Natural Resources	1997 – 2005	Fish tissue	
	2003 – 2005	Biology (fish only)	
		Physical habitat	
U.S. Geological Survey	2003	Biology (macroinvertebrates only)	
Northeast Ohio Regional Sewer District	2005	Fish tissue	
Midwest Biodiversity Institute/Center for Applied Bio-assessment and Biocriteria	2003 – 2004	Biology	
		Physical habitat	
		Chemistry	
Heidelberg College	2004	Biology (macroinvertebrates only)	
	Jan 2002 – Feb 2006	Chemistry	
Data Collected After Credible Data Law (March 24, 2006)			
NPDES permittees	2011 – 2015 (May – Oct only)	Bacteria	Data credible – submittal pursuant to permit
Ohio Department of Health (ODH)	2011 – 2015 (May – Oct only)	Bacteria	State agency
Cuyahoga County Health Department	2011 – 2015 (May – Oct only)	Bacteria	Level 3 qualified data collector (under ODH's study plan)
Northeast Ohio Regional Sewer District	2011 – 2015 (May – Oct only)	Bacteria	Level 3 qualified data collector
	Jul 2006 – Oct 2014	Physical habitat	
	2008	Fish tissue	
Ohio Department of Natural Resources	Apr 2006 – Nov 2014	Fish tissue	State agency/Level 3 qualified data collector
	Sep 2006 – Sep 2014	Biology (fish only)	
		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 footnote[8]

[7] 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.

[8] 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 Protection, Inc.).

Entity	Dates data were collected	Data description	Basis of qualification[7]
The Ohio State University	May – Oct 2006	Biology (macroinvertebrates only)	Level 3 qualified data collector
Midwest Biodiversity Institute/Center for Applied Bio-assessment and Biocriteria	Jul 2010 – Oct 2014	Biology Physical habitat	Level 3 qualified data collector
Enviroscience, Inc.	Sep – Nov 2011	Biology Physical habitat	Level 3 qualified data collector
Ohio Department of Transportation	Jun 2007 – Oct 2010	Biology (fish only) Physical habitat	State agency/Level 3 qualified data collector
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 2013	Chemistry (drinking water) Physical habitat Biology (macroinvertebrates only)	Level 3 qualified data collector

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 2016 IR. Several means of public communication are discussed below.

Ohio EPA convened an advisory group that included representatives from the regulated community (e.g., industries, municipalities), environmental groups, consultants, citizens, state and federal agencies, farm organizations and development interests. The group, which included about 80 active participants, met from late 1998 to June 2000. One subgroup addressed listing issues. Their conclusions were as follows:

- monitoring and data quality are essential
- use outside data of highest quality
- endorse priorities of 1998 list
- increase attention to human health issues
- quantify "cost of inaction"
- more monitoring is needed
- data should be accessible and geographically referenced
- increased public involvement is needed
- current funding and resources are inadequate

The cost associated with implementing the advisory group's listing recommendations was $3.2 million annually; the cost for implementing all advisory group recommendations was $9.7 million annually. Ohio EPA used these estimates to seek additional monies, but ultimately was unsuccessful in competing with other state funding priorities. Ohio EPA has incorporated the "low cost" recommendations (the

first four listed above) and it continues to seek ways to address all of the group's recommendations.

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 of this information can be accessed from the following Internet web site: http://www.epa.ohio.gov/dsw/formspubs.aspx.

The draft 2016 303(d) list, contained in the draft 2016 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, 2016 IR Project (June 2, 2015)

A memorandum soliciting level 3 qualified data was mailed in June 2015 to all Level 3 qualified data collectors. The memorandum is displayed below.

Date June 2, 2015

To Interested Parties: Stream Monitoring Personnel

Re Solicitation of Water Quality Data, 2016 Integrated Report
(No action is required on your part - submission of data is voluntary)

Ohio EPA is asking for chemical, biological and/or physical data you may wish to submit for consideration as the Agency prepares its 2016 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 only able to use data from a limited number of external sources, including Level 3 certified data collectors and NPDES discharge permit holders[2].

At this time, the Ohio EPA Division of Surface Water (DSW) is soliciting readily available data for use in the 2016 Integrated Report. The report, due to U.S. EPA on April 1, 2016, 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

In 2003 a new law was enacted in Ohio dealing with sources of data external to Ohio EPA. The "credible data law," as it is known (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 them to the director.

The director has adopted rules (OAC 3745-4-01 through 06), effective March 2006, that delineate these requirements.

In addition, the law explicitly established that external data found 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.

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

According to the Ohio EPA 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:

- Biological, physical, and chemical = July 15, 2015
- Bacteria = September 15, 2015

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/2016IntReport/2016CallForData.aspx

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 web site content is displayed below.

2016 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 and/or chemical data you may wish to submit for consideration as the Agency prepares its 2016 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 frame:

- *Bacteria = 2013 – 2015 (recreation season)*
- *Biological, physical, and chemical = 2013 – 2014*

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 3745-1-07 of Ohio's water quality standards. These indicator bacteria serve as predictors for the 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 2016 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 (DMRs) 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, 2013 and September 15, 2015 and must meet the basic terms of acceptability found in the requirements listed below.*

Biological and Physical 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 7-15. Field collection and data analysis methodologies for fish and macroinvertebrate community assessments are strictly adhered to and must follow procedures as outlined in the Ohio EPA biological criteria manuals.*

- *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 "Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices, 2009 Revision". 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?

In 2003, a new law was enacted in Ohio dealing with external sources of data. The "credible data law," as it is known (ORC 6111.50 to 6111.56), requires the director of Ohio EPA to adopt rules that would, among other things:

- *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 them to the director.*

The director has adopted rules (OAC 3745-4-01 to 06), effective March 2006, to accomplish these requirements.

In addition, the law explicitly established that external data found 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.

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]
Data Collected Before Credible Data Law (March 24, 2006)			
NPDES permittees	2002 – 2005 (May – Oct only)	Bacteria	
Ohio Department of Health (ODH)	2002 – 2005 (May – Oct only)	Bacteria	
Cuyahoga County Health Department	2002 – 2005 (May – Oct only)	Bacteria	
Northeast Ohio Regional Sewer District	2002 – 2005 (May – Oct only)	Bacteria	
Lake County General Health District	2002 – 2005 (May – Oct only)	Bacteria	
Ohio Department of Natural Resources	1997 – 2005	Fish tissue	
	2001 – 2005	Biology (fish only)	
		Physical habitat	
Ohio Northern University	1997	Biology	
Ohio University (Athens)	1995	Biology	
U.S. Geological Survey	2003	Biology (macroinvertebrates only)	
Northeast Ohio Regional Sewer District	2001	Biology (macroinvertebrates only)	
	2005	Fish Tissue	
Midwest Biodiversity Inst./ Ctr for Applied	2001 – 2004	Biology	
		Physical habitat	

Entity	Dates Data Were Collected	Data Description	Basis of Qualification[1]
Bio-assessment & Biocriteria		Chemistry	
Heidelberg College	2004	Biology (macroinvertebrates only)	
	Jan 2002 – Feb 2006	Chemistry	
PWS compliance database (permittees)	Jan 2002 – Feb 2006	Chemistry	
Syngenta Crop Protection, Inc.	Jan 2002 – Feb 2006	Chemistry	
Data Collected After Credible Data Law (March 24, 2006)			
NPDES permittees	2009 – 2010 (May - Oct only)	Bacteria	Data credible - submittal pursuant to permit
Ohio Department of Health (ODH)	2006 – 2010 (May - Oct only)	Bacteria	State Agency
Cuyahoga County Health Department	2006 – 2010 (May – Oct only)	Bacteria	Level 3 qualified data collectors (under ODH's study plan)
Northeast Ohio Regional Sewer District	2006 – 2010 (May – Oct only)	Bacteria	Level 3 qualified data collectors
	July 2006 – Oct 2014	Biology	
		Physical habitat	
	2007	Fish tissue	
Ohio Department of Natural Resources	April 2006 – Nov 2010	Fish Tissue	State Agency/Level 3 qualified data collectors
	Sept 2006 – Oct 2014	Biology (fish only)	
		Physical habitat	
PWS compliance database (permittees)	March 2006 – Dec 2010	Chemistry	Data credible - submittal pursuant to permit
Syngenta Crop Protection, Inc.[2]	March 2006 – Dec 2010	Chemistry	See footnote[2]
The Ohio State University	2006 (May – Oct only)	Biology (macroinvertebrates only)	Level 3 qualified data collectors
Midwest Biodiversity Inst./ Ctr for Applied Bio-assessment & Biocriteria	July 2010 – Oct 2014	Biology	Level 3 qualified data collectors
		Physical habitat	
EnviroScience, Inc.	Sept – Nov 2011	Biology	Level 3 qualified data collectors
		Physical habitat	
Ohio Department of Transportation	June 2007 – Oct 2010	Biology	State Agency/Level 3 qualified data collectors
		Physical habitat	
Heidelberg College	June 2012 – Oct 2012	Biology (macroinvertebrate ID only)	Level 3 qualified data collectors

Entity	Dates Data Were Collected	Data Description	Basis of Qualification[1]
EA Science and Technology, Inc.	July 2014 – Oct 2014	Biology	Level 3 qualified data collectors
		Physical habitat	
Cleveland Metroparks	June 2012 – Sept 2014	Biology (fish only)	Level 3 qualified data collectors
		Physical habitat	
Clermont County Office of Environmental Quality	May 2009 – Sept 2013	Chemistry (drinking water)	Level 3 qualified data collectors
		Biology (macroinvertebrates only)	
		Physical habitat	

[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

An individual or organization who submits bacteria data to Ohio EPA for consideration in the 2016 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 "Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices, 2009".*

  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 2013-2014 and (May 1st to September 15th) for 2015. 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 water body 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 e-mail address of the person submitting the data set*
    - *Identification of the laboratory performing the sample analysis*

Biological, Chemical and Physical Data Requirements

An individual or organization who submits biological, chemical and/or physical data to Ohio EPA for consideration in the 2016 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:

- *Analytical and sampling procedures (examples):*
    - *Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices, 2009*
    - *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 data collected from 2013-2014. 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 e-mail 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, then 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, 2006 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 data collected from surface waters in Ohio, then 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, 2013 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, 2015 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, 2015, 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 2016 Integrated Report Preparation

As shown below, Ohio EPA announced the preparation and anticipated schedule[9] of the 2016 Integrated Report on its website (http://www.epa.ohio.gov/dsw/tmdl/OhioIntegratedReport.aspx).

Preparation of 2016 Integrated Report is Underway

Ohio EPA is preparing the 2016 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 2015
External Level 3 credible data are due to Ohio EPA	July 15, 2015
Prepare list / internal review	October - December 2015
Public notice draft 303(d) list	December 2015 – January 2016
Respond to comments / prepare final list	February - March 2016
Submit to U.S. EPA Region V for approval	April 1, 2016

Please continue to check this Web site for updates.

[9] Due to a variety of factors, the 2016 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 2016

Public Notice Date: July 29, 2016

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 2016

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 Total Maximum Daily Load (TMDL) priority list for 2016 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 the *2016 Integrated Water Quality Monitoring and Assessment Report* (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 2016 through 2018.

Ohio EPA will present information about the list through a webinar on August 16. 2016, at 2:00 pm. The webinar may be viewed at Ohio EPA's Central Office, Conference Room B, 50 West Town Street, Suite 700, Columbus, Ohio 43215 or by registering and joining online at: https://ohioepa.webex.com/mw3100/mywebex/default.do?siteurl=ohioepa&service=6

All interested persons wishing to submit comments on the list for Ohio EPA's consideration may do so by email to dsw.webmail@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, August 29, 2016. 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 Bouder 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.

D7. Public Comments and Responses to Comments on Draft Report

The draft Ohio 2016 Integrated Water Quality Monitoring and Assessment Report (a.k.a., Integrated Report or IR) was available for public review from July 29, 2016, through August 29, 2016.

Twenty-three sets of public comments were received on the draft report during that time frame, as follows:

Name	Organization	Date Received
Susan Matz, Coordinator Mike Ferner, Coordinator	Advocates for a Clean Lake Erie	8/25/2016
Molly Flanagan, Vice President	Alliance for the Great Lakes	8/29/2016
Robert Wolas, Executive Secretary	Associated Yacht Clubs	8/28/2016
Kimberly Kaufman, Executive Director	Black Swamp Bird Observatory	8/25/2016
Melissa M. Purpura, City of Oregon Law Director	City of Oregon and Lucas County	8/29/2016
John Borrell, Assistant Lucas County Prosecutor		
Various[10]	Coalition of Environmental Organizations	8/29/2016
Laura Fay	Friends of Lower Olentangy River Watershed	8/19/2016
Sandy Bihn, Vice President/Lake Erie Waterkeeper	Lake Erie Improvement Association and Lake Erie Waterkeeper, Inc.	8/29/2016
Gail Hesse	National Wildlife Federation	8/29/2016
Chad Kemp, President	Ohio Corn & Wheat Growers Association and Ohio Soybean Association	8/29/2016
Adam Graham, President		
Vicki A. Askins	Ohio Environmental Stewardship Alliance	8/25/2016
Larry M. Antosch, Ph.D., Senior Director, Policy Development and Environmental Policy	Ohio Farm Bureau Federation	8/29/2016
Dr. Gregory Arko	private citizen	8/25/2016
Raymond Gajkowski	private citizen	8/25/2016

[10] The Coalition of Environmental Organizations consists of the following groups: Adam Rissien, Clean Water Director, Ohio Environmental Council; Molly M. Flanagan, Vice President, Policy, Alliance for the Great Lakes; Jill Ryan, Executive Director, Freshwater Future; Jennifer Miller, Director; Ohio Chapter of the Sierra Club; and Jessica Dexter, Staff Attorney, Environmental Law & Policy Center

Tahree Lane	private citizen	8/29/2016
Keleen McDevitt	private citizen	8/29/2016
Marjorie Mulcahy	private citizen	8/29/2016
Annette Shine	private citizen	8/29/2016
Anthony Szilagye	private citizen	8/29/2016
Sue Terrill	private citizen	8/26/2016
Claire Tinkerhess	private citizen	8/26/2016
Patrick E. Wright	private citizen	8/29/2016
Edward M Yandek	private citizen	8/25/2016

Comments are grouped by general topic. Some of the comments are expressed verbatim. In instances where the same or similar comment was made by two or more individuals/organizations, the comments were summarized and a collective response was prepared. 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) 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.

Lake Erie Assessment and Impairment Decision Comments

Summarized comment 1: Ohio EPA should list the open waters of Lake Erie as impaired. It should follow the assessment protocols described in the 2014 Integrated Report and use the narrative criteria in OAC 3745-1-04(E) as a basis for an impairment determination. A determination of impairment would trigger a basin-wide TMDL in conjunction with Indiana and Michigan (and to the extent possible, Ontario) that would target both point and non-point nutrients responsible for the harmful algal blooms.

The state's claim that there is a lack of data to support a determination of impairment is unfounded since there seems to be an abundancy of data available through park employees, academic institutions, private citizens and federal agencies such as NASA and U.S. EPA's Great Lakes National Program office. In particular, Ohio should address data on Lake Erie's phosphorus and algae conditions summarized in the May 2015 report "Recommended Phosphorus Loading Targets for Lake Erie" developed under the Great Lakes Water Quality Agreement.

Ohio EPA's failure to either consider the narrative criteria in its assessment protocols or to analyze credible data according to a specific methodology in order to make an impairment determination for the open waters may constitute a violation of the Clean Water Act.

Response 1: Ohio EPA is not opposed to making impairment designations, evidenced by those already done in Lake Erie, but only when a science based process for designation and de-listing is available. We simply do not believe that the tools and measures are available yet to do so in a manner that is consistent, defendable and appropriate, beyond the shoreline and drinking water in-takes. We would certainly consider including more assessments and possible listings in our 2018 report if there is

adequate progress on developing consistent standards/action levels.

As it is, Ohio does not currently have an assessment methodology for determining the aquatic life use status of the open waters of Lake Erie based on the narrative standard defined in the Ohio Water Quality Standards. Our resources to date have been focused on developing rules and methods for interpreting that standard for rivers, streams and shorelines and we have routinely assessed and listed those for several years now. Most recently, our focus was on developing and implementing a method to assess the public drinking water supply (PDWS) use related to harmful algal blooms, which we have included for Lake Erie as well as other waters.

It should also be noted that the resources to conduct an assessment of the open waters of the lake are significant. There are safety issues, training requirements and high equipment costs related to collecting the data, to mention just a few concerns. And while we recognize that data are collected by NOAA and U.S. EPA, for example, it does not necessarily meet our needs (in terms of parameters, frequency and locations) for conducting an assessment of our water quality standards and use designations using our typical methods.

Because of the multi-jurisdictional in nature of Lake Erie, not only multi-state, but bi-national, Ohio EPA feels that the nutrient and algae issues in Lake Erie are best addressed through a formalized partnership with all the parties involved and should be handled in a consistent, uniform manner, starting with the assessment and listing process. The CWA section 118(c)(2)(A) says that by 1991, that the Great Lakes National Program Office (GLNPO) shall specify numerical limits on pollutants in ambient Great Lakes waters to protect human health, aquatic life and wildlife and shall provide guidance to the Great Lakes States on minimum water quality standards, antidegradation policies and implementation procedures for the Great Lakes System. To date GLNPO has not proposed a nutrient water quality standard for the waters of Lake Erie. In addition, the International Joint Commission (IJC) has authority to develop recommendations for water quality improvements if requested by U.S. EPA or Environment Canada.

One or both of these entities should be engaged in setting assessment methods to provide uniform listing and de-listing criteria by all of the Lake Erie states as well as Ontario. Single state impairment designation is complicated and questionable since the algae is seasonal, transient, spatially and temporally unpredictable and variable in species make-up, toxicity and bio-accumulation, whether present throughout the lake's various jurisdictions or contained to specific areas. A common threshold and assessment method would provide consistency in how each state assesses and lists waters within their jurisdiction.

In the 2014 IR, Ohio did provide a planned approach for assessing impairment in the open waters. However, that plan was based on the expectation that the Great Lakes Water Quality Agreement Annex 4 task team would develop concentration thresholds for nutrients, chlorophyll-a or a related parameter which could be used to assess the open lake attainment of our narrative water quality standard - that did not happen. Instead, the recommendations are to focus on reducing loads from the tributaries, which is what we have been doing.

To help with consistency, clarity and to provide a path forward that would benefit us all, Ohio suggested the following to U.S. EPA in a letter dated September 30, 2016;

1. U.S. EPA should finalize the recreation standard for algal toxins (microcystin), or at a minimum a threshold that could be used to consistently interpret narrative water quality standards. Once

that level is established, it would provide Ohio and other states with at least one common parameter and value to use for assessing and listing the open waters for harmful algal blooms.

2. Ohio in collaboration with U.S. EPA will explore one of the existing processes (GLNPO or IJC) to facilitate a multi-state and Ontario discussion on establishing standards and methods to assess aquatic life use and other standards for use in assessing impairments in Lake Erie.
3. U.S. EPA should recognize and validate that any efforts which will ultimately remove the nutrient impairment from the shoreline and algae toxin impairment from the drinking water in-takes will most likely address water quality issues resulting from excessive nutrients and algae in the open-waters. We are committed to addressing those impairments through Annex 4.

Summarized comment 2: It is inaccurate to associate the Toledo and Oregon drinking water intakes with the shoreline assessment units since these structures are clearly in the open waters.

Response 2: Ohio has not formally designated assessment units in Lake Erie beyond the current shoreline assessment units and the Lake Erie PDWS zones do not reside within an existing assessment unit. Since Ohio has standards, data and an assessment methodology for the PDWS beneficial use we felt it was important to include those assessments in the Integrated Report and instead of creating 28 separate assessment units for the Lake Erie intakes, we decided to simply associate the PDWS zones with the nearest Lake Erie Assessment Unit. It should be noted that many of the Lake Erie intakes and assessment zones are within or near the shoreline assessment units.

PDWS assessments are based on source water drawn directly from the intakes and therefore representative of the waters where the beneficial use applies.

Comment 3: One approach Ohio EPA could take is to reframe its Assessment Unit framework beyond the limitations of the shoreline geography and propose a new unit(s) that aligns with loading at the mouth of the Maumee River. Section G-6 of the Integrated Report defines lacustuary, the zone where Lake Erie water levels have intruded into tributary river channels and describes the extensive body of work that led to defining these waters. This zone could be its own Assessment Unit.

A lacustuary-based Assessment Unit could then be aligned with the GLWQA targets for the Maumee River basin (as well as other major tributaries draining to Lake Erie). The GLWQA target for spring for the Maumee River equates to 860 tons of total phosphorus and 186 tons of DRP. We recommend using a Flow-Weighted-Mean-Concentrations (FWMC) equivalent as a benchmark to track progress in load reduction during a specific period (e.g., annually or March-July) and address variability by year with respect to flow. A lacustuary-defined Assessment Unit would enable Ohio EPA to make an impairment determination for that AU and apply a nutrient concentration number to a meaningful geography and serve as the basis for a TMDL. The target load and/or FWMC can then be sub-allocated to the watersheds in the Maumee River basin and provide the basis for future TMDLs. This approach would establish a basin-wide framework for TMDLs and provide a mechanism for tracking progress across the basin.

Linking the GLWQA target for the Maumee River basin with the TMDL program is an opportunity synchronize state programs and processes with those at the federal and binational level. A comprehensive approach towards meeting the 40% reduction target and reducing algal blooms is necessary regardless of impairment status of individual water bodies or assessment units.

Response 3: This is an interesting suggestion and something that Ohio EPA will take into consideration in our efforts to implement the Annex 4 recommendations and address far field impacts caused by nutrients. That said, our inland stream and river biocriteria do not apply to lacustuary areas, at this time, and some effort would have to be undertaken to pursue this approach.

Currently, for lacustuary areas, Ohio EPA has to determine aquatic life use (ALU) attainment status with a narrative assessment of the, for the most part, designated warm water habitat (WWH) use. Tools that we have been using over the years to do this include the lacustuary index of biotic integrity (LIBI), modified index of well-being (MIwb) and lacustuary invertebrate community index (LICI) scores and targets that the Agency developed in the mid-1990s to give us an additional way of looking at data from these unique areas. Unfortunately, these have never been codified in rule and are still just one tool that we can look at and use to assess the lacustuaries' ALU status. This will still be the case regardless of whether the lacustuary is its own AU or, as it is now, part of the lower LRAUs for each river; in both situations, the AU is or would be listed as impaired.

Over the years, the lacustuary bio-indices have often been used (and misused) to the point that there is a perception that the benchmarks/thresholds/targets are actual enforceable criteria. On the contrary, the more we have used them, the more we have realized their limitations, especially for the macroinvertebrate LICI scores, which are almost always well below our "targets." Because of this, we need to reevaluate using the macroinvertebrates in the lacustuaries and perhaps focus on some other indicator such as benthic algae to go along with the fish.

In essence, regulation changes are needed to fully support the establishment of lacustuary AUs, so while adoption of this approach can be considered for future reports, it cannot be completed this cycle. Furthermore, it should be noted that the lengths of the lacustuaries decrease rapidly as one heads east and there may be a point where it doesn't make sense to have a lacustuary AU for a major river which only accounts for a few miles of Lake Erie backwater.

Comment 4: [Section L3. Status of Lake Erie Assessment Units]

- [Section L3] does not show the status of implementation plans and the amount of reductions achieved as a result of the plan/TMDL. This needs to be included in the [list].
- These Assessment Units delay field monitoring until 2020 in the Lake Erie watershed. Waiting until 2020 is unacceptable.
- This section should include a basin-wide TMDL for Ohio's western Lake Erie Watershed.

Response 4: While we recognize that the status of implementation plans and the amount of reductions achieved would be useful, the CWA Section 303(d) and 40 CFR 130.7 do not require states to submit these items to U.S. EPA. Only the two-year schedule for TMDL development is required and that is in included in Section J of the report. In addition, Section J and earlier responses to comments explain our position on the best approach for Lake Erie. The schedule indicates that the next monitoring will be done in 2020 because that is the schedule for the next National Coastal Condition Assessment effort that is led by U.S. EPA. Ohio EPA participates in those assessments, which are planned to occur every five years and, where possible, we use the information for assessing the applicable assessment unit. It should be noted however that Ohio EPA does conduct biological and chemical/physical monitoring in the lake every year (see the Lake Erie study plan at: http://epa.ohio.gov/dsw/lakeerie/index.aspx#125073721-nearshore-monitoring)

Aquatic Life Use Comments

Comment 5: According to the most recent report, the Olentangy Watershed has made a miraculous recovery. The 12 Digit HUC (05060001 11 02), the Rush Run-Olentangy River HUC (30.65 sq miles) has a watershed score of 100. This is very misleading and appears as a very unscientific way to approach the actual water quality in the state of Ohio. This watershed has not been sampled by Ohio EPA since 2003-2004 and will not be sampled again until 2018. In light of the fact that there is no new data, **the best course is to keep the actual score from 2003-2004 in place until you can show what the water quality change actually is.**

The only reason that this watershed has a score of 100 is because you have eliminated all the old data (2003-2004) and there are no data points. This should make the score 0 (unknown or not attaining) not 100 (Fully Attaining). FLOW is very supportive of the fact that Ohio EPA needs more funding so that watersheds can be sampled more frequently (every 5-10 yrs). Please put our real data back into the Integrated Assessment Report and show it as historical.

Conversely, the nicer part of our watershed (05060001 11 01 Deep Run Olentangy Watershed 48.91 square miles) only has a score of 33.3 due to 2 points along a small headwater stream (Wildcat Run in Liberty Township Park). This data was collected as part of a Source Water Improvement Grant and does not reflect the watershed health. This part of our watershed has better watershed health.

Response 5: The data from 2003-2004 shows that the Rush Run-Olentangy River assessment unit was in full attainment at the two Olentangy River sites assessed by Ohio EPA. Waters in "full attainment" are assigned an index score of 100. Ohio EPA did not assess any other sites in the tributaries in that HUC in 2003-2004, so it may not have been the best portrayal of the overall HUC status, but we can only use the data we have to calculate the score. Such was the status of this assessment unit beginning with the 2012 Integrated Report when we first assessed this specific HUC-12 with the available 20003-2004 data. We do agree that this can be misleading when the data become more than 10 years old and are deemed historical, as happened in the 2016 IR. When that happens, we flag the assessment unit as being in historical data status but, at the same time, keep the original score for the unit so that readers know what the most recent assessment unit status was. However, by being flagged as historical, the score is no longer used in any statewide statistics generated in the report. Ohio EPA will consider not assigning a watershed index score in future reports for assessment units with newly determined historical data, although we believe there is value in retaining what the most recent score was while ensuring it is not being used in statewide statistic development until new data are collected.

Human Health Use (Fish Contaminants) Comments

Comment 6:

- Fish tissue should be measured for BMAA toxin in brain and neurologic tissue as BMAA has recently been found in the brain tissue in fish from Grand Lake St. Mary's. (Personal communication from Geo. Bullerjahn)
- BMAA unlike microcystin, saxitoxin, et alia, are not being measured. Current literature suggests that this is likely a serious omission.

Response 6: The emerging BMAA toxin is the subject of ongoing medical and environmental research. Studies by the research community have not yet produced thresholds for safe levels of exposure. One major scientific hurdle for evaluating BMAA in fish tissue is that there is a lack of toxicity information available with which to work. What this means in practical terms is that, if we diverted resources to BMAA monitoring in fish tissue, we would still not have any way to interpret the data to conclude if the fish are safe or harmful to consumers. We would be left with numbers without meaning, which is hard to justify.

It cannot be understated that monitoring for emerging toxins is not a simple or straightforward process—it can be incredibly resource-intensive and yet still fail to yield usable information if the science is not properly developed, as the case may be for BMAA at the present.

Please note that Ohio remains at the forefront of algal toxin-monitoring in sport fish. We first partnered with researchers State University of New York to develop a method for analyzing microcystin toxin in fish tissue in 2010. Since then, we have also partnered with researchers at the Ohio State University to continue with this method development to allow us to measure a broader array of microcystin molecules and to measure them more accurately. We are now on the verge of being able to measure all 80+ microcystin molecules in fish tissue, with results expected in early 2017, after seven years of very hard work and a large investment of resources. So far, these results continue to confirm that the risks of microcystin toxicity from consuming Ohio sport fish is low.

Public Drinking Water Supply Use Comments

Summarized Comment 7: Ohio should not use raw water to evaluate the Public Drinking Water Supply Beneficial Use since the use designation applies to waters that, with conventional treatment, will be suitable for human intake and meet federal regulations for drinking water.

Response 7: The commenters are correct in noting that the Public Drinking Water Supply beneficial use is different than other uses in that there is an assumption of some level of source water treatment at a public drinking water treatment plant. Section H clearly states that "Conventional Treatment" is the benchmark for base level of treatment and includes conventional filtration and disinfection. Conventional filtration treatment as defined in Ohio Administrative Code (OAC) rule 3745-81-01, Primary Drinking Water Rules, means a series of processes including coagulation, flocculation, sedimentation and filtration resulting in substantial removal of particles. Treatment process such as powdered active carbon (PAC), granular activated carbon (GAC), ozonation and others are considered advanced treatment beyond conventional measures. Conventional treatment alone is ineffective at cyanotoxin removal and these advanced and expensive processes are often required. Because the presence of cyanotoxins in the raw water necessitates treatment beyond conventional measures it is entirely appropriate to use raw water as an indicator to assess the Public Drinking Water Supply beneficial use. This same approach is also used to evaluate the nitrate indicator because conventional processes are ineffective for nitrate removal.

Summarized Comment 8: There is currently no numeric water quality standard for algae in Ohio and the linkage between the narrative water quality criteria and the Safe Drinking Water Act (SDWA) standards is not demonstrated.

Response 8: During the 2014 reporting cycle, Ohio incorporated assessment of algae into the public

drinking water use assessments. These assessments are based on the aesthetic narrative criteria for algae described in OAC Rule 3745-1-07(A)(4)(c) which calls for protection against adverse aesthetic conditions and specifically applies to all water bodies within 500 yards of a drinking water intake. Because no specific chemical water quality standards exist for algae, Ohio is using the State's drinking water thresholds as an indicator for the narrative criteria. Since conventional treatment is ineffective at removing cyanotoxins, the thresholds provide an appropriate indication when algae is adversely affecting the source water and the beneficial use. Additionally, public water systems that exceed the thresholds in raw water often experience taste and odor events and are required to conduct additional monitoring. If cyanotoxins are detected in finished water it also triggers additional monitoring and treatment requirements with added costs for the public water systems, regardless of whether or not there are MCLs established for cyanotoxins.

Comment 9: Lake Erie's water intake HAB sources need to be a high priority for Ohio EPA. The public water supplies for Lake Erie and its tributaries are experiencing hundreds of millions of dollars in cost to monitor and address toxins in the water intake. The algae toxin sources for all Lake Erie water intakes need to be a high priority for this report to be addressed. Safe Drinking Water Act source water planning and source reductions need to be a high priority for Ohio EPA.

Response 9: Protecting drinking water sources and assuring Ohioans are provided safe drinking water has been and will continue to be a very high priority for Ohio EPA. Ohio's response to harmful algal blooms is viewed by many across the county as one of the leading and most protective programs. Ohio Senate Bill 1 was passed in July 2015 and specifically directed Ohio EPA to implement actions to protect against cyanobacteria in the western basin on Lake Erie and in public water supplies. This legislation led to creation of Ohio Revised Code 3745.50 authorizing the director of Ohio EPA to serve as the coordinator of harmful algae management and response. Ohio EPA was required to implement actions that manage wastewater and limit nutrient loading and develop and implement protocols and actions to protect against cyanobacteria and public water supplies. Ohio adopted new and revised rules, effective June 1, 2016, to meet these requirements, including formalization of health advisory levels, monitoring and reporting requirements for total microcystins in drinking water. Ohio EPA will also continue to be progressive in addressing harmful algal blooms by coordinating Safe Drinking Water Act (SDWA) and Clean Water Act (CWA) programs to address the source of the problem.

Recreation Use Comments

Comment 10: Effective January 4, 2016, Ohio EPA has changed standards on *E. coli* concentrations for recreational water uses. These changes include numerical changes in the bacterial colony count in various use categories, as well as lengthening the time period for "threshold values" from 30 days to 90 days. The time period is extremely significant, since bacterial counts balloon in the warm summer months (June, July and August), which, of course, are the most popular times for water recreation. If you had applied the "new" standards to the data in the 2016 report, instead of the "old" standards, how would the "use attainment" figures reported in Table F-12 be changed? The "old" standards gave 10% supporting and 90% not supporting. This will be important for citizens to assess objectively whether or not water quality is improving.

Response 10: The figures in Table F-12 are derived based on the same criteria and methods that have been used in the past two Integrated Report (IR) cycles. Table F-1 clearly explains the water quality standards (WQS) and methods that were used, which are the WQS that were in place at the time of the analysis. The new *E. coli* criteria were adopted on Jan. 4, 2016, after the calculations were completed

for the 2016 IR. The 2018 IR will be the first cycle where the new *E. coli* criteria are used for the purposes of determining use attainment.

The averaging period used for determining the geometric mean had been the entire recreation season and this was consistent with federal guidance and approved by US EPA. In 2012, US EPA finalized new recreational water quality criteria, which included a change to the averaging period to 30-days compared to their previous guidance on this topic. Ohio EPA adopted revised recreational water quality criteria that became effective on Jan. 4, 2016, which were reviewed by US EPA and found to be consistent with the new federal recommendations as determined in their approval action.

The Jan. 4, 2016, revision of Ohio's recreational water quality criteria actually shortened the averaging period from the entire recreation season (approximately 180 days) in place at the time by about half to 90 days. A 90-day averaging period has a couple of advantages over a shorter 30-day period. First, the 90-day period allows for the collection of more samples which, in turn, allows for the calculation of a more statistically robust geometric mean and therefore a more accurate reflection of water quality and use assessment. The 90-day period also coincides well with the time of peak recreational use, Memorial Day to Labor Day. The majority of data used in recreational use assessment will come from samples collected during this time period.

A very important consideration in trend assessment is making use of a consistent approach and consistent goals against which attainment is being measured. Fluctuations in either of these make simple comparisons in something like percentage supporting versus not supporting difficult because there are moving targets. In recent years, there have been two significant changes to the "goals" (e.g., criteria) in response to mandates by federal requirements and this has also necessitated revisions to the assessment methodology as well. In the 2018 IR, we will be seeking to present some information, perhaps in a comparison of raw values over time, to see if any trends are discernible. Also, please keep in mind that while the averaging period that will be used is 90-days instead of 30-days for the geometric mean component of the criterion, we will also anticipate incorporating the statistical threshold value into the assessment process. This is an element that has not been considered in recent versions of the recreational use assessment. Also, in some cases the geometric mean criteria are also more stringent compared to the criteria used in the 2016 IR.

Summarized Comment 11: Ohio has established water quality standards for algal toxins and should list waters impaired for recreational contact beneficial use now.

Response 11: Ohio has established water quality standards for recreation beneficial use (*E. coli*) and has completed impairment determinations for all current Lake Erie Assessment Units. In fact, both the Lake Erie Western Basin and Central Basin shoreline assessment units are currently listed as impaired for the recreation use. The water quality standard used to assess recreation use in Ohio is *E. coli* based on seasonal geometric mean and single sample maximum values. Section F of the Ohio's 2016 Integrated Water Quality Report contains a detailed explanation of how recreation use is assed in Ohio and specifically at Lake Erie beaches.

Ohio does not currently have "water quality standards" for the recreation beneficial use for cyanotoxins. This seems to be a point of confusion for a number of commenters. The State of Ohio Harmful Algal Bloom Response Strategy for Recreational Waters provides "Cyanotoxin Thresholds for Recreational Waters" that are intended to serve as guidelines for public recreational water managers response to HABs. While the recommended cyanotoxin thresholds for recreational waters are helpful for beach

managers and determining when to post advisories, they are not equivalent to water quality standards. More information about Ohio EPA's water quality standards is available at http://www.epa.ohio.gov/dsw/wqs/index.aspx.

Ohio EPA uses national criteria recommendations in combination with the latest scientific information in setting the appropriate chemical water quality criteria for Ohio's surface waters. U.S. EPA is currently developing HAB exposure criteria and expects to propose recreation use water quality criteria for cyanotoxins by 2017. Ohio EPA will carefully consider any recommended federal standards for adoption in Ohio and expand recreation use assessments as appropriate. While states do have the option to develop state-specific water quality standards, it would require a significant amount of time and resources that would be duplicative to the current federal effort.

Copies of comment letters follow, alphabetical and in the order received.

Babb, Rahel

From: Harris, Melinda
Sent: Monday, August 22, 2016 8:08 AM
To: Alexander, Cathy; Babb, Rahel
Subject: FW: 2016 Integrated Assessment Report

Melinda Harris
Rules Coordinator
Division of Surface Water
Ohio Environmental Protection Agency
50 W. Town Street, Suite 700
Columbus, Ohio 43215
(614) 728-1357

From: Laura Fay [mailto:lfay9785@columbus.rr.com]
Sent: Friday, August 19, 2016 4:11 PM
To: EPA dsw.webmail <dsw.webmail@epa.ohio.gov>
Subject: 2016 Integrated Assessment Report

According to the most recent report, the Olentangy Watershed has made a miraculous recovery. The 12 Digit HUC (05060001 11 02), the Rush Run- Olentangy River HUC (30.65 sq miles) has a watershed score of 100. This is very misleading and appears as a very unscientific way to approach the actual water quality in the state of Ohio. This watershed has not been sampled by Ohio EPA since 2003-2004 and will not be sampled again until 2018. In light of the fact that there is no new data, the best course is to keep the actual score from 2003-2004 in place until you can show what the water quality change actually is.

The only reason that this watershed has a score of 100 is because you have eliminated all the old data (2003-2004) and there are no data points. This should make the score 0 (unknown or not-attaining) not 100 (Fully Attaining). FLOW is very supportive of the fact that Ohio EPA needs more funding so that watersheds can be sampled more frequently (every 5-10 yrs). Please put our real data back into the Integrated Assessment Report and show it as historical.

Conversely, the nicer part of our watershed (05060001 11 01 Deep Run Olentangy Watershed 48.91 square miles) only has a score of 33.3 due to 2 points along a small headwater stream (Wildcat Run in Liberty Township Park). This data was collected as part of a Source Water Improvement Grant and does not reflect the watershed health. This part of our watershed has better watershed health.

Sincerely
Laura Fay
Friends of the Lower Olentangy Watershed (FLOW)
Science Committee Chair

CLEAN WATER IS OUR RIGHT!

2975 113TH ST. TOLEDO, OH 43611

August 23, 2016

Tiffani Kavalec, Chief
Ohio EPA Division of Surface Water
Re: Comments on the 2016 Draft Integrated Report

Dear Ms. Kavalec,

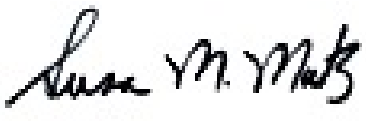
Several members of Advocates for a Clean Lake Erie (ACLE) participated in the recent webinar sponsored by the Ohio EPA to explain the 2016 Draft Integrated Report (Report). This letter constitutes our formal comment on it.

ACLE does not support the Report and believes the USEPA should reject it based on the following deficiencies:

1) The Report calls for little or no water quality sampling all the way to the headwaters of impaired streams and rivers.
2) Little or no water quality sampling will be done after wet weather events.
3) There is an over-emphasis on point sources which places unfair burden on municipal sewage treatment plants while giving agriculture a pass.
4) The OEPA claims it has "no authority" to regulate non-point runoff when in fact it does and could exert more if the Ohio legislature granted it. The OEPA should seek legislative changes needed to wield authority adequate to protect the quality of the state's waters.
5) The Report does not call for mandatory, enforceable TMDL's which allow for lawsuits to be filed if there is non-compliance with reduction measures.
6) The Report continues a piecemeal approach declaring only certain rivers or parts of rivers and areas up to 100 meters from shoreline or at water intakes as impaired. There is no coordinated, mandatory and measurable plan to clean up the entire WLEB.

In our opinion, the Ohio EPA needs to take this Draft Report back to the drawing board and return with one that clearly has the health of our drinking water and the health of our citizens at heart.

Sincerely,



Susan Matz
Coordinator

Mike Ferner
Coordinator

Cc: Benita Best-Wong, Director, USEPA Office of Wetlands, Oceans and Watersheds
Tom Wall, Director, USEPA Assessment and Watershed Protection Division
Tinka Hyde Director, USEPA Region 5 Water Division

From:	Greg Arko
To:	EPA dsw.webmail
Subject:	Lake Erie
Date:	Thursday, August 25, 2016 9:16:32 PM

It is absolutely pathetic that we sit on the greatest fresh water resources on this planet- yet we continue to defile this treasure! We must do everything necessary to preserve the integrity, safety, and environmental quality of this asset! It is not an endless asset without our stewardship. It must be preserved for our future generations at any cost!
Dr. Gregory Arko
Medina, Ohio

Sent from my iPhone

Vickie A. Askins
6335 Solether Road
Cygnet, Ohio 43413
419.655.2057

August 25, 2016

Ms. Tiffani Kavalec, Chief
dsw.webmail@epa.ohio.gov
Ohio EPA Division of Surface Water
P. O. Box 1049
Columbus, Ohio 43216-1049

Attn: 303(d) Comments

Dear Ms. Kavalec,

Please accept the comments below regarding the draft ***Ohio 2016 Integrated Report*** on behalf of the Ohio Environmental Stewardship Alliance. The OESA is very concerned about the impact massive amounts of nutrient-rich animal manure from concentrated animal feeding operations (CAFOs) is having in the western Lake Erie basin. This concern stems from Ohio's ineffective split CAFO permitting programs and Ohio's failure to enact new legislation that closes the huge loopholes in the Ohio Department of Agriculture's Livestock Environmental Permitting Program.

1. Ohio EPA states under **Section C1. Program Summary – Surface Water – Concentrated Animal Feeding Operations**:

> On December 14, 2000, Governor Taft signed a bill that started the process of transferring authority to regulate concentrated animal feeding operations (CAFOs) to the Ohio Department of Agriculture (ODA), which now regulates construction and operation of large concentrated animal feeding facilities under their Permit to Install (PTI) and Permit to Operate (PTO) programs.

This section of the Integrated Report is very brief but I believe it has huge implications. Governor Taft started this transfer process in 2000 after Ohio legislators passed Senate Bill 141. This Bill transferred authority over part of Ohio EPA's CAFO NPDES permitting program to the ODA - with the stipulation that the ODA submit a program that complied with the Clean Water Act to the EPA within 180 days***.*** However, Governor Taft did not submit the ODA's program to US EPA until December 2006. *Sixteen years after the passage of SB 141 – the U.S. EPA has still not approved the ODA's program - yet the ODA has been issuing CAFO permits since 2002.*

Confined or concentrated animal feeding operations house tens of thousands of animals or hundreds of thousands of poultry in industrial environments, which can result in a myriad of environmental problems since it concentrates massive amounts of manure in small areas. The last twenty years has seen a huge influx of CAFOs into the western Lake Erie basin.

A diverse group of scientific professionals and state agency specialists developed the ODA's "state" Livestock Environmental Permitting Program in 2001. However, the ODA has repeatedly revised these rules over the years and severely weakened the Program. The LEPP now contains many convoluted loopholes, the largest of which allows CAFO owners to circumvent all the other rules by simply selling their manure to someone else.

OEPA acknowledged via a June 2005 letter to all pending CAFO NPDES Permit applicants that ODA MMPs did **not** comply with federal NPDES laws and for that reason could **not** be used for NPDES Permits. According to Kevin Elder of the ODA – The ODA MMP "is **not** administered according to the Clean Water Act and is **not** a part of Ohio EPA's NPDES permit program for CAFOs." <u>However, the OEPA started incorporating these inadequate "State" plans in federal NPDES permits about 10 years ago</u>.

The Waterkeeper Alliance Decision included a requirement that each CAFO must develop and implement a nutrient management plan. "But not just any nutrient management plan suffices under the Rule. On the contrary" CAFOs must incorporate a NMP that "incorporates the requirements…based on a <u>field-specific assessment</u> of the potential for nitrogen and phosphorus transport from the field and that addresses the form, source, amount, timing and method of application of nutrient <u>on each field</u>…" Many ODA MMPs include only one sentence that states "The CAFO owner will sell all the manure to others not under the control of the CAFO owner." Consequently, ODA MMPs make a mockery of federal laws and should not be incorporated into NPDES Permits.

Former OEPA Director Chris Korleski and former ODA Director Robert Boggs submitted a joint letter to the heads of the Senate and House Agriculture Committees in 2009. They suggested immediate action was crucial because 2008 CAFO regulations had not yet been incorporated into the ODA's program. If ODA did not adopt specified statutory changes as quickly as possible, they suggested one alternative would have been to transfer the provisions back so the Ohio EPA could adopt the necessary rules to conform to the new federal CAFO requirements.

Later in 2009, Director Korleski endorsed transferring the NPDES permitting authority to the ODA. However, in comments before the House Agriculture and Natural Resources Committee, he stressed "In my view, if the CAFO regulations are not incorporated into ODA's program, and if Ohio does not complete all the necessary steps to allow, once and for all, <u>the full and final transfer</u> of the NPDES program for CAFOs to ODA, then the regulatory confusion over the program will continue."

To demonstrate how confusing Ohio's split permitting scheme is – US EPA Robert Tolpa commented on the ODA's proposed program and said that [federal] NPDES provisions should have been incorporated into the ODA's [state] Permit to Operate. He also commented – "Understanding of this dual permitting approach is critical to understanding how ODA intends to regulate CAFOs."

It is also important to note that the *Ohio EPA Nutrient Reduction Strategy Report* to US EPA stated– "Dramatically improve manure management practices – the improper management of livestock manure and continued over application of manure on soils that are already saturated with nutrients is a significant challenge… *Effective manure management is critical if we are to see water quality improvements and/or measurable reductions in nutrient loadings to our streams."*

The Ohio EPA Integrated Report goes on to state "The CAFO program at Ohio EPA uses a watershed perspective to prioritize work to some degree." Ohio has seen a huge influx of CAFOs over the past 20 years. There are almost 150 industrial-size CAFOs in the western basin, housing over 12 million animals that produce 700 million gallons of waste annually. It is well known that CAFOs are a big part of the pollution problem in the Chesapeake Bay, Green Bay, and Grand Lake St. Mary's watersheds, as well as many other areas in this Country.

That being the case, why isn't Ohio EPA monitoring ALL Ohio CAFOs since US EPA has not approved any transfer of regulatory authority to the ODA?

2. Numeric Water Quality Standards for CAFOs - Oho EPA noted in the 2014 Integrated Report that the "State's narrative criteria at OAC 3745-01-04(E), prohibiting, among other things, nuisance growths of algae created by nutrients entering the water as a result of human activity. Given the prevalence of HABs in the WLEB, in EPA's April 15, 2014 letter to OEPA, EPA encouraged Ohio to develop a methodology for assessing for attainment of the nuisance algal growth narrative water quality criteria."

Ohio has been trying to develop **numeric** water quality criteria for many years but has failed to complete this critical task. Ohio EPA needs to set numbers for the maximum concentration of pollutants in a stream—regardless of their source—rather than generalized **narrative** standards.

40 C.F.R. 123.36 Establishment of technical standards for concentrated animal feeding operations" states – If the State has not already established technical standards for nutrient management that are consistent with 40 CFR §412.4(c)(2), the Director **shall** establish such standards by the date specified in §123.62(e).

Why hasn't Ohio EPA established numeric water quality standards for CAFOs?

Conclusion: OESA appreciates the opportunity to comment on this Integrated Report. We strongly urge Ohio EPA to rectify Ohio's unlawful split CAFO permitting scheme and also to adopt numeric water quality standards for CAFOs.

Respectfully,

Vickie A. Askins

cc: Mike Ferner, ACLE
Adam Riesen, OEC
Sandy Bihn, Lake Erie Waterkeeper

From:	Ray Gajkowski
To:	EPA dsw.webmail; conservationi3
Subject:	Lake Erie
Date:	Thursday, August 25, 2016 7:42:54 PM

I'm writing to insist that the Ohio EPA take all necessary measures to clean up Lake Erie.

You must cut through the thin political fog and do what is right. We certainly can afford it!

Declare the whole western basin impaired

Include wet weather when assessing nutrient runoff

Include algae/toxin's in the recreational contact impairments

Provide reports to the public on details of the progress of your efforts

Request that the Ohio Department of Agriculture put more limits on the application of manure

Thanks
Raymond Gajkowski
11888 Whitestone Ct.
North Royalton, OH 44133

From:	Harris, Melinda
To:	Alexander, Cathy; Babb, Rahel
Subject:	FW: 303(d) Comments
Date:	Thursday, August 25, 2016 3:49:31 PM
Attachments:	image001.png

Melinda Harris
TMDL Supervisor / Rules Coordinator
Division of Surface Water
Ohio Environmental Protection Agency
50 W. Town Street, Suite 700
Columbus, Ohio 43215
(614) 728-1357

From: Kim Kaufman [mailto:kimkaufman@bsbo.org]
Sent: Thursday, August 25, 2016 3:48 PM
To: EPA dsw.webmail <dsw.webmail@epa.ohio.gov>
Subject: Re: 303(d) Comments

August 25, 2016
Re: 303(d) Comments

Ohio EPA
Division of Surface Water, P.O. Box
1049, Columbus, Ohio 43216-1049

To Whom It May Concern:

Thank you for this opportunity to submit comments on Ohio's Clean Water Act and Lake Erie water quality. As a resident of Carroll Township, Ottawa County, Ohio, my concerns for the health of Lake Erie and related drinking water resources are particularly relevant. On September 5, 2013, microcystin, the potentially lethal toxin in Lake Erie's blue-green algae, exceeded levels beyond the capability of our Carroll Township water treatment plant. Two thousand people could not drink the water.

I was one of them.

I reference the following Toledo Blade article by Tom Henry about this crisis in which I am quoted.
http://www.toledoblade.com/local/2013/09/15/Carroll-Township-s-scare-with-toxin-a-wake-up-call.html

Lake Erie is the drinking water source for 11 million people and is vital to Ohio's economy. I respectfully request that:

1. the Western Basin of Lake Erie be declared "Impaired," and that the Toledo and Oregon intakes be part of the basin-wide impairment, rather that the proposed nearshore area which is not a major contributor to the intake algae;

2. Ohio EPA include wet weather in assessing nutrient runoff;

3. Ohio EPA include algae/toxins in its recreational contact impairments;

4. Ohio EPA provide an annual report to the public that identifies sources and amounts of Lake Erie algae/nutrients, and how many pounds/units are reduced from the funding/changes to reduce nutrient runoff;

5. Ohio EPA request the Ohio Department of Agriculture to create rules that limit manure application of phosphorus to the crop need/agronomic amount.

Thank you for considering my concerns and my request for action.

Sincerely,

Kimberly Kaufman
Resident, Carroll Township, Ottawa County, Ohio
Executive Director
Black Swamp Bird Observatory
Oak Harbor, Ohio 43449
419-898-4070 (Ext. 201)

From:	EYandek@aol.com
To:	EPA dsw.webmail
Subject:	Comments on Ohio EPA 303(d) Lake Erie Water Quality
Date:	Thursday, August 25, 2016 10:51:33 PM

TO:

Ohio EPA
Division of Surface Water, P.O. Box
1049, Columbus, Ohio 43216-1049
dsw.webmail@epa.ohio.gov

Subject : 303(d) Comments on Lake Erie Water Quality

Thank you for this opportunity to submit comments on Ohio's Clean Water Act -- Lake Erie Water Quality.

Lake Erie is the drinking water source for 11 million people and is commercially vital to Ohio's economy. It is a matter of public record that Ohio residents want prompt and decisive action to be taken to improve Lake Erie water quality.

As such, it is imperative that the following actions be taken --

1. The Western Basin of Lake Erie should be declared impaired.

2. The Toledo and Oregon intakes should be part of a basin wide impairment. The proposed near shore area has been proven by studies to not be the major contributor to the Lake Erie algae issue.

3. Ohio EPA should include wet weather (rain) factors in assessing nutrient runoff as already justified by scientific studies and current HAB predictive models.

4. Ohio EPA should include harmful algae toxin concentrations when assessing recreational contact risks.

5. Ohio EPA should provide an annual report to the public that identifies sources, amounts of Lake Erie algae/nutrients, and how many pounds/units have been reduced from efforts aimed at reducing nutrient runoff.

6. Ohio EPA should request that the Ohio Department of Agriculture create specific rules that limit manure application of phosphorus to crops and that the permissible levels be limited to an absolute minimum amount since such applications have been determined to be a major source of harmful algal blooms. Pig farms are one such proven source of unacceptable manure application.

Sincerely,

Edward M Yandek
3025 East Overlook Rd
Cleveland Hts, OH, 44118

EYandek@aol.com

216-321-0467

From:	Harris, Melinda
To:	Alexander, Cathy; Babb, Rahel
Subject:	FW: comments on Ohio's Clean Water Act Lake Erie water quality
Date:	Friday, August 26, 2016 10:31:06 AM
Attachments:	image001.png

Melinda Harris
TMDL Supervisor / Rules Coordinator
Division of Surface Water
Ohio Environmental Protection Agency
50 W. Town Street, Suite 700
Columbus, Ohio 43215
(614) 728-1357

From: Little Sister [mailto:bandore4u@gmail.com]
Sent: Friday, August 26, 2016 9:44 AM
To: EPA dsw.webmail <dsw.webmail@epa.ohio.gov>
Subject: comments on Ohio's Clean Water Act Lake Erie water quality

Ohio EPA
Division of Surface Water, P.O. Box 1049, Columbus, Ohio 43216-1049
dsw.webmail@epa.ohio.gov

Attn: 303(d) Comments

Thank you for this opportunity to submit comments on Ohio's Clean Water Act Lake Erie water quality. Lake Erie is the drinking water source for 11 million people and is vital to Ohio's economy. The following is requested:

1. That the western basin of Lake Erie be declared impaired and that the Toledo and Oregon intakes be part of the basin wide impairment rather that the proposed near shore area which is not a major contributor to the intake algae.

2. That Ohio EPA include wet weather in assessing nutrient runoff.

3. That Ohio EPA include algae/toxin's in its recreational contact impairments.

4. That Ohio EPA provides an annual report to the public that identifies sources and amounts of Lake Erie algae/nutrients and how many pounds/units are reduced from the

funding/changes to reduce nutrient runoff.
5. That Ohio EPA request the Ohio Department of Agriculture to create rules that limit manure application of phosphorus to the crop need/agronomic amount.

Thank you!

Resident of Maumee Watershed, receiving water from Lake Erie,\

Sue Terrill
1722 Eileen Rd.
Toledo, OH 43615

From: Claire Tinkerhess
To: EPA dsw.webmail
Subject: Ohio"s Clean Water Act Lake Erie
Date: Friday, August 26, 2016 7:40:57 AM

To Whom It May Concern,

I am writing about Ohio's Clean Water Act Lake Erie water quality. I hope you will take this opportunity to make a difference in the future of Lake Erie by adopting the following proposals:

1. That the western basin of Lake Erie be declared impaired and that the Toledo and Oregon intakes be part of the basin wide impairment rather that the proposed near shore area which is not a major contributor to the intake algae.
2. That Ohio EPA include wet weather in assessing nutrient runoff.
3. That Ohio EPA include algae/toxin's in its recreational contact impairments.
4. That Ohio EPA provides an annual report to the public that identifies sources and amounts of Lake Erie algae/nutrients and how many pounds/units are reduced from the funding/changes to reduce nutrient runoff.
5. That Ohio EPA request the Ohio Department of Agriculture to create rules that limit manure application of phosphorus to the crop need/agronomic amount.

Claire Tinkerhess
183 Vine Street
Lakeside Ohio 43440

621 Miner
Ann Arbor MI 48103

ctinkerhess@comcast.net

From:	Harris, Melinda
To:	Alexander, Cathy; Babb, Rahel
Subject:	FW: 303(D) Comments
Date:	Monday, August 29, 2016 8:05:26 AM
Attachments:	image001.png

Melinda Harris
TMDL Supervisor / Rules Coordinator
Division of Surface Water
Ohio Environmental Protection Agency
50 W. Town Street, Suite 700
Columbus, Ohio 43215
(614) 728-1357

From: Rob Wolas [mailto:sbc2000rw@comcast.net]
Sent: Sunday, August 28, 2016 12:25 PM
To: EPA dsw.webmail <dsw.webmail@epa.ohio.gov>
Subject: 303(D) Comments

Thank you for this opportunity to submit comments on Ohio's Clean Water Act Lake Erie water quality.

The following comments are submitted of behalf of the Associated Yacht Clubs.

We are a 30,000 member organization based in the western end of Lake Erie

Our mission is to promote safe boating and waterways ecology for our members and we meet monthly.

We are also members of the Lake Erie Waterkeeper organization.

The following items are requested:

That Ohio EPA include algae/toxin's in its recreational contact impairments

That Ohio EPA include wet weather in assessing nutrient runoff

That Ohio EPA request the Ohio Department of Agriculture to create rules that limit manure application of phosphorus

to the crop need/agronomic amount

That the western basin of Lake Erie be declared impaired and that the Toledo and Oregon intakes be part of the basin
wide impairment rather than the proposed near shore area which is not a major contributor to the intake algae

That Ohio EPA provides an annual report to the public that identifies sources and amounts of Lake Erie algae/nutrients
and how many pounds/units are reduced from the funding/changes to reduce nutrient runoff

The Associated Yacht Clubs is very aware that Lake Erie is the drinking water source for millions of people
and is vital to Ohio's economy

Sincerely,

Robert Wolas
Executive Secretary
Associated Yacht Clubs
30432 Windsor
Gibraltar, Michigan 48173
sbc2000rw@comcast.net

ALLIANCE FOR THE GREAT LAKES

ENSURING A LIVING RESOURCE FOR ALL GENERATIONS

August 29, 2016

VIA EMAIL TO: dsw.webmail@epa.ohio.gov

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

RE: Comments on Ohio's Draft 2016 Clean Water Act Section 303(d) list and Integrated Water Quality Monitoring and Assessment Report

Dear Ohio EPA:

The Great Lakes are a global treasure – their waters sustain millions of people, thousands of communities, a vibrant economy and a truly remarkable ecosystem. Harmful and nuisance algal blooms caused by excess nutrient runoff are among the top threats to the Great Lakes, posing risks to drinking water supplies, quality of life and economic vitality. Nowhere is this more obvious than in the western Lake Erie basin. Our comments below supplement comments we joined with the Ohio Environmental Council and other groups, which we also support.

We are concerned that Ohio has violated its Clean Water Act Section 303(d) regulatory obligation to identify impaired or threatened waters with regard to Lake Erie. Ohio's draft 303(d) report fails to assess the open waters of western Lake Erie pursuant to the narrative criteria of OAC 3745-1-04(E), which requires all surface waters of the state, including the open waters of Lake Erie that fall within Ohio's jurisdiction, to be "free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of algae." The 303(d) list is a vital part of meeting Ohio's water quality standards and working toward the Clean Water Act's goal of drinkable, fishable and swimmable waters. Algal blooms resulting from excessive nutrients are unsightly, odorous, and detrimental to recreation. Algae may also interfere with drinking water treatment and some types of algae can produce toxins harmful to humans and wildlife.

Ohio's failure is especially concerning since U.S. EPA requested that Ohio EPA develop a methodology to assess the narrative criteria in a letter to the agency in April 2014 and in its decision document for the partial approval of the 2014 Integrated Report (available at http://www.epa.ohio.gov/Portals/35/tmdl/U.S%20EPAs%202014%20supporting%20decision%20document.pdf).

150 N. Michigan Ave. • Suite 700 • Chicago, Illinois 60601 • (312) 939-0838 • alliance@greatlakes.org • www.greatlakes.org

Buffalo • Chicago • Cleveland • Detroit • Grand Haven • Milwaukee

Data available from NASA and the U.S. EPA's Great Lakes National Program office amply demonstrate the prevalence of algal blooms in the open waters of western Lake Erie. Identifying an impairment of uses caused by algal blooms is a macro-level observation. Given the data that is readily available through federal agencies, park employees, academic institutions, and citizens, it is reasonable to expect Ohio EPA to have at this point either identified or gathered the requisite Level 3 data in order to assess the narrative criteria for the open waters of western Lake Erie. U.S. EPA has repeatedly instructed Ohio EPA on the need to assess the open waters of western Lake Erie within Ohio's jurisdiction pursuant to Ohio EPA's own narrative criteria at OAC 3745-1-04(E) and this report should have included such an analysis. We, therefore, respectfully request that Ohio EPA include the open waters of western Lake Erie in its 303(d) list before it is submitted to U.S. EPA.

Ohio EPA's failure to assess the open waters of western Lake Erie and make an impairment determination for these areas is improper since Ohio is required to evaluate and list all waters failing to meet any applicable water quality standard. Ohio should assemble and evaluate all existing and readily available water quality-related data and information against its narrative standards. In particular, Ohio should address data on Lake Erie's phosphorus and algae conditions summarized in the May 2015 report "Recommended Phosphorus Loading Targets for Lake Erie" developed under the Great Lakes Water Quality Agreement and available online at: http://binational.net/wp-content/uploads/2015/06/nutrients-TT-report-en-sm.pdf. Based on these data, Ohio should list western Lake Erie as impaired by nutrients and algae.

Thank you for considering our comments. Should you have any questions about these comments, please do not hesitate to contact me.

Sincerely,

Molly M. Flanagan

Molly M. Flanagan
Vice President, Policy

Ohio EPA
Division of Surface Water, P.O. Box
1049, Columbus, Ohio 43216-1049
dsw.webmail@epa.ohio.gov

August 29, 2016

Attn: 303(d) Comments

On behalf of the undersigned groups please accept these comments in response to the July 29, 2016 Notice of Availability and Request for Comments Federal Water Pollution Control Act Section 303(d) TMDL Priority List for 2016. Our comments center not only on the priority list but also on the analysis and information in the Ohio 2016 Integrated Water Quality Monitoring and Assessment Report Final Draft (Integrated Report).

While our organizations care about all of Ohio's waterways, our specific focus in these comments is on pollution that causes the growth of harmful algal blooms and related cyanotoxin production in Lake Erie. As described in our comments below, we urge an immediate determination that the open waters of Lake Erie are impaired. This requires analyzing data according to a specific methodology in order to find the open waters are failing to provide defined designated uses. Since Ohio EPA did not complete the requisite analysis, then the U.S. EPA must do so. Ohio EPA should also work with U.S. EPA to develop a comprehensive regional TMDL that limits total and soluble phosphorus feeding algae pollution. In addition, we ask Ohio EPA to explain in its Integrated Report how the agency will address the 2015 Ohio Supreme Court's decision in Fairfield County v. Nally, which has had significant legal, programmatic, and water quality implications. Until such time Ohio restores the validity of its TMDLs and can ensure timely development of future TMDLs, it may be necessary for the U.S. EPA to administer Ohio's program.

A Determination of Lake Erie's Impairment Status is Required by the Clean Water Act

The Integrated Report explains Lake Erie was separated into three shoreline assessment units extending 100 meters out from the shore in the western and central basins as well as the islands. It further states, "[t]hese assessment units also include Public Drinking Water Supply intake zones (500-yard radius around intakes) associated with the nearest shoreline unit even if they are greater than 100 meters from the shore,"(p. D-2). Areas outside these assessment units are considered the "open waters."

The Integrated Report also explains the open waters were not analyzed for potential impairment citing efforts to reduce phosphorus loads entering the western basin through the Great Lake Water Quality Agreement, and because the open waters have shared federal oversight between both the U.S. and Canadian governments:

> For this and other reasons outlined in Section J3, Ohio does not intend to pursue development of the open water assessment units and methods at this time. (Integrated Report, p. D-6)

Our organizations recognize the complexity of shared jurisdiction, and also support efforts under the Great Lake Water Quality Agreement to protect, restore and enhance the waters of all the Great Lakes. However, the Clean Water Act (section 303(d)(1)(A)) has clear requirements for the open waters:

> Each State shall identify those waters within its boundaries for which the effluent limitations required by section 1311(b)(1)(A) and section 1311(b)(1)(B) of this title are not stringent enough to implement any water quality standard applicable to such waters. The State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters.

In order to identify those waters where effluent limits are not sufficient to implement water quality standards, the Ohio EPA had a clear duty to analyze credible data according to a specific methodology to determine potential impairment of designated uses and water quality criteria defined in the Ohio Administrative Code (O.A.C.). In fact, the 2014 Integrated Report states,

> Lake Erie is defined in Chapter 3745-1 of the Ohio Administrative Code (Ohio's Water Quality Standards) as Exceptional Warmwater Habitat (EWH). As such, numeric criteria for the protection of aquatic life set forth in rules 3745-1-07 (statewide criteria), 3745-1-31 (Lake Erie standards) and 3745-1-33 (Lake Erie drainage basin criteria) apply and must be met as outside mixing zone standards.
> (2014 Integrated Report, p. I-30).

Additionally, other standards and criteria apply as well, including those in the O.A.C. 3745-1-04 titled "Criteria applicable to all waters" that lists specific water quality criteria; specifically one directing surface waters to be,"(E) Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae."

It is clear the O.A.C. contains both water quality standards and criteria for the open waters of Lake Erie, therefore it is incorrect for the Integrated Report to claim "[c]urrently no established standards for Lake Erie open waters," in Figure J- 6 titled *Key steps in the state TMDL and binational Annex 4 processes*, (Integrated Report, p. J-13).

Furthermore, the U.S. EPA accepted the state's 2014 303(d) list with the exception of the open waters for western Lake Erie in a August 2015 letter to the Ohio EPA (enclosed). Here the U.S. EPA deferred its decision to accept or reject Ohio's omission of waters beyond the shoreline assessment unit on the 2014 303(d) list for public drinking water supply, explaining:

> EPA's deferral is due to proposed additions to Ohio's Lake Erie AUs [assessment units] that would expand coverage to all drinking water intakes in the WLEB [western Lake Erie basin] for the next listing cycle. EPA is only deferring action on assessment determinations related to microcystin impacts to the PDWS [public drinking water sources] use for the open waters of the WLEB.

The referenced assessment units were proposed in the 2014 Integrated Report under section I5.2.2 (p. I-32,33), and divided the western basin into three separate assessment units: Shoreline, Nearshore and Offshore. Overall, ten Lake Erie assessment units were proposed. The western basin Nearshore assessment unit would include the public drinking water supply intake for the cities of Toledo and Oregon. However, in the 2016 Integrated Report, Ohio EPA chose not to utilize this approach and included as part of the western basin shoreline unit an additional 500 yard radius zone around the drinking

water intakes beyond 100 meters from the shoreline. It is unclear if the U.S. EPA would have deferred approval of the 2014 303(d) list had Ohio EPA proposed this approach in its 2014 Integrated Report. What is clear though, is that U.S. EPA expected Ohio to evaluate all ten Lake Erie assessment units:

> EPA will coordinate with Ohio EPA and expects Ohio EPA to fully assess the ten AUs for Lake Erie and to assemble and evaluate all existing and readily available data, including EPA data, for the 2016 integrated report and listing cycle...EPA notes that Ohio has not assessed Lake Erie with respect to the State's narrative criteria at OAC 3745-01-04(E), prohibiting, among other things, nuisance growths of algae created by nutrients entering the water as a result of human activity. Given the prevalence of HABs in the WLEB, in EPA's April 15, 2014 letter to OEPA, EPA encouraged Ohio to develop a methodology for assessing for attainment of the nuisance algal growth narrative water quality criteria. Ohio responded in a letter on May 28, 2014 that it would consider those methods that meet its requirement for credible data, and that biomass may be used once a reliable method is established and accepted. Finally, in its future assessment of the new Lake Erie AUs, EPA requests that Ohio consider the impacts of HABs and nuisance algal growth on aquatic life use, in addition to the impacts on recreational use.
> (p.15-16)

Ohio's 2014 Integrated report, in section I5.2, details an entire framework for evaluating Lake Erie water quality, including data sources. The 2016 Integrated Report does not explain why this framework is not sufficient to assess the open waters, and rather than develop a methodology to assess the degree to which Lake Erie is meeting its water quality criteria, the Ohio EPA explained the US EPA was the proper agency to conduct this assessment:

> Ohio EPA believes that assessment and listing of the open waters under the CWA should be led by U.S. EPA in consultation with the states and Ohio is willing to assist its federal partners with the development of appropriate monitoring and assessment protocols for the open waters.
> (Integrated Report, p. D-6)

Existing data supports an impairment designation of the open waters of Lake Erie. In October 2011, the National Aeronautics and Space Administration Landsat-5 satellite acquired images of the microcystin bloom covering much of the western basin of Lake Erie (National Aeronautic and Space Administration, Toxic Algal Bloom in Lake Erie).[1] NASA again captured Lake Erie's harmful algal bloom with satellite imagery in August 2014 (NASA Earth Observatory, Algae Bloom on Lake Erie).[2] According to U.S. EPA, data available from the U.S. EPA's Great Lakes National Program office also demonstrates the prevalence of nuisance HAB's in the open waters of Lake Erie. Images taken and testimony by recreationalists and state park employees also speak to the nuisance quality of the algal blooms in the open waters of Lake Erie.

Given the data that is readily available through federal agencies, park employees, and citizens, it is reasonable to expect Ohio EPA to have at this point either identified or gathered the requisite Level 3 data in order to assess the narrative criteria for the open waters of Lake Erie. U.S. EPA has repeatedly instructed the Ohio EPA on the need to assess the open waters of Lake Erie within Ohio's jurisdiction

[1] See http://visibleearth.nasa.gov/view.php?id=76127)
[2] See http://earthobservatory.nasa.gov/IOTD/view.php?id=84125)

pursuant to Ohio EPA's own narrative criteria at OAC 3745-1-04(E) and it was expected that this report would include such an analysis.

The Clean Water Act establishes a statutory duty to determine the extent Lake Erie's open waters provide designated uses and meet narrative water quality criteria. Since Ohio EPA has failed to conduct this analysis, we agree with Ohio EPA that U.S. EPA should complete this task, and it is imperative the Region 5 office begin the process immediately, especially since an open water impairment determination has been pending for so long. Therefore, U.S. EPA should include a timeframe for completing the determination in its response to Ohio's 2016 303(d) list. Should U.S. EPA decline Ohio's invitation to analyze the open waters, then it should also reject Ohio's 303(d) list. Failure by U.S. EPA or Ohio EPA to analyze credible data according to a specific methodology in order to make an impairment determination for the open waters would constitute a Clean Water Act violation.

Lake Erie TMDL Development Requires a Comprehensive Approach

Our organizations agree the western Lake Erie basin shorelines, and areas around the islands as well as Toledo's drinking water intake do not provide beneficial uses or meet Ohio's water quality criteria due to harmful algal blooms and other factors identified in the Integrated Report.

It is widely understood phosphorus pollution from the Maumee River is the main driver of western Lake Erie's toxic algae. Numerous scientists estimate 85% of the river's pollution comes from crop fields and livestock operations, and multiple factors affect the degree of toxicity from harmful algal blooms such as the amount of nitrogen available to the cyanobacteria, the concentration of algal mass and the mixing of algae in the water column. Toledo's water crisis was due in part to wind and waves pushing the mass of algae over Toledo's drinking water intake and waves mixing the cyanotoxins into the water column. This means harmful algal blooms that occur outside the shoreline assessment units directly affect the ability to restore beneficial uses within them.

Therefore restoring water quality within the impaired assessment units requires a comprehensive approach that addresses harmful algal blooms throughout the entire western basin and its watershed. Such a solution is available through the establishment of a Total Daily Maximum Load (TMDL) for both total and soluble phosphorus that applies to all sources throughout the entire western Lake Erie watershed and the open waters. Obviously the open waters do not have an impairment designation, nor do all the assessment units throughout all the western basin watershed. Here the Chesapeake Bay TMDL is instructive since it applies to all assessment units throughout the entire watershed regardless of impairment status. For those assessment units with an existing TMDL, if the Bay TMDL is lower it takes precedence. This provides an instructive model since in order to bring the western basin shoreline assessment unit and the public drinking water supply zones back into attainment, all sources of phosphorus must meet a total and soluble phosphorus TMDL. Given this would include areas in Michigan and Indiana as well as Ohio, the U.S. EPA should develop a regional TMDL for total and soluble phosphorus for the three states. The US EPA can then work with Canada and Ontario to help meet the TMDL for the open waters given the provincial and Canadian federal government have different, but complementary, regulatory mechanisms that can ensure phosphorus levels do not exceed the TMDL.

However, the Integrated Report does not give priority status to develop any TMDL for the Lake Erie impaired assessment units, nor does it call on the U.S. EPA to help develop one for the three states. Rather the Integrated Report lists several efforts currently underway or in development:

> 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; and active participation on Annex 4 (Nutrients) and other Great Lakes Water Quality Agreement (GLWQA) efforts.
> (Integrated Report p. J-11,12)

Each of these initiatives and agreements offer opportunities to restore Lake Erie's water quality if they include effective mechanisms that adequately identify and addresses all sources of total and soluble phosphorus. However, Ohio EPA's characterization and reliance on existing nutrient western basin watershed TMDLs is problematic, especially since they do not include soluble phosphorus loads. This is significant since both the Ohio Collaborative Agreement and the Annex 4 Phosphorus Loading Objectives and Targets include reductions in soluble phosphorus. Additionally, relying on existing total phosphorus TMDLs to help restore shoreline beneficial uses relies on two unproven and arbitrary assumptions: 1) restoring beneficial uses for aquatic habitat, recreation and other uses in the impaired watershed and large river assessment units will also restore beneficial uses for the western Lake Erie shoreline assessment unit including the PDWS intake zones; and 2) total and soluble phosphorus in assessment units currently not impaired or without approved TMDLs do not significantly contribute to western basin shoreline impairment. If Ohio EPA continues to rely on its current TMDL program to meet Annex 4 targets or achieve a 40 percent phosphorus reduction goal by 2025, it must demonstrate a clear link between meeting currently established TMDLs and restoring water quality in Lake Erie. This will be difficult at best given the Ohio EPA statement in the Integrated Report:

> Because Ohio lacks a WQS criterion for total phosphorus concentration in Lake Erie, TMDLs were not developed to address the excessive wet weather loads delivered to Lake Erie.
> (Integrated Report, p. J-12)

Therefore it is unclear if the tributary TMDLs can significantly restore shoreline beneficial uses and meet Lake Erie water quality criteria. Additionally, in its refutation of using TMDLs to restore Lake Erie's water quality, the Integrated Report states the following:

> The TMDL process does not provide additional authority to either Ohio or U.S. EPA to regulate nonpoint sources of pollution; Ohio's regulatory tools are limited to permits and enforcement actions against point sources of pollution.
> (Integrated Report, p. J-12).

This statement deserves close scrutiny. Certainly we agree that a TMDL does not confer "additional authority," rather it confers additional "responsibility" and a state's current authority is sufficient to control nonpoint source pollution. Specifically, the state can enact new rules, pass new laws and better enforce existing regulation in order to meet a TMDL. To be clear, the CWA requires states to adopt TMDLs, which are simply a statement of the amount of pollution the waters can receive in order to meet water quality standards. The CWA then requires states to adopt a "continuous planning process," to establish a project plan for returning the impaired waters to health. To be acceptable under the CWA, the

plan to meet a TMDL must provide "reasonable assurances" that it will be successful. While most often states rely on voluntary incentive programs to control agricultural nonpoint source pollution, numerous examples demonstrate this approach oftentimes is not sufficient. Unfortunately, states typically wait for plans to fail before adopting stronger measures, if they are adopted at all. So while it is correct that the TMDL portion of the CWA does not create any new state authority, it does require that states fully use their authority to regulate nonpoint sources as necessary to provide "reasonable assurances" that the state's approach will be successful. In other words, a state is perfectly free to use existing legislation, or to adopt new legislation, to regulate nonpoint sources if doing so is necessary to achieve the goals of its TMDL program.

The CWA provides the basis for programs related to nonpoint sources. When targets for improvement of an impaired water body are created through a TMDL, nonpoint source programs under the CWA can be specifically designed to address nonpoint source contributions to the impaired waterway. A TMDL allows those programs to have a target for necessary reductions in each nonpoint source category to meet target loadings. For example, the Chesapeake Bay TMDL addresses nonpoint sources through an accountability framework that guides restoration efforts using elements including watershed implementation plans (WIPs), two-year milestones, EPA's tracking and assessment of restoration progress and specific federal actions if jurisdictions do not meet their commitments. Some WIPs for the Chesapeake Bay TMDL are specific to county contributions.[3] For example, Maryland's WIP describes strategies for the county to include urban tree plantings, forest buffers, stormwater retrofits, impervious area reductions, stream restoration, abandoned mine reclamation, urban nutrient management, and street sweeping.

Looking at Ohio's regulatory tools, numerous opportunities exist to strengthen them or more fully enforce those currently in place. For example, Ohio's Agricultural Pollution Abatement Program rules covering the land application of manure requires adherence to the Natural Resource Conservation Service's 590 Nutrient Management Standards. For too long Ohio state agencies have interpreted this rule as mere guidance that only applies after mismanagement has polluted waters of the state or an investigation of a complaint verifies a violation. However, the rule is clear:

> Each owner, operator, animal manure applicator, or person responsible for land application of manure from an animal feeding operation **shall** minimize pollution from occurring on land application areas by following the standards in the "Field Office Technical Guide,...[4]
> (emphasis added, 901: 13-1-11(A))

The Field Office Technical Guide (FOTG) has unambiguous language such as the following standard:

> Nutrients from any source **must** not be surface-applied if nutrient losses offsite are likely. This precludes spreading on:
>
> • Frozen and/or snow-covered soils; and not
> • When the top 2 inches of soil are saturated from rainfall or snowmelt.
> • When there is a greater than 50% chance of rainfall of more than ½ inch within 24 hours.
>
> (emphasis added, NRCS 590 FOTG, p. 590-6)

---

[3] *See i.e.* Maryland's FINAL Phase II WIP for the Chesapeake Bay TMDL, July 2, 2012, Section III: Allegany County, *available at* http://www.mde.state.md.us/programs/Water/TMDL/TMDLImplementation/Documents/FINAL_PhaseII_Report_Docs/Final_County_WIP_Narratives/Allegany_WIPII_2012.pdf

[4] See section A under 901:13-1-11, Land application of animal manure.

In this example, a clear reading of the rule and FOTG together demonstrates manure applications are prohibited under these specified circumstances. In fact, this was true even before enactment of Senate Bill 1 and these protections remain in place statewide, as do all other 590 standards. Therefore Ohio EPA's assertion that available regulatory tools are limited to point sources is entirely false.

In sum, our point is that a TMDL and its implementation plan must include measures that will successfully restore beneficial uses and meet water quality criteria. Should they prove unsuccessful, then the states must implement stronger measures; failing to meet a TMDL is not an option. Of all the planning processes listed in the Integrated Report in chapter J3, "Addressing Nutrients in Lake Erie," only a TMDL and its implementation plan confers the statutory obligations for the state to take stronger action that goes beyond relying on voluntary measures. All others are merely aspirational plans with no regulatory backstop to ensure they are successful.

Regarding the state initiatives and GLWQA mechanisms to restore beneficial uses in Lake Erie, our organizations certainly support Ohio's commitment to reduce phosphorus entering western Lake Erie by 40 percent by 2025, and the process currently underway to establish Domestic Action Plans under the GLWQA Annex 4. We do not view these efforts as mutually exclusive of a western Lake Erie open water impairment designation or a U.S. EPA established Tri-State TMDL. In fact the TMDL should be incorporated as an adaptive management trigger in the Ohio Collaborative Implementation Plan (CIP), which would later be incorporated into the U.S. Domestic Action Plan. In this scenario, the CIP would include a provision directing Ohio to formally request U.S. EPA develop the Tri-State TMDL should monitoring show phosphorus reductions are not sufficient enough to meet the 40 percent reduction goal. ***Absent such a trigger written into the CIP, our organizations support U.S. EPA establishing the Tri-state TMDL.*** Such an approach would strengthen ongoing efforts and plans to restore Lake Erie's water quality and provide incentives for significant progress toward reducing phosphorus pollution.

Ohio Must Address the 2015 Ohio Supreme Court Ruling

The Integrated Report explains a Ohio's established TMDLs are "arguably invalidated" and all future TMDLs must go through the state's rulemaking process.

> On March 24, 2015, the Supreme Court of Ohio determined that "A TMDL established by Ohio EPA pursuant to the Clean Water Act is a rule that is subject to the requirements of R.C. Chapter 119, the Ohio Administrative Procedure Act. Ohio EPA must follow the rulemaking procedure in R.C. Chapter 119 before submitting a TMDL to U.S. EPA for its approval and before the TMDL may be implemented in an NPDES permit" (Fairfield Cty. Bd. of Commrs. v. Nally, 143 Ohio St.3d 93, 2015-Ohio-991. (Integrated Report, p. C-17)

Due to this ruling, the Integrated Report did not include any TMDLs scheduled past 2018, which creates significant uncertainty for when Ohio will restore water quality to all the impaired assessment units in the state. Our concern is highlighted by the Ohio EPA in its January 2016 letter to Regional Administrator Hedman [enclosed], where the Agency explained that delays in establishing Ohio's TMDLs "have a direct impact on Lake Erie and our overall strategy for reducing harmful algal blooms and other nutrient impacts on rivers and streams." Even more concerning is the status of all the TMDLs currently in place and the permitted discharge limits based on these TMDLs. As the Integrated Report points out, "the effect

of the Supreme Court's ruling is arguably invalidation of all the previously approved TMDLs." If the TMDLs are no longer valid, and the Integrated Report lacks no solution currently underway to address this critical situation, then it may be appropriate for U.S. EPA to administer Ohio's TMDL Program until such a time as Ohio lawmakers or the administration develop a permanent solution to this problem.

Conclusion

The impairment status of western Lake Erie's open waters needs a timely resolution. If Ohio EPA will not conduct the necessary analysis to determine impairment then the U.S. EPA must commit to do so. Should the U.S. EPA refuse, then the Ohio 303(d) list should be disapproved by U.S. EPA.Regardless of an open water impairment designation, a tri-state TMDL for total and soluble phosphorus may be necessary in order to restore water quality in the western Lake Erie shoreline and associated public drinking water intake assessment units. The Ohio EPA should support its establishment as part of the Collaborative Implementation Plan adaptive management trigger mechanism. Finally, we urge Ohio EPA to propose a solution in the final Integrated Report to the 2015 Ohio Supreme Court ruling that arguably invalidated all of the state's TMDLs.

Cordially,

Adam Rissien
Clean Water Director
Ohio Environmental Council

Molly M. Flanagan
Vice President, Policy
Alliance for the Great Lakes

Jill Ryan
Executive Director
Freshwater Future

Jennifer Miller
Director
Ohio Chapter of the Sierra Club

Jessica Dexter
Staff Attorney
Environmental Law & Policy Center

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

AUG 07 2015

WW-16J

Craig W. Butler, Director
Ohio Environmental Protection Agency
50 West Town Street
Columbus, Ohio 43215

Re: Ohio EPA's 2014 Integrated Report Section 303(d) List

Dear Mr. Butler:

The U. S. Environmental Protection Agency conducted a complete review of Ohio's 2014 Section 303(d) list and supporting documentation and information. Based on this review, EPA determined that Ohio's 2014 list of water quality limited segments still requiring Total Maximum Daily Load calculations meets the requirements of Section 303(d) of the Clean Water Act and EPA's implementing regulations. Therefore, EPA hereby approves Ohio's 2014 Section 303(d) list, along with the State's priority rankings for these waters and pollutants, with one exception as stated below.

EPA approves and supports Ohio's new listing of the shoreline of the Western Basin of Lake Erie for the Public Drinking Water Supply (PDWS) designated use impairment due to excess microcystin. EPA is deferring, however, its final decision on whether waters beyond the shoreline of the Western Basin of Lake Erie should be on Ohio's Section 303(d) list for the impairment of the PDWS designated use due to microcystin. EPA's deferral is due to proposed changes to Ohio's Lake Erie assessment units that would expand coverage to all drinking water intakes in the Western Basin of Lake Erie for the next listing cycle. The statutory and regulatory requirements, and EPA's review of Ohio's compliance with each requirement are described in the enclosed decision document.

We appreciate the timely submittal of the list. If you have any questions please contact Mr. Peter Swenson, Chief, Watersheds and Wetlands Branch, at 312-886-0236.

Sincerely,

Tinka G. Hyde
Director, Water Division

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Enclosure

cc: Karl Gebhardt, OEPA
Melinda Harris, OEPA

DECISION DOCUMENT FOR THE PARTIAL APPROVAL OF OHIO'S SUBMISSION OF THE STATE'S INTEGRATED REPORT WITH RESPECT TO SECTION 303(d) OF THE CLEAN WATER ACT (CATEGORY 5 WATERS)

The U.S. Environmental Protection Agency has conducted a complete review of Ohio's 2014 Section 303(d) list and supporting documentation and information. Based upon this review, EPA has determined that Ohio's list of assessment units (AUs) still requiring total maximum daily loads (TMDLs) partially meets the requirements of Section 303(d) of the Clean Water Act (CWA or "the Act"), and EPA's implementing regulations, and hereby partially approves Ohio's list. Ohio's list of AUs still requiring TMDLs appears in Category 5 of the Ohio 2014 Integrated Water Quality Monitoring and Assessment Report (2014 Integrated Report or 2014 IR), and EPA's partial approval extends only to the AUs in Category 5 of the 2014 Integrated Report. The statutory and regulatory requirements, and EPA's review of Ohio's compliance with each requirement, are described in detail below.

EPA approves the new listing of the shoreline of Lake Erie for Public Drinking Water Supply (PDWS) designated use impairment due to excess microcystin. EPA, however, is deferring its final decision on whether the waters beyond the shoreline AU of the Western Lake Erie Basin (WLEB) should be on Ohio's Section 303(d) list for impairment of the PDWS designated use due to microcystin. Sampling results from water intakes for Toledo and Oregon, which are located beyond the shoreline AU of the WLEB, exceed Ohio's microcystin threshold. Ohio's Section 303(d) list includes the shoreline of the WLEB for the PDWS designated use, but does not include the waters beyond the shoreline AU where the Toledo and Oregon intakes are located. EPA's deferral is limited to the assessment status of microcystin impacts to the PDWS use in the waters beyond the shoreline AU of the WLEB. EPA's deferral is due to proposed additions to Ohio's Lake Erie AUs that would expand coverage to all drinking water intakes in the WLEB for the next listing cycle.

I. Statutory and Regulatory Background

Identification of Water Quality Limited Segments (WQLSs) for Inclusion on Section 303(d) List

Section 303(d)(1) of the Act directs states to identify those waters within its jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirement applies to waters impaired by point and/or nonpoint sources, pursuant to EPA's long-standing interpretation of Section 303(d).

EPA's implementing regulations require states to submit biennially a list identifying water quality limited segments still requiring a Total Maximum Daily Load (TMDL) (40 C.F.R. § 130.7(b)(1)). EPA regulations provide that states do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the Act; (2) more stringent effluent limitations required by state or local authority; and (3) other pollution control requirements required by state, local, or federal authority (40 C.F.R. §130.7(b)(1)).

Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing Section 303(d) lists, states are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of water: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the state's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive models indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by government agencies, members of the public, or academic institutions; and (4) waters identified by the state as impaired or threatened in a nonpoint assessment submitted to EPA under Section 319 of the Act. (40 C.F.R. §130.7(b)(5)) In addition to these minimum categories, states are required to consider any other data and information that is existing and readily available. EPA's 1991 Guidance for Water Quality-Based Decisions (1991 Guidance), describes categories of water quality-related data and information that may be existing and readily available. While states are required to evaluate all existing and readily available water quality-related data and information, states may, subject to EPA approval, decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring states to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations require states to include, as part of their submissions to EPA, documentation to support decisions to list or not list waters. Such documentation must include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; (3) a rationale for any decision to not use any existing and readily available data and information; and (4) any other reasonable information required by the Region (40 C.F.R. §130.7(b)(6)).

Priority Ranking

EPA regulations also require states to establish a priority ranking for listed waters. In prioritizing and targeting waters, states must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters and shall identify the pollutants causing or expected to cause violations of the applicable water quality standards. The priority ranking must specifically include the identification of waters targeted for TMDL development in the next two years (40 C.F.R. §130.7(b)(4)). States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic and aesthetic importance of particular waters, degree of public interest and support, and state or national policies and priorities (57 Fed. Reg. 33040, 33045 (July 24, 1992) and EPA's 1991 Guidance).

Identification of Waters and Consideration of Existing and Readily Available Water Quality-Related Data and Information

The Ohio 303(d) list of prioritized impaired waters (i.e., Category 5 of the 2014 Integrated Report) is contained in Section L4 of the 2014 Integrated Report, and is in compliance with Section 303(d) of the Act and 40 C.F.R. §130.7. EPA has reviewed Ohio's description of the data and information it considered, its methodology for identifying waters, and considered any other relevant information including information the State submitted to EPA in response to requests for additional information.

Ohio's Lake Erie assessment included drinking water use, and Ohio assembled and evaluated microcystin data from drinking water intakes within the shoreline AUs and further from the shoreline AU of the WLEB, including intakes for Toledo and Oregon. Though EPA concludes that the State of Ohio properly assembled and evaluated all existing and readily available data and information relating to the categories of waters specified in 40 C.F.R. §130.7(b)(5), EPA is deferring its final decision on Ohio's decision not to include the waters beyond the shoreline AU of the WLEB on its 2014 Section 303(d) list for the PDWS designated use. EPA's deferral is due to proposed additions to Ohio's Lake Erie AUs that would expand coverage to all drinking water intakes in the WLEB for the next listing cycle. EPA is only deferring action on assessment determinations related to microcystin impacts to the PDWS use for the open waters of the WLEB. As detailed later in this document, EPA is working with Ohio EPA to ensure that any waters impaired for the PDWS use within the three new proposed AUs for the WLEB (i.e., shoreline, nearshore, and offshore) are included on the State's future 303(d) lists.

EPA has also determined that the State properly listed waters with nonpoint sources causing or expected to cause impairment, consistent with Section 303(d) of the Act and EPA guidance. Section 303(d) lists are to include all water quality limited segments (WQLSs) still needing TMDLs, regardless of whether the source of the impairment is a point and/or nonpoint source.

EPA's long-standing interpretation is that Section 303(d) applies to waters impacted by point and/or nonpoint sources.[1]

Ohio has provided its rationale for not relying on particular existing and readily available water quality-related data and information that it has evaluated as the basis for listing waters. Specifically, in 2003, Ohio passed a credible data law, in the Ohio Revised Code (ORC) 6111.50 to 6111.56, that establishes requirements for the use of external data. That law requires the Director of Ohio EPA to adopt rules that would, among other things, require that data be collected by a qualified data collector and be compliant with the specifications of "Level 3 credible data," in order to be used for listing waters under Section 303(d). Those rules, effective March 24, 2006, are located at Chapter 3745-4 of the Ohio Administrative Code (OAC). Within Section D5 of the 2014 Integrated Report is the memorandum dated May 23, 2013, sent by Ohio to solicit Level 3 data from external sources and all Level 3 Qualified Data Collectors (QDC). External sources include State and County health departments, universities, U.S. Geological Survey, Northeast Ohio Regional Sewer District (NEORSD), permittees, compliance databases, and atrazine registrants. The data collectors either received intensive training and certification from Ohio EPA to become QDC, or the entities have submitted data in the past. EPA concludes Ohio has provided a reasonable basis for not relying on data that do not meet the aforementioned criteria for assessment purposes.

As part of its ongoing monitoring and assessment program, the State developed a five-year rotating basin plan that divides the State into 25 areas, each comprised of a group of subbasins within major river basins. Ohio EPA estimates that under the current funding levels monitoring takes more than 10 years to complete throughout the State. After the State completes the monitoring in one of the assessment areas, it collects the data and assesses the biological, chemical, and physical condition of the AU.

The Ohio River data collection is through the Ohio River Valley Water Sanitation Commission (ORSANCO). ORSANCO was established in 1948 and operates programs to improve water quality (through wastewater discharge standards, biological assessments, monitoring chemical and physical properties), coordinates emergency response for spills or accidental discharges, and promotes public participation in volunteer programs. Ohio defers to ORSANCO's analysis and listing of impaired Ohio River segments, as discussed in greater detail later in this document.

1 See Pronsolino v. Nastri, 291 F. 3d 1123, 1131 (9th Cir. 2002); see also EPA's 1991 Guidance; and National Clarifying Guidance for 1998 Section 303(d) Lists, August 27, 1997.

II. Analysis of Ohio's Submission

Listing Methodology and Reporting

EPA issued guidance for integrating the development and submission of Section 305(b) water quality reports and Section 303(d) lists of impaired waters (EPA's 2002 Integrated Water Quality Monitoring and Assessment Report Guidance, November 19, 2001) (2001 Guidance). The 2001 Guidance was superseded by EPA's Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act, July 21, 2003 (2003 Guidance). The 2003 Guidance recommends that states develop an integrated report of the quality of their waters by placing all waters into one of five assessment categories. On August 12, 2005, the 2006 Integrated Report Guidance (2006 IRG) became available. A memorandum dated October 12, 2006, from the Office of Wetlands, Oceans, and Watersheds, encouraged states and EPA regional offices to follow the 2006 IRG in preparing and reviewing the 2008 Section 303(d) lists. In addition to the 2006 IRG, EPA has issued supplemental memoranda and guidance including: i) a memorandum dated May 5, 2009; ii) *Information Concerning 2012 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions*, dated March 21, 2011; and iii) *Information Concerning 2014 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions*, dated September 3, 2013. These memoranda and guidance were available for the preparation and review of Ohio's 2014 Integrated Report.

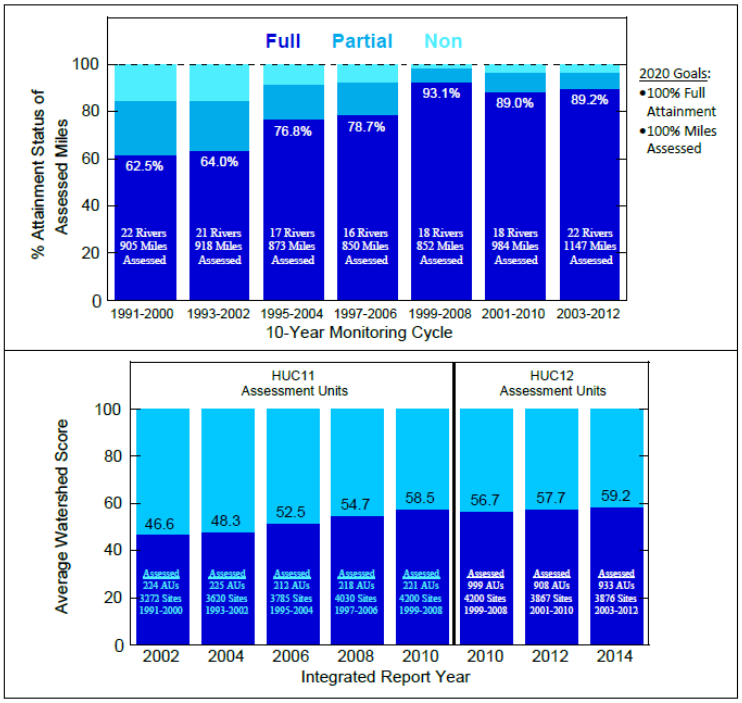
The waterbodies in Category 5, at Section L4 of Ohio's 2014 IR, constitute Ohio's Section 303(d) list. Ohio's 2014 IR discusses several issues that impact Ohio's assessment program. Details are found within Ohio's 2014 IR, and several changes to Ohio's assessment program for the 2014 listing cycle are highlighted and discussed below. The most significant overall additions and enhancements to the 2014 IR include the listing of the shoreline AU of the WLEB for the PDWS designated use based on microcystin data. The listing methodology for the PDWS designated use includes the assessment of a new core indicator based on algae and cyanotoxins in the shoreline AUs in Lake Erie. The 2014 IR also includes a section on Lake Erie monitoring and assessment, and an expanded wetlands discussion. Several sections of the 2014 IR are not discussed in this document because there was no significant departure from past monitoring and assessment practices.

Section A of the 2014 IR: An Overview of Water Quality in Ohio. This Section assesses the changes in status of Ohio's waters since the last listing, including progress toward overall goals. One of the goals of Ohio's surface water program is to assess all large rivers (23 rivers in 38 AUs) and have those waters attain applicable water quality goals by 2020. The most recent ten year interval can be readily compared with the 2012 IR (for 18 large rivers). The top figure below represents the attainment status of the large rivers. A total of 89.2% of the assessed miles of large rivers are in full attainment, which is very similar to the last reporting cycle and

represents all data for all rivers from 2003-2012.

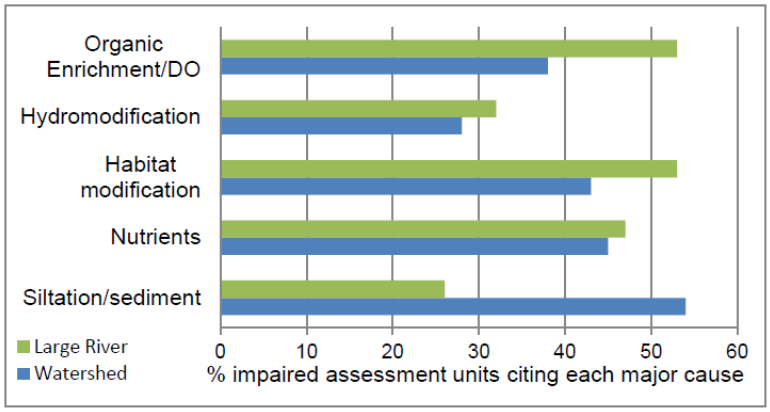
The bottom figure below represents the overall percentages of the watershed AUs (WAUs), found on page A-6, Section A of Ohio's 2014 IR submittal. A total of 59.2% of the 933 assessed AUs are in full attainment, a similar value compared to the last listing cycle (3,876 sites). These assessments are further discussed and compared in the Section G review later in this document.

Summary information on the individual AUs is available at: http://wwwapp.epa.ohio.gov/gis/mapportal/IR2014.html



(Graphs from page A-6, Section A of Ohio's 2014 IR)

The major causes of impairment are organic enrichment/low dissolved oxygen (OE/DO), hydromodification, habitat modification, nutrients, and siltation/sediment. The figure below shows that prevalence of OE/DO impairment in both watershed assessment units and large rivers. The figure below is taken from page A-7, Section A of the 2014 IR. Ohio includes a brief summary of causes and sources as described below.



(Graphs from page A-7, Section A of Ohio's 2014 IR)

- Organic enrichment occurs as living organisms increase, then decompose and deplete oxygen supplies.
- Sediment/siltation includes deposition of fine soil particles, usually after high flow events as erosion and runoff occur, and sediment can transport other pollutants. Low flows deposit sediment and can degrade habitat for aquatic life.
- Nutrient enrichment is primarily due to phosphorus and nitrogen. Though these nutrients are not toxic, they affect the habitat by promoting excess algal growth, and the subsequent decay of algae that depletes oxygen for other organisms. Harmful Algal Blooms (HABs) may:
    - Introduce toxins into the water (e.g. microcystin)
    - Cause taste and odor problems in drinking waters,
    - Pollute beaches and surface waters with scum,
    - Reduce oxygen for fish and other animals,
    - Cause processing problems for public water supply,
    - Generate toxic chemicals.
- Habitat modification refers to manmade changes of a stream's natural channel for the purpose of improving drainage. The channel may be straightened, widened, or deepened, and the stream loses its function as an ecosystem or its ability to naturally process water pollutants.
- Hydromodification is flow alteration that may be due to stream impoundment, increased peak flow from urbanization, or water table regulation through sub-surface drainage. Current or flow changes may result and negatively affect the habitat.
- Pathogen contamination may be from human or animal waste that is conveyed to a stream and is a human health issue from skin contact or ingestion.

Section C of the 2014 IR: Managing Water Quality. This Section describes various surface water quality management programs and actions in Lake Erie, especially in the Western Basin, including active programs described in Section C of the 2014 IR. These efforts include the ongoing Remedial Action Plans (RAPs) in the Areas of Concern (AOCs) in the Maumee, Black, Cuyahoga and Ashtabula Rivers, all of which flow into Lake Erie. There are environmental restoration projects for these tributary rivers being implemented and funded under the Great Lakes Restoration Initiative (GLRI) and the Great Lakes Legacy Act (GLLA), to reduce nutrient loadings, including phosphorus, to the WLEB, remove contaminated sediments, restore habitat, remove dams, and other water-quality related efforts, with the ultimate goal of reducing the Beneficial Use Impairments (BUIs) for the AOCs.

The Lake Erie Lakewide Action and Management Plan (LAMP), formerly the Lakewide Management Plan (LaMP), and the RAPs are both focused on loading reduction and restoration of beneficial uses, using an ecosystem approach. The Great Lakes Water Quality Agreement (GLWQA) between the United States and Canada (amended in 2012), recognizes and describes the actions that will be taken through the LAMP and RAPs. Annex 2 of the GLWQA addresses lakewide management for each of the Great Lakes and includes development of nearshore monitoring to support a more integrated nearshore monitoring framework. Annex 4 addresses nutrient target development and loading reduction plans, and the monitoring will support the ecosystem objectives[1]; Annex 7 provides a framework for native species and habitat protection.

Ohio EPA is actively monitoring Lake Erie, having initiated a *Comprehensive Nearshore Monitoring Program* in 2011 that will continue for several years using GLRI funding. Additional ambient sites and parameters, and greater evaluation of biological communities were based on the framework from the 2010 National Coastal Condition Assessment. The Ohio Lake Erie Phosphorus Task Force Phase 2 received GLRI funding in 2011 and revisited reduction targets and developed management recommendations. Future work will also extend beyond the shoreline to include harbors, bays, and estuaries, and will evaluate biological communities at various trophic levels. Intensive nearshore monitoring was completed in 2013, and includes a three-year monitoring design; the results from the first two years of this monitoring are included in the 2014 Integrated Report.

Ohio's Nonpoint Source (NPS) Program has several GLRI projects on creeks and rivers in watersheds that flow into Lake Erie, including the WLEB, or in headwaters that are part of watersheds that eventually flow to the Lake. The NPS Program is also now overseeing Ohio's Lake Erie Program, tracking implementation of RAPs, nearshore monitoring, and development and implementation of the Lake Erie LAMP.

[1] Under Annex 4, a loading target for phosphorus will be developed in 2015 for Lake Erie, followed by a load reduction plan in 2016 that will allocate phosphorus loadings between the United States and Canada.

The Section also discusses Ohio's Section 401 Certification. The CWA establishes state certification as part of the permitting process. Ohio may review and then certify, conditionally certify, or deny water quality certification for Federal permits or licenses that might result in a discharge to its waters, including wetlands. In the Ohio Administrative Code (OAC), rules for the 401 review process are found in Section 3745-1-05 (Stream Antidegradation), 3745-1-50 through 54 (Wetland Water Quality Standards), and 3745-32-01 through 07 (Water Quality Certification). Ohio's regulations require applicants to provide three alternatives for each proposed project: a preferred, minimal degradation, and non-degradation alternative. These alternatives are considered to minimize impacts on current aquatic resources and evaluate future mitigation. After review, Ohio will determine the best alternative. Ohio encourages permit applicants to coordinate in advance, as well as include 10 specific items within the 401 application before review may begin.

Section D of the 2014 IR: Framework for Reporting and Evaluation – Ohio continues to use the watershed orientation from previous reports and a framework for assessment of Aquatic Life, Recreation, Human Health, and Public Drinking Water Supply (PDWS) designated uses. The AUs for the 2014 IR have not changed significantly from the 2012 IR. The three types of AUs are: Watershed Assessment Units (WAU) for the streams, Large River Assessment Units (LRAU) for the large rivers, and Lake Erie is assessed in three units, the nearshore western basin, the nearshore central basin, and the Lake Erie Islands. Inland lake assessments and listings are within the WAU framework. Reporting and evaluation are completed by the Ohio EPA and outside entities that are certified as Level 3 qualified collectors, described previously in this document. Data may be chemical, physical, or biological. Ohio defers to ORSANCO for the Ohio River listings.

Public involvement is a large component of Ohio's listing framework. Of greatest public interest and concern in this listing cycle are the excessive algal blooms in the WLEB, as expressed in the public comment letters included in Section D. Ohio's responses show that it is taking actions that include monitoring, data assessment, and the listing of the shoreline of the WLEB for impairment of the PDWS use. Ohio has solicited comments on the proposed revision of Lake Erie sampling locations and methods, and the expansion of AUs to include Shoreline, Nearshore, and Offshore AUs for the Western, Sandusky and Central Basins, and an Islands Shoreline AU. EPA has reviewed Ohio EPA's responses to the comments it received, and finds Ohio EPA's responses to be reasonable.[2]

Comments were also submitted regarding wetlands, drinking water, mussels, and ammonia; EPA reviewed Ohio EPA's responses to the comments and finds that the comments are adequately addressed. Many comments regarding adequacy of E. coli data collection in streams and rivers came in to Ohio EPA's Division of Surface Water via webmail and were reasonably addressed.

[2] EPA, however, is deferring its decision regarding Ohio EPA not listing the waters beyond the shoreline AU of the WLEB for impairment of the PDWS use, as discussed in detail in Section H below.

Section E of the 2014 IR: Evaluating Beneficial Use – Human Health (Fish Contamination). Ohio has human health water quality standards to protect the public from adverse impacts of contaminants found in drinking water and consumption of contaminated fish. Evaluation of public drinking water supply use is addressed separately in Section H below. Fish contamination as it affects human health (in Section E of the 2014 IR) is addressed through six contaminants which may bioaccumulate in fish tissue. Ohio measures the fish tissue concentration to determine whether exceedance of concentration values trigger a fish consumption advisory (FCA). Parameters for WQS and FCA are not the same because different assumptions are used in calculating fish consumption rates for fish advisories compared to calculating water quality standards. Standard development for water and its relationship to FCA is fully discussed in the Standards Section – Human Health, later in this document. EPA has concluded that Ohio has identified all the waters not attaining human health uses due to excess contaminants in fish tissue.

Section F of the 2014 IR: Evaluating Beneficial Use - Recreation. The LRAU, WAU, inland lakes, and shoreline AU for the Lake Erie Basin (Western, Central and Lake Erie Islands) were evaluated for recreational use. Table F-1, later in the standards section of this document, shows that water quality standards are based on the amount of human contact with the various waterbody types, i.e., bathing water, primary contact waters and secondary contact waters. *E. coli* standards are expressed as a seasonal geometric mean of 126 cfu/100ml during the recreational season; the single sample maximum is 235 cfu/100ml.

Section F of the 2014 IR states that Lake Erie beach advisories for each beach are based on "… exceedance of the single sample maximum *E. coli* criterion for beaches of 235 cfu/100 ml. This is the threshold that triggers the issuance of beach advisories, and has been used since 2006. Use of the single sample maximum *E. coli* criterion for the purpose of issuing beach advisories complies with the federal BEACH Act rule (*Water Quality Standards for Coastal and Great Lakes Recreation Waters*, 69 FR 67217, November 16, 2004), which became effective on December 16, 2004." (2014 IR, F-9) This value is also used by health departments. Whenever this threshold was exceeded more than 10% of the recreational season from late May through early September, Ohio listed the Lake Erie beach as being in non-attainment (Table F-2 below). Section F also has tables that provide an overview of the various assessments for determining recreational use impairment for Lake Erie beaches.

Table F-2. Determining assessment status of Lake Erie shoreline AUs.

Lake Erie AU Assessment Status	Attainment Status of Individual Beaches
Full	Frequency of advisory postings less than 10% of recreation season for all of the beaches in the AU for all years assessed
Non	Frequency of advisory postings more than 10% of recreation season for one or more of the beaches in the AU for one or more of the years assessed

Table F-10 below shows the 63 Lake Erie beaches divided into the three geographical areas. The recreational season closings and the percentage of days in exceedance of *E. coli* from 2008-2012 are shown to be 15.9% of recreation days closings for the Western Basin, 21.8% for the Central Basin, and 1.1% for the Lake Erie Islands. Though this table provides an overall picture based on a compilation of data, there is great variation in the frequency of advisories and bacteria levels depending on data analysis (whether the seasonal geometric mean or the single sample maximum was exceeded). Further, there are great differences amongst: individual beaches; different seasons at the same beach; and the number of seasons used in the analysis.

Table F-10. Bathing water geometric mean *E. coli* exceedance frequency at 64 Lake Erie public beaches from 2008-2012 (pooled by Lake Erie AU to report use support).

	Western Basin	Central Basin	Lake Erie Islands
Number of beaches	15	47	2
Total recreation days	7,368	24,819	903
Total days in exceedance	1,171	3,731	10
Percentage of days in exceedance	15.9%	21.8%	1.1%
Average # of days *E. coli* criteria exceeded per beach per season[1]	15.6	17.6	1.0
Attainment status	Does not support	Does not support	Full support

[1]Calculated by dividing the total days in exceedance in a basin by the total number of beach seasons in the basin. The total number of beach seasons in a basin is equal to aggregated sum of the total number of beaches for which monitoring was conducted during each season for the 2008-2012 reporting period.

Table F-12 below shows the trend for the 2014 listing cycle compared to 2012 for rivers and streams in WAUs. For the 680 AUs analyzed for the 2014 report, 19% fully supported recreational use while 81% did not.

Table F-12. Overall differences in the assessment of recreation use attainment, 2010-2014.

	2010 Report		2012 Report		2014 Report	
	Number	Percent	Number	Percent	Number	Percent
Total AUs	1,576	100	1,576	100	1,576	100
Assessed	487	31	588	37	680	43
Not Assessed	1,089	69	988	63	896	57
Supporting Recreation Use	65	13[a]	88	15[a]	130	19
Not Supporting Recreation Use	422	87[a]	500	85[a]	550	81

[a] Note: The percentage of AUs reported as supporting the recreation use and not supporting the recreation use are based on the total AUs that were assessed (e.g., 487 in the 2010 analysis).

Beaches at inland lakes are tested less frequently compared to Lake Erie beaches, and are not exceeding the bacteria limits as frequently as Lake Erie. The overall frequency of exceedances at inland lakes was 10.5% in a five year interval. The main exception was the inland lake Grand Lake St. Marys, where over 60% of the samples collected during the 2010 recreation season exceeded the single sample criterion. Ohio recommends more beach sampling at recreational locations where beach managers know that exceedances may cause harm via human contact with the water through bathing or swimming, and can adequately inform the public. EPA concurs with Ohio's listing of recreational use impairments.

Section G of the 2014 IR: Evaluating Beneficial Use – Aquatic Life Use (ALU). Table G-1 on the following page indicates that overall the WAUs achieving ALU changed slightly from 57.7% to 59.2% for the HUC 12 assessments (shown in the Figure in Section A above). Overall, the LRAUs achieving ALU changed from 89.0% to 89.2%, and the three Lake Erie AUs show that 13.2% of the sites are in full attainment for ALU. GLRI funding was used for the Lake Erie nearshore monitoring and assessment in this IR. Lake Erie sampling occurred using 91 fish community collections at 38 sites in 2011-2013. In Table G-1 below, the decrease in full attainment in Lake Erie AUs (from 30.4% in 2012 to 13.2% in 2014) appears significant when compared to the last listing cycle. This change occurred because data were severely restricted for the 2012 cycle due to outdated data from 1999 - 2000 being excluded; only 2001 – 2002 data were used to evaluate in the 2012 cycle. The current cycle impairment values are not significantly different than previous cycles using10 years of data (e.g., 14.7% in full attainment in 2010). EPA concurs with Ohio's listing of aquatic life use impairments.

Table G-1. Summary of aquatic life use assessment for Ohio's watershed[1], large river, and Lake Erie assessment units: 2002-2014 Integrated Report cycles.

IR Cycle	2002 (1991-2000)	2004 (1993-2002)	2006 (1995-2004)	2008 (1997-2006)	2010 (1999-2008)	2012 (2001-2010)	2014 (2003-2012)
HUC11 Watershed AUs (331)							
No. AUs Assessed (% of total)	224 (68%)	225 (68%)	212 (64%)	218 (66%)	221 (67%)	-	
No. Sites Assessed	3272	3620	3785	4030	4200	-	
Average AU Scores							
Full Attainment	46.6	48.3	52.5	54.7	58.5	-	
Partial Attainment	25.2	23.6	22.6	22.4	21.2	-	
Non-Attainment	28.2	28.1	24.9	22.9	20.3	-	
HUC12 Watershed AUs (1538)							
No. AUs Assessed (% of total)[2]	-	-	-	-	999 (65%)	908 (59%)	933 (61%)
No. Sites Assessed	-	-	-	-	4200	3867	3876
Average AU Score[3]	-	-	-	-	56.7	57.7	59.2
% Sites Full Attainment	-	-	-	-	55.1	57.0	57.8
% Sites Partial Attainment	-	-	-	-	20.0	21.6	22.3
% Sites Non-Attainment	-	-	-	-	24.9	21.4	19.9
Large River AUs (23 rivers/38 AUs totaling 1247.54 Miles)							
No. Rivers/AUs Assessed	22	21	17	16	18/30	18/31	22/37
No. Sites Assessed	422	425	374	278	265	312	332
No. Miles Assessed (% of total)	905 (70%)	918 (71%)	873 (68%)	850 (66%)	852 (69%)	984 (80%)	1147 (92%)
% Miles Full Attainment	62.5	64.0	76.8	78.7	93.1	89.0	89.2
% Miles Partial Attainment	23.0	21.4	15.1	13.9	5.5	7.5	6.3
% Miles Non-Attainment	14.5	14.6	8.1	7.4	1.4	3.5	4.5
Lake Erie AUs (3)							
No. AUs Assessed	3	3	3	3	3	3	3
No. Sites Assessed[4]	92	111	93	49	34	23	38
% Sites Full Attainment	12.0	18.0	19.4	10.2	14.7	30.4	13.2
% Sites Partial Attainment	13.0	14.4	16.1	22.4	17.7	30.4	34.2
% Sites Non-Attainment	75.0	67.6	64.5	67.4	67.6	39.2	52.6

[1] WAUs for the IR 2002-2010 cycles were based on HUC11s; WAUs transitioned to HUC12s for cycles beginning with 2010.
[2] 2010 statistics based on direct assessment of HUC12 AUs with data collected between 2005 and 2008 (n=545) and HUC11 extrapolated assessment of HUC12 AUs with data collected between 1998 and 2004 (n=454). 2012 and 2014 assessments based on direct assessment of HUC12 AUs with data collected between 2001 and 2010 (n=908) and 2003 and 2012 (n=933), respectively.
[3] Statistic based on the average of available AU scores with current data, derived as explained in Section G2.2.
[4] Data for sites used in the 2002-2012 IR cycles were generally collected between 1993 and 2002; for the 2014 IR, data were collected 2011-2013.

<u>Section H of the 2014 IR: Evaluating Beneficial Use: Public Drinking Water Supply.</u> Ohio has, for the first time, assessed and listed the shoreline of the WLEB for the PDWS use due to microcystin levels measured above threshold values of 1 µg/L. EPA commends Ohio for expanding its PDWS assessment to include microcystin, and supports Ohio's listing of the shoreline AU of the WLEB for impairment of the PDWS use based on microcystin.

EPA is deferring its final decision on the Section 303(d) listing status of the waters beyond the shoreline AU of the WLEB for impairment of the PDWS use. EPA's deferral is limited to the impairment status of the waters beyond the shoreline AU of the WLEB related to microcystin impacts to the PDWS use. In the next listing cycle, Ohio has proposed to expand the number and boundaries of the AUs for Lake Erie to include shoreline, nearshore, and offshore AUs, and would cover all drinking water intakes in the Western Basin of Lake Erie for the next listing cycle. .

For the 2014 IR, Ohio EPA used chemical water quality data from 2008 to 2012 to assess waters designated for PDWS use. The PDWS use is assessed within 500 yards of active drinking water intakes and on all publicly owned lakes. (See Table D-2, 2014 IR) Between 2010 and 2012, Ohio EPA collected 487 raw and finished drinking water cyanotoxin samples, and public water system providers submitted results for an additional 455 cyanotoxin samples. Ohio EPA reports that of these samples only one finished (i.e., treated) drinking water sample contained microcystin above the 0.3 ug/L reporting limit, but that sample was also below Ohio's drinking water threshold.

As mentioned above, Ohio EPA assessed and listed the shoreline AU of the WLEB, the only AU Ohio EPA listed on its 2014 303(d) list for impairment of the PDWS use based on microcystin. The 2014 listing cycle is the first time Ohio EPA used an algal toxin indicator to assess the Lake Erie shoreline AUs for impairment of the PDWS use. As part of its May 2013 Public Water System Harmful Algal Bloom Response Strategy, Ohio EPA selected the World Health Organization (WHO) provisional threshold of 1 µg/L for microcystin-LR as the algal toxin indicator. Based on data showing that at least two raw samples exceeded the 1 µg/L threshold at five drinking water intakes in the WLEB, Ohio EPA listed the WLEB shoreline as impaired for the PDWS use. Two of the five drinking water intakes from which data were evaluated are located outside of Ohio's current boundary for the shoreline AU. The two intakes outside the shoreline AU are the Toledo and Oregon intakes. Even though Ohio did not include the location of these two intakes on its Section 303(d) list, Ohio EPA based its listing of the shoreline AU as impaired for the PDWS use on microcystin data from the Toledo and Oregon intakes and intakes located within the physical boundary of the shoreline AU as described in Sections H.3 and H.4 of the 2014 IR. In response to questions from EPA about listing the open waters of the WLEB based on the location of the Toledo and Oregon intakes, Ohio stated that as part of its 2016 IR, it expects to "present a final expanded set of AUs and be able to provide a more complete analysis (and possibly 303(d) listings where appropriate) for the PDWS and human health uses (based on fish tissue) for the open waters of Lake Erie." (Letter from OEPA to EPA dated May 28, 2014.) Finally, Ohio EPA stated that in the interim it is working to address problems in Lake Erie through nutrient TMDLs on tributaries, initiatives to reduce nutrient loads, and other Great Lakes Water Quality Agreement efforts, including active participation in developing a phosphorus target for Lake Erie under Annex 4 to the Agreement.

EPA is deferring final action on the listing status of the waters beyond the shoreline AU of the WLEB for the PDWS use in order to continue to consider the outcome of Ohio's efforts to advance the assessment and listing of Lake Erie waters impaired for the PDWS use. Ohio's proposed AUs include a shoreline, nearshore and offshore AUs for the WLEB, and EPA expects Ohio EPA to evaluate and assess all readily available microcystin data for the next listing cycle, and to list any AUs where existing and readily available data shows an impairment of the PDWS use.

Section I of the 2014 IR: Considerations for Future Lists.

Lake Erie PDWS

In Section I, subsection I 5.2.2 (Defining Assessment Units) of its IR, Ohio EPA describes proposed changes to future assessments to include a total of ten AUs for Lake Erie. The proposed Lake Erie AUs are the shoreline, nearshore, and offshore for the Western, Sandusky and Central Basins, and the Islands shoreline, at depths as shown in Figure I 5-1 below. Because the Western and Sandusky Basin are relatively shallow, the boundary between the nearshore and offshore AUs in those basins is the seven meter depth contour, while the cutoff for the Central Basin is the 15 meter depth contour.

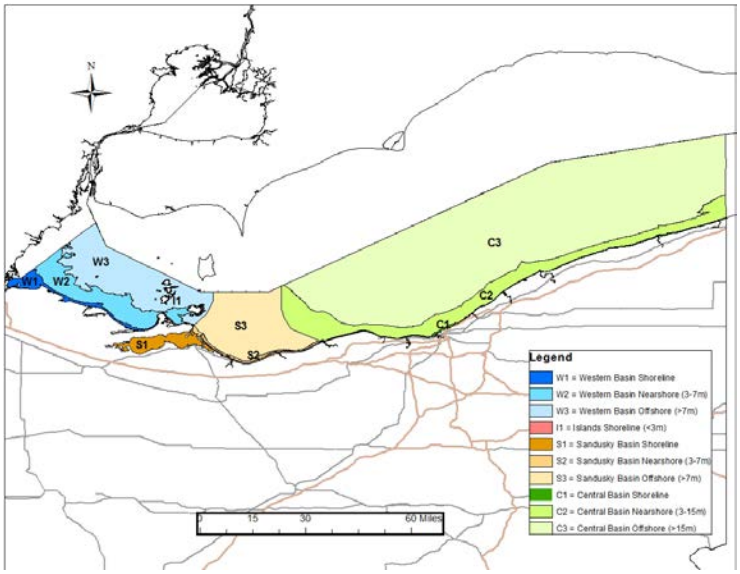


Figure I 5-1. Proposed Ohio Lake Erie Assessment Units

Section I, subsection I.5.2.3, of the 2014 IR discusses sources of data and the Ohio Credible Data Law 2003 (ORC 6111.50 to 6111.56). Ohio EPA states that when making attainment determinations it relies upon data certified as Level 3 data, and that the only currently available Level 3 data are from Ohio EPA ambient monitoring stations and from the Northeast Ohio Regional Sewer District. Ohio EPA expects that Level 3 data will be available from other sources in the future, including EPA data that was collected in 2014, and will be collected annually, by the R/V Lake Guardian. EPA will coordinate with Ohio EPA and expects Ohio EPA to fully assess the ten AUs for Lake Erie and to assemble and evaluate all existing and readily available data, including EPA data, for the 2016 integrated report and listing cycle.

Algae

EPA notes that Ohio has not assessed Lake Erie with respect to the State's narrative criteria at OAC 3745-01-04(E), prohibiting, among other things, nuisance growths of algae created by nutrients entering the water as a result of human activity. Given the prevalence of HABs in the WLEB, in EPA's April 15, 2014 letter to OEPA, EPA encouraged Ohio to develop a methodology for assessing for attainment of the nuisance algal growth narrative water quality criteria. Ohio responded in a letter on May 28, 2014 that it would consider those methods that meet its requirement for credible data, and that biomass may be used once a reliable method is established and accepted. Finally, in its future assessment of the new Lake Erie AUs, EPA requests that Ohio consider the impacts of HABs and nuisance algal growth on aquatic life use, in addition to the impacts on recreational use.

HABs are increasing spatially and temporally in this country and around the world. HABs produce cyanotoxins that affect the skin, liver or nervous system, and can deplete oxygen levels for aquatic life due to biomass from excessive algal blooms. These algae are very adaptable to many water conditions and may experience rapid growth, especially when excess phosphorus is introduced to a water body. The cyanotoxins are recognized to be a hazard to humans, animals, and ecosystems by many agencies, including the EPA, the Center for Disease Control, and the WHO. The WHO has developed risk-based thresholds for microcystin, anatoxin-a, cylindrospermopsin, and saxitoxin for adults for recreation and drinking water uses. Ohio EPA is using the same thresholds for determining impairment to drinking water, but focused only on microcystin in this listing cycle.

In 2011 Ohio released a strategy to protect people from the toxins in public recreational waters. Advisories are posted when there may be a risk for human health and illness. Eight State Park lakes and three Lake Erie beaches had advisory postings in 2012, as did Buckeye Lake beaches, Maumee Bay, and Euclid Beach; Grand Lake St. Marys was posted with advisories for 100% of the 2012 recreational season. There were three reports of human illness in 2011 and 2012, and one dog death in 2011 for Grand Lake St. Marys.

Section I also discusses algal toxin monitoring results in recreational waters, drinking water, and fish tissue. Monitoring for 2012 detected high levels of various algal toxins in Grand Lake St. Marys and Buckeye Lake above 2011 levels. Dillon Lake State Park showed a different bloom with a different toxin in 2012 than in previous years (a bright red bloom caused by Euglena sanguinea). There was an increase in algal toxin monitoring in raw and treated drinking water between 2010 and 2012. Ohio collected 487 raw water samples, and 455 samples were voluntarily submitted by public water systems, which included locations at inland lakes and Lake Erie. The majority of drinking water sources contained cyanotoxins at levels above the reporting limit. Sampling showed that cyanotoxins continued to increase at the City of Celina's intake on Grand Lake St. Marys (in raw, unfinished water). HABs were present at water supplies in every Ohio EPA district and in the western and central Lake Erie basins (2014 IR Section I 4.3.2).

Methodologies for analyzing cyanobacterial algal toxins in fish tissue are being developed to determine acceptable human consumption rates and human health hazards. Ohio EPA is continuing further analysis for sampling of the algal toxin microcystin in fish fillets via a grant from the Ohio Water Development Authority, contracted to The State University of New York. Prior to 2010, it did not appear that microcystin was accumulating in fish tissue, but in 2011 it was detected in sufficient concentrations to result in an advisory for black crappie in 2011, and there was detection in one common carp.

Ohio has increased its Lake Erie water quality sampling since the last listing cycle through the National Coastal Condition Assessment (NCCA) in 2010. This assessment used a statistical survey designed to report on the condition of marine and Great Lakes coasts, and Ohio worked through EPA's Great Lakes National Program Office (GLNPO) to gain experience with sampling methods. Sampling was completed at previously established monitoring stations that had not been visited since the 1990's. Additional sampling was completed with GLRI funding including the assessment of zooplankton and phytoplankton in open waters, and fish, macroinvertebrates, and periphyton in the shoreline, bays, harbors and estuaries.

Section J of the 2014 IR: Addressing Waters not Meeting Water Quality Goals – Section J reviews and summarizes the listing framework, explains the prioritization and delisting process and results, and reports on Ohio's TMDL program and schedule for TMDL development and monitoring. Table J-1 below shows the attainment and listing categories Ohio uses, with the shaded categories indicating those defined by EPA. New categories in this listing cycle are 1d, which is for locations where a TMDL is complete but new data show the AU is meeting water quality standards, and 5d for locations where a TMDL is complete but new data show the AU is not meeting water quality standards due to new contaminants.

Table J-1 below from the 2014 IR includes the attainment, impairment, or unknown status in each designated use category. Also new for this listing cycle is subcategory "t", which includes waters for which a TMDL has been completed at a different Hydrologic Unit scale, that is, approved at the HUC-11 scale then reassessed within the new HUC-12 scale. Table J-4 below from the 2014 IR includes a summary of waters impaired or attaining standards for each beneficial use for each type of AU.

Table J-1. Category definitions for the 2014 Integrated Report and 303(d) list.

Category[1]		Subcategory	
0	No waters currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining water quality standards
		h	Historical data
		t	TMDL complete at 11-digit hydrologic unit scale; AU is attaining water quality standards at 12-digit hydrologic unit scale
		x	Retained from 2008 IR
2	Not applicable in Ohio system		
3	Use attainment unknown	h	Historical data
		i	Insufficient data
		t	TMDL complete at 11-digit hydrologic unit scale; there may be no or not enough data to assess this assessment unit at the 12-digit hydrologic unit scale
		x	Retained from 2008 IR
4	Impaired; TMDL not needed	A	TMDL complete
		B	Other required control measures will result in attainment of use
		C	Not a pollutant
		h	Historical data
		n	Natural causes and sources
		x	Retained from 2008 IR
5	Impaired; TMDL needed	M	Mercury
		d	TMDL complete; new data show the AU is not attaining water quality standards
		h	Historical data
		x	Retained from 2008 IR

[1] Shading indicates categories defined by U.S. EPA; additional categories and subcategories are defined by Ohio EPA.

Table J-4. Summary of results for each beneficial use[1].

	Human Health (Fish Contaminants)	Recreation	Aquatic Life	Public Drinking Water
Watershed assessment units				
Not being used for public water supply	0	0	0	1427
Attains	191	141	341	33
Unknown	926	511	220	67
Impaired, needs TMDL	421	461	479	10
Impaired, TMDL complete	0	425	420	1
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	11	0
Impaired, natural condition	0	0	67	0
Total watershed units evaluated	1538	1538	1538	1538
Large river assessment units				
Not being used for public water supply	0	0	0	29
Attains	1	3	18	1
Unknown	2	10	0	4
Impaired, needs TMDL	35	21	14	4
Impaired, TMDL complete	0	4	3	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	3	0
Total large river units evaluated	38	38	38	38
Lake Erie assessment units				
Attains	0	1	0	2
Unknown	0	0	0	0
Impaired, needs TMDL	3	2	3	1
Total Lake Erie units evaluated	3	3	3	3

[1] Reported using federally-defined categories (see Table J-1), except for two defined by Ohio (category 0 (not being used for public water supply) and subcategory 4n (impaired due to natural condition)). Other Ohio-defined subcategories are included in federal categories.

Section M of the 2014 IR: An Overview of Ground Water Quality in Ohio – Section M reviews programs that monitor, evaluate, and protect ground water. Table M-2 below from the 2014 IR includes data from entities and programs that report and summarize ground water contamination by facility. These include the federal National Priorities List (NPL), CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System), the Department of Defense/Department of Energy (DOD/DOE), Leaking Underground Storage Tanks (LUST), RCRA Corrective Actions, and Underground Injection. Analyses include inorganic and organic pesticides, halogenated solvents, petroleum compounds, nitrate, fluoride, salinity, metals, radionuclides, bacteria, protozoa, viruses, and VOCs. Sources of contaminants (as shown in Map M-4 in the 2014 IR) are varied and include fertilizer applications, manure applications, storage tanks, landfills, septic systems, shallow injection wells, hazardous waste sites, pipelines and sewer lines, salt storage and road salting, small scale shops, and urban runoff (stormwater management).

Table M-2. Ground water contamination summary.
Hydrogeologic Setting: Statewide
Data Reporting Period: As of September, 2013

Source Type	Number of sites	Number of sites that are listed and/or have confirmed releases	Number of sites with confirmed ground water contamination	Contaminants
NPL - U.S. EPA	37	37	34	Mostly VOCs and heavy metals; also, SVOCs, PCBs, PAHs and others
CERCLIS (non-NPL) - U.S. EPA	438	438	20	Varied
DOD/DOE	128[a]	71	68	Varied
LUST	33,858[b]	3,355	233[c]	BTEX
RCRA Corrective Action	130	130	130	VOCs, heavy metals, PCBs, and others
Underground Injection	Class[d]: I - 10 II - 362 III - 46 IV - 0 V - 50,000+	 0 0 0 0 NA	 0 0 0 0 NA	
State Sites[e]	636	636	253[f]	Varied
Nonpoint Sources	NA	NA	NA	

Notes: NA - Numbers not available

[a] Includes DOE, DOD, FUSRAP and FUD sites
[b] Includes only active LUST sites - Source: Ohio's State Fire Marshal, Bureau of Underground Storage Tank Regulations
[c] Sites in Tier 2 or Tier 3 cleanup stages. Source: Ohio's State Fire Marshal, Bureau of Underground Storage Tank Regulations
[d] Class II and Class III injection wells regulated by the Ohio Department of Natural Resources, Division of Oil and Gas Resources. Class IV injection wells are illegal in Ohio. The total number of Class V injection wells in Ohio is unknown.
[e] Facilities in Ohio EPA's Ground Water Impacts database
[f] A site is considered to be contaminating ground water if the "Uppermost Aquifer" or "Lower Aquifer" is noted to be impacted, found in Ohio EPA's Ground Water Impacts database

A Maximum Contamination Limit (MCL) exceedance is used as the criterion for determining impairment of public water systems (PWS) or wells. A location is included on the "watch list" if the measured value is 50% to 100 % of the MCL. Ohio includes impaired and watch list distribution maps for arsenic, sulfate, fluoride, and nitrate. Table M-4A is a comprehensive count of PWSs where 2003-2013 decadal mean values of compliance data occur in the Watch List and Impaired Waters category and is incorporated by reference. Presentation is by chemical, standard type, standard, major aquifer (rock type), total PWS for raw and treated water on the Watch List or Impaired Waters List.

Ohio River Listing

The AUs associated with the main stem of the Ohio River are assessed by the Ohio River Valley Sanitation Commission (ORSANCO), which reports its findings in a Section 305(b) report. ORSANCO is an interstate agency charged with abating pollution in the Ohio River Basin and preventing future degradation of its waters. ORSANCO was established in 1948 through the

signing of the Ohio River Valley Water Sanitation Compact by representatives of the eight member states. Through this Compact, ORSANCO has been given authority to develop the Section 305(b) report for the Ohio River. Ohio participates in the ORSANCO workgroup to promote consistency between 305(b) reporting and 303(d) listing. In the past, Ohio EPA has incorporated ORSANCO's 305(b) assessment into its Integrated Report for those portions of the Ohio River located within the State of Ohio. Section D4 of the 2014 Integrated Report states that that Ohio EPA defers to the impaired segment assessment found in the *2012 Biennial Assessment of Ohio River Water Quality Conditions* (ORSANCO 2012). These waters are incorporated into Ohio's 303(d) list by reference. Section J2 of the 2014 IR states that ORSANCO has lead responsibility for doing the technical work in developing TMDLs for the Ohio River. However, ORSANCO is not required under 303(d) to submit the TMDLs to EPA for approval. Although ORSANCO is working on the development of bacteria TMDLs for the mainstem of the Ohio River in cooperation with its member states and the EPA, its authority is limited to assessments under 305(b).

EPA's monitoring and assessment program is coordinating with ORSANCO to review monitoring strategies for the next funding cycle.

Water Quality Standards

Ohio water quality standards consist of designated uses, and numeric and narrative criteria designed to protect and measure attainment of the uses (OAC 3745-1-07(A)). A water body may have more than one use designation. Each water body in the State is assigned an aquatic life habitat use designation, and may also be assigned a water supply use designation and/or one recreational use designation (OAC 3745-1-07(A)(1)). Ohio has multiple sub-categories or tiers in its aquatic life use designation system (coldwater, seasonal salmonid, exceptional warmwater, warmwater, and modified warmwater habitats, and limited resource waters) (OAC 3745-1-07(B)(1)). Ohio water quality standards include three categories for both the recreational (bathing waters, primary contact and secondary contact recreation) and water supply (public, agricultural, and industrial) use designations. The Ohio Administrative Code contains statewide chemical-specific criteria for the support of use designations (OAC 3745-1-07(A)(2)). The following Table D-1 is taken from Section D2 of the 2014 Integrated Report, and shows the designated uses, beneficial use categories, attributes of each category, and evaluation status for the 2014 IR (the date in the title of Table D-1 is in error, it has been updated for 2014).

Table D-1. Ohio water quality standards in the 2012 Integrated Report.

Beneficial Use Category	Key Attributes (why a water would be designated in the category)	Evaluation status in 2014 Integrated Report
Categories for the protection of aquatic life		
Coldwater Habitat	native cold water or cool water species; put-and-take trout stocking	Assessed on case by case basis
Seasonal Salmonid Habitat	supports lake run steelhead trout fisheries	No direct assessment, streams assessed as EWH or WWH
Exceptional Warmwater Habitat	unique and diverse assemblage of fish and invertebrates	61% of the WAUs and 92% 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 macro-invertebrates; irretrievable condition precludes WWH	
Limited Resource Waters	fish and macroinvertebrates severely limited by physical habitat or other irretrievable condition	Assessed on case by case basis
Categories for the protection of recreational activities		
Bathing Waters	Lake Erie (entire lake); for inland waters, bathing beach with lifeguard or bathhouse facility	Lake Erie public beaches fully evaluated; nine inland lakes evaluated
Primary Contact Recreation	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	43% of the WAUs, 42% of the LRAUs, and 100% of beaches in LEAUs assessed using applicable PCR geometric mean *E. coli* criteria
Secondary Contact Recreation	waters rarely used for recreation because of limited access; typically located in remote areas and of very shallow depth	Assessed as part AU 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, publically owned lakes, waters used as emergency supplies	Sufficient data were available to assess 37% of the 129 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

Human Health: Ohio explains the linkage of water chemistry, fish tissue contaminants, and fish consumption advisories (FCAs) in Section E2 of the 2014 IR for human health standards development. WQS are based on the concentration of chemicals in water, but because the chemicals are known to bioaccumulate in fish, chemical measurements in fish tissue are taken into account for WQS development and for listing. A FCA provides the amount of fish from those waters that may safely be consumed and still protect human health.

There are criteria for six contaminants, mercury, PCBs, chlordane, DDT, mirex, and hexachlorobenzene for assessing attainment of the human health designated use related to fish consumption, with data used from both fish tissue and the water. These contaminants may bioaccumulate in fish and fish tissue data are used to determine whether a FCA is warranted for the protection of human health. Decisions on whether to list these waters are dependent on individual conditions (See Table E-1 below). The FCA may be considered by the state when

making a listing decision, but listing is not based solely on that waterbody having a FCA. For example, if a fish consumption advisory is less protective than the WQS, the waterbody will be listed as impaired; if the advisory is more protective and the WQS is not exceeded, the water may not be listed even if it has a FCA (See Figure E-1 below).

Table E-1. Comparison between fish concentration values and FCA program values.

Basin / Parameter	Fish concentration on which the WQS is based [1]	Range of fish concentrations triggering an "eat no more than one meal per week" advisory	Range of fish concentrations triggering an "eat no more than one meal per month" advisory
Lake Erie / PCB	23 µg/kg	50 - 220 µg/kg	221 - 1,000 µg/kg
Ohio River / PCB	54 µg/kg	50 - 220 µg/kg	221 - 1,000 µg/kg
Lake Erie / mercury	350 µg/kg	110 - 220 µg/kg	221 - 1,000 µg/kg
Ohio River / mercury	1,000 µg/kg	110 - 220 µg/kg	221 - 1,000 µg/kg
Lake Erie / DDT	140 µg/kg	500 - 2,188 µg/kg	2,189 – 9,459 µg/kg
Ohio River / DDT	320 µg/kg	500 - 2,188 µg/kg	2,189 – 9,459 µg/kg
Lake Erie / Chlordane	130 µg/kg	500 - 2,188 µg/kg	2,189 – 9,459 µg/kg
Ohio River / Chlordane	310 µg/kg	500 - 2,188 µg/kg	2,189 – 9,459 µg/kg
Lake Erie / Hexachlorobenzene	29 µg/kg	800 - 3,499 µg/kg	3,500 - 15,099 µg/kg
Ohio River / hexachlorobenzene	67 µg/kg	800 - 3,499 µg/kg	3,500 - 15,099 µg/kg
Lake Erie/ mirex	88 µg/kg	200 - 874 µg/kg	875 - 3,783 µg/kg
Ohio River/ mirex	200 µg/kg	200 - 874 µg/kg	875 - 3,783 µg/kg

Values	Advisory is less protective than the WQS criterion, WQS exceeded, waterbody impaired
Values	Advisory is more protective than WQS criterion, WQS not exceeded, no impairment from FCA
Values	Advisory may be more, or less, protective than WQS criterion

[1] See Section E4 for an explanation of how these concentrations were calculated.

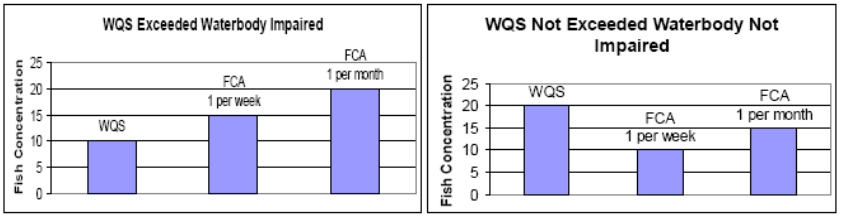


Figure E-1. Illustration of the relationship among the WQS values, the values that trigger issuance of FCAs and the resulting decision regarding waterbody impairment associated with an FCA.

Recreation: Ohio water quality standards state that Ohio may also designate a water body for recreational use (OAC 3745-1-07(A)(1)). Under the Ohio Administrative Code, recreational designations are in effect from May 1st to October 31st (OAC 3745-1-07(B)(4)). Table F-1 below, describes the methodology using the geometric mean. For bathing waters, the geometric mean *E. coli* shall not exceed 126 cfu per 100 ml in the recreational season and shall not exceed

235 cfu per 100 ml in a single sample. *E. coli* for primary and secondary contact recreation waters may not exceed the geometric mean values for these waters. Water quality standards for primary and secondary contact recreation waters do not include a single sample maximum criterion.

Table F-1. Summary of the recreation use assessment methods.

Bathing Waters		
Indicator	Criterion (Table 7-13, OAC 3745-1-07)	Assessment Method Summary
E. coli	Seasonal geometric mean *E. coli* content* based on samples from the recreation season within a calendar year is 126 cfu/100 ml; single sample maximum is 235 cfu/100 ml.	Applied to the three Lake Erie assessment units, exceedance of the geometric mean bathing water criterion or an exceedance of the single sample maximum for more than 10% of the recreation season is considered an impairment of the bathing water use.
Primary Contact and Secondary Contact		
Indicator	Criterion (Table 7-13, OAC 3745-1-07)	Assessment Method Summary
E. coli	Seasonal geometric mean *E. coli* content* based on samples from the recreation season within a calendar year is: Primary Contact Waters Class A: 126 cfu/100 ml Class B: 161 cfu/100 ml Class C: 206 cfu/100 ml Secondary Contact Waters 1030 cfu/100 ml	Applied to streams and inland lakes. Data from a recreation season are assessed on a site-by-site basis and compared to the applicable geometric mean *E. coli* criterion whenever more than one sample result is available for a WAU. Assessment units are considered to be in full attainment if all sites assessed within the AU meet the applicable geometric mean criterion and in non-attainment if one or more sites assessed within the AU exceed the applicable geometric mean criterion.

* *E. coli* concentrations are expressed in colony forming units (cfu) per 100 milliliters (ml)

Aquatic Life Use: Ohio's standards contain numeric biological criteria that describe the expected biological performance of Ohio's wadeable and boatable rivers and streams. These biocriteria are codified in Ohio's water quality standards (OAC 3745-1-07, Table 7-15). Ohio EPA uses the numeric biological criteria to interpret the data generated when a biological assessment of a stream is conducted (OAC 3745-1-07(A)(6)). Through a use attainability analysis, a given stream reach may be assigned an appropriate aquatic life use. Biological sampling is conducted to establish attainment status, with further sub-classification based on ecoregion and size of waterbody. Ohio uses evidence from physical habitat surveys that include the characteristics of the stream that are critical to supporting aquatic life: 1) substrate, 2) in-stream cover, 3) channel morphology, 4) riparian zone and bank erosion, 5) pool/glide and riffle/run quality, and 6) gradient. Observed scores are compared with the target scores and a percentage deviation from the target is calculated.

Although chemical and physical data are collected as part of Ohio EPA's comprehensive watershed evaluations, the performance of the fish and macroinvertebrate communities is used to determine attainment status. Section G discusses the biosurveys that measure performance. For a sampling site to be classified as being in full attainment it must meet the relevant criteria in

three indices: Index of Biotic Integrity (IBI) (fish); the Modified Index of Well-being (MIWb) (fish); and, the Invertebrate Community Index (ICI) (OEPA 1999). The chemical and physical scores are used to confirm the biological impairment or attainment determination.

Public Drinking Water Supply: Ohio's water quality standards state that Ohio may also designate a water body for water supply use (OAC 3745-1-07(A)(1)). Ohio has three water supply uses: public, agricultural, and industrial. A public water supply is a water that with conventional treatment will be suitable for human intake and meet federal regulations for drinking water (OAC 3745-1-07(B)(3)(a)). PDWS are designated waters within 500 yards of an active intake or waters of a publicly owned lake. Ohio EPA collected and reviewed data from public water systems for treatment methods, locations of intakes, number of reservoirs, and water quality. Ohio EPA also collected data in 2009 to better evaluate the algal toxin threat to drinking water by obtaining information on treatment processes, algae control measures, and source water treatment costs. Sampled water quality data (using average annual values for all contaminants except for nitrates) were compared to the numeric chemical water quality criteria for the protection of human health (OAC 3745-1-33 and 34).

Section H in the 2014 Integrated Report summarizes the PDWS assessment. Evaluation methodology includes measurement of both treated waters and source waters, using nitrate, pesticides, cyanotoxins, and *Cryptosporidium* as indicators of water quality, using criteria and conditions as described in Table H-1 below. The waters are determined to be in full support, impaired, not assessed, or put on a "watch list", i.e., targeted for additional monitoring and assessment, applicable to any of the contaminants.

Table H-1. Public drinking water supply attainment determination.

Applies to ambient and treated water quality data from 2008 through December 2012.

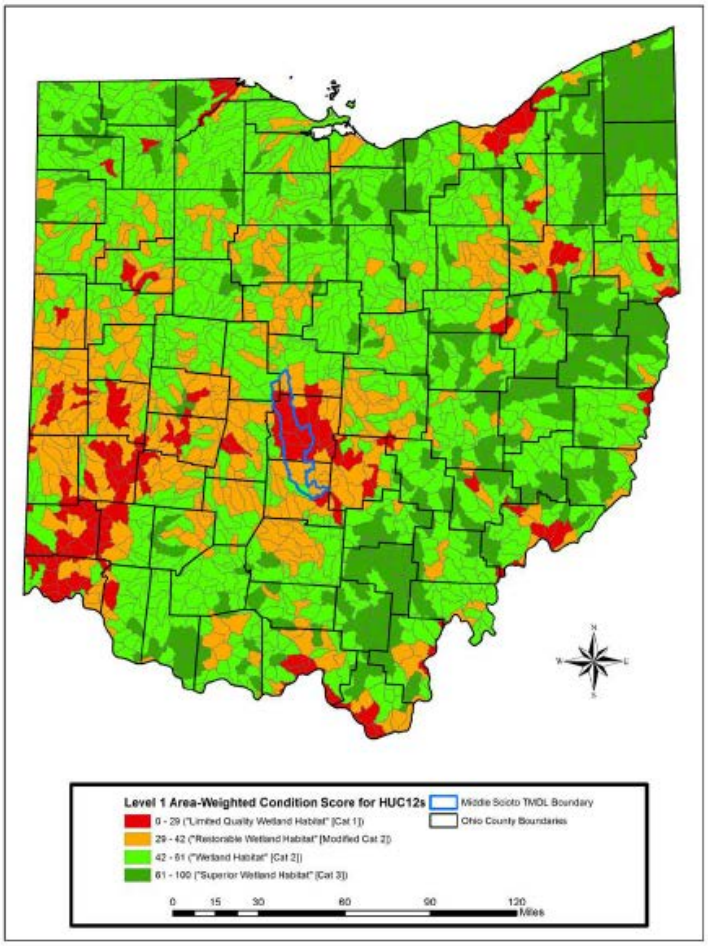
Indicator	Impaired Conditions
Nitrate	☐ Two or more excursions[1] above 10.0 mg/L within the 5 year period
Pesticides	☐ Annual average exceeds WQ criteria (atrazine = 3.0 µg/L)
Other Contaminants	☐ Annual average exceeds WQ criteria
Algae: Cyanotoxins[2]	☐ Two or more excursions[1] above the state drinking water thresholds (microcystins = 1.0 µg/L) within the 5 year period
Cryptosporidium[3]	☐ Annual average exceeds WQ criterion (1.0 oocysts/L)
Indicator	**Full Attainment Conditions**
Nitrate	☐ No more than one excursion[1] above 10.0 mg/L within the 5 year period
Pesticides	☐ Annual average does not exceed the WQ criteria (atrazine = 3.0 µg/L)
Other Contaminants	☐ Annual average does not exceed the WQ criteria
Algae: Cyanotoxins	☐ No more than one excursion[1] above the state drinking water thresholds (microcystins = 1.0 µg/L) within the 5 year period
Cryptosporidium	☐ Annual average does not exceed the WQ criterion
Indicator	**"Watch List" Conditions** *Source waters targeted for additional monitoring and assessment*
Nitrate	☐ Maximum instantaneous value > 8 mg/L (80% of WQ criterion)
Pesticides	☐ Running quarterly average ≥ WQ criteria ☐ Maximum instantaneous value ≥ 4x WQ criteria
Other Contaminants	☐ Maximum instantaneous value ≥ WQ criteria
Algae: Cyanotoxins	☐ Maximum instantaneous value ≥ 50% of the state drinking water thresholds
Cryptosporidium	☐ Annual average ≥ 0.075 oocysts/L

[1] Excursions must be at least 30 days apart in order to capture separate or extended source water quality events.
[2] Impaired conditions based on source water detections at inland public water systems and detections at public water system intakes for Lake Erie source waters. Cyanotoxins include: microcystins, saxitoxin, anatoxin-a, and cylindrospermopsin.
[3] Impaired conditions for *Cryptosporidium* are based on water quality criteria that Ohio EPA intends to develop.

The water quality criteria are:
1) Nitrate 10 mg/L, directly corresponding to the Safe Drinking Water Act Maximum Contaminant Level (MCL);
2) Atrazine 3.0 µg/l;
3) *Cryptosporidium* water quality criteria are being developed, but if the annual average exceeds 1.0 oocysts/L the water is considered impaired. This value will likely be adopted as a water quality criterion before the next listing cycle; and
4) Algae: Cyanotoxins – two or more excursions above 1.0 µg/L of microcystin within the 5 year period.

As discussed above, this is the first listing cycle that includes assessments based on microcystin, which is the focus of Ohio's assessment out of four possible cyanotoxins; this is also the first listing cycle that showed exceedences of microcystin in drinking water intakes, leading to impairment listing of the WLEB shoreline for the PDWS use.

Figure 10. All HUC 12 watersheds in Ohio symbolized by area-weighted Level 1 wetland condition score for all NWI wetlands occurring within each watershed.



<u>Inland lakes and reservoirs:</u> All lakes in Ohio are currently designated as Exceptional Warmwater Habitat (EWH) for ALU; the designation is in the process of changing to Lake Habitat (LH). The revised designation will retain the current criteria and include nutrient water quality criteria. No biocriteria currently apply to lakes, only to rivers and streams. Numeric criteria that will protect aquatic life will apply to the lakes in future assessments. Assessment of Lake Habitat ALU will rely solely on water quality sampling (not biological monitoring). Future lake assessments will likely include Harmful Algal Blooms (HAB) and cyanotoxins. Ammonia, Chlorophyll a, dissolved oxygen, nitrogen, pH, phosphorus, Secchi disk and temperature are being proposed as parameters for LH criteria and are listed in Table I 3-1 below. Results of sampling at fourteen lakes are provided in Table I 3-2 of the 2014 IR. Results show eight lakes

with chlorophyll-a exceedences and five on the watch list. Twelve Lakes are included on the watch list for phosphorus, nitrates, and/or Secchi depth, and seven had exceedences of DO, pH and/or NH3. One lake had a copper exceedance.

Table I3-1. Proposed[1] lake habitat use criteria.

Note: All criteria are outside mixing zone averages unless specified differently.

Parameter			Statewide	Ecoregional Criteria[4]				
Lake type	Form[2]	Units[3]	criteria	ECBP	EOLP	HELP	IP	WAP
Ammonia	T	mg/l	Table 43-4	--	--	--	--	--
Chlorophyll a[5]								
Dugout lakes	T	µg/l	6.0	--	--	--	--	--
Impoundments	T	µg/l	--	14.0	14.0	14.0	14.0	6.2
Natural lakes	T	µg/l	14.0	--	--	--	--	--
Upground reservoirs	T	µg/l	6.0	--	--	--	--	--
Dissolved oxygen[6] All lake types	T	mg/l	5.0 OMZM 6.0 OMZA	--	--	--	--	--
Nitrogen[5]								
Dugout lakes	T	µg/l	450	--	--	--	--	--
Impoundments	T	µg/l	--	930	740	930	688	350
Natural lakes	T	µg/l	638	--	--	--	--	--
Upground reservoirs	T	µg/l	1,225	--	--	--	--	--
pH								
All lake types	--	s.u.	A	--	--	--	--	--
Phosphorus[5]								
Dugout lakes	T	µg/l	18	--	--	--	--	--
Impoundments	T	µg/l	--	34	34	34	34	14
Natural lakes	T	µg/l	34	--	--	--	--	--
Upground reservoirs	T	µg/l	18	--	--	--	--	--
Secchi disk transparency[7]								
Dugout lakes	--	m	2.60	--	--	--	--	--
Impoundments	--	m	--	1.19	1.19	1.19	1.19	2.16
Natural lakes	--	m	1.19	--	--	--	--	--
Upground reservoirs	--	m	2.60	--	--	--	--	--
Temperature								
All lake types	--	--	B	--	--	--	--	--

1 Proposed in draft water quality standards rules, August 2008.
2 T = total.
3 m = meters; mg/l = milligrams per liter (parts per million); µg/l = micrograms per liter (parts per billion); s.u. = standard units.
4 ECBP stands for Eastern Corn Belt Plains; EOLP stands for Erie/Ontario Lake Plain; HELP stands for Huron/Erie Lake Plains; IP stands for Interior Plateau; and WAP stands for Western Allegheny Plateau.
5 These criteria apply as lake medians from May through October in the epilimnion of stratified lakes and throughout the water column in unstratified lakes.
6 For dissolved oxygen, OMZM means outside mixing zone minimum and OMZA means outside mixing zone minimum twenty-four-hour average. The dissolved oxygen criteria apply in the epilimnion of stratified lakes and throughout the water column in unstratified lakes.
7 These criteria apply as minimum values from May through October.
A pH is to be 6.5-9.0, with no change within that range attributable to human-induced conditions.
B At no time shall the water temperature exceed the average or maximum temperature that would occur if there were no temperature change attributable to human activities.

Removal of Waters from the 303(d) List

Section J of the 2014 IR describes the delisting of waters from the 2012 303(d) list. Ohio must demonstrate good cause for removal of waters from the list. Table J-5 below shows both delisting and listing of new waters. There are 282 delistings and 177 new listings, primarily in watershed assessment units. EPA concurs with the reasons for the changes because Ohio has demonstrated good cause, as discussed in the following sections.

Table J-5. Number of assessment units removed from or added to the 303(d) list.

	Number of Assessment Units			
	Watershed	Large River	Lake Erie	*Total*
Delistings (Remove from 303(d) list)				
Human Health (fish tissue)	90	0	0	***90***
Recreation	106	0	0	***106***
Aquatic Life	82	4	0	***86***
Public Drinking Water Supply	0	0	0	***0***
Total	***278***	***4***	***0***	***282***
New Listings (Add to 303(d) list)				
Human Health (fish tissue)	3	0	0	***3***
Recreation	136	6	0	***142***
Aquatic Life	24	0	0	***24***
Public Drinking Water Supply	6	1	1	***8***
Total	***169***	***7***	***1***	***177***

-Waters Meeting Water Quality Standards

The State's decision not to include certain AUs on its 2014 Section 303(d) list, also shown in Section J and Table J-6 below, is consistent with EPA regulations at 40 CFR 130.7(b)(6)(iv). Under 40 CFR 130.7(b)(6)(iv), States must demonstrate good cause for delisting. These causes were individually identified on the State's 2014 Section 303(d) list, due to: 1) methodology change using different AU size; 2) change in algal assessment methodology; 3) a flaw in original listing; 4) new data (meeting water quality standards); or 5) TMDL approval, as shown in Tables J-7, J-8, J-9 and J-10, respectively. The tables are incorporated into this document by reference.

Table J-6. Summary of reasons for changes to the 2014 303(d) list.

	Number of Assessment Units	
Reason for Change	**Removals**	**Additions**
Change in methodology (2010 AU size)	4	0
Change in methodology (algae)	0	7
Flaw in original listing	84	0
New data	62	170
TMDL approved	132	--
Total	***282***	***177***

-Waters Removed Based on TMDL Approval

The State's decision not to include certain AUs on its 2014 Section 303(d) list is consistent with EPA regulations at 40 CFR 130.7(b)(6)(iv). Under 40 CFR 130.7(b)(6)(iv), States are not required to list waters if all impairments are addressed in an approved TMDL. These waters were identified on the State's 2014 Section 303(d) list in Section J, Table J-10, with a change from Category 5 (the list) to Category 4A (approved TMDL). Table J-10 provides the designated uses, AU numbers and names of the waters. Table J-6 above summarizes the changes in listing status and total changes based on reasons for the changes.

Waters Subject to Other Pollution Control Requirements Stringent Enough to Implement any Water Quality Standards, 40 CFR 130.7(b)(1)(iii)

Under 40 CFR 130.7(b)(1), States are required to list WQLSs still requiring TMDLs where effluent limitations required by the CWA, more stringent effluent limitations required by State, local, or federal authority, or other pollution control requirements required by state, local, or federal authority, are not stringent enough to implement any applicable water quality standards. The regulation does not specify the time frame in which these various requirements must implement applicable water quality standards to support a State's decision not to list particular waters.

Monitoring should be scheduled for these waters to verify that the water quality standard is attained as expected in a reasonable time frame. Where standards will not be attained through implementation of the requirements listed in 40 CFR 130.7(b)(1) in a reasonable time, it is appropriate for the water to be listed on the Section 303(d) list to ensure that implementation of the required controls and progress towards compliance with applicable standards is tracked. If it is determined that the water is, in fact, meeting applicable standards when the next Section 303(d) list is developed, it would be appropriate for the State to remove the water from the list at that time.

Section L6 of the 2014 IR describes several projects addressing impairments and achieving water quality standards without a TMDL, classified as category 4B: "impaired, other required control measures will result in attainment of use." Ohio EPA indicates in Section L 6.2 of the IR that there are 4B demonstration locations within TMDLs, showing improvement toward full attainment status, that will be monitored for potential removal from the list in the next listing cycle (see table below).

Name of Watershed	Location of 4B in Report	Date of TMDL Approval	Locations of Updates in 2014 IR
Salt Creek Watershed (Scioto River basin)	Appendix D	8/12/2009	6.1.1.2
White Oak Creek Watershed	Appendix H	2/25/2010	6.2.1.2
Twin Creek Watershed	Appendix B	3/4/2010	6.2.2.2
Walnut Creek Watershed	Appendix B	5/4/2010	6.2.3.2
Great Miami River (upper) Watershed	Appendix E	3/26/2012	6.3.1.1

The State has demonstrated that there are other pollution control requirements required by State, local or federal authority that will result in attainment of water quality standards within a reasonable time.

Public Participation and Comments on Listing Decisions

The State's public participation process for the 2014 Integrated Report has been extensive. On May 23, 2013, Ohio EPA sent a mailing to all Level 3 qualified data collectors, including major NPDES discharge permit holders. A call for Level 3 Credible Data as posted on a web page is shown in Section D 5.1.1. Details of Level 3 Qualified Data Collector requirements are described in OAC Rule 3745-4-03(A)(4). Qualifications include a minimum of two years of practical experience in the following assessment categories: stream habitat assessment, fish community biology, benthic macroinvertebrate biology and/or chemical water quality assessment. (See Section D3, Table D-3, hereby incorporated by reference, listing the entities, data dates and data descriptions in the 2014 IR). On January 29, 2014, the State posted an announcement of its draft of the 2014 Integrated Report available on its public website (Section D 5.3 of the 2014 IR), including instructions for printed copy requests. The formal comment period for the 2014 Integrated Report was from January 29, 2014 to close of business on February 28, 2014. The Notice is included in the 2014 Integrated Report in Section D 5.3. Public comments received and Ohio EPA's responses are included in Section D 6; responses to EPA comments were addressed and incorporated into the 2014 Integrated Report.

During the public comment period the State received many comments that expressed concerns about several topics, including the four uses evaluated for listing, wetlands, harmful algal blooms, and proposed listing for Lake Erie. The State responded to all of the public comments and addressed its decision to not list certain waters on its 2014 Section 303(d) list. EPA has reviewed Ohio EPA's responses, and finds them to reasonably respond to the comments. As discussed in Sections D and H above, however, EPA is deferring its decisions regarding Ohio EPA's decision to not list the waters beyond the shoreline AU of the WLEB for PDWS impairment.

Priority Ranking and Targeting

EPA also reviewed the State's priority ranking of listed waters for TMDL development, and concludes that the State properly took into account the severity of pollution and the uses to be made of such waters, as well as other relevant factors such as status of recreation use, and the status of aquatic life. For near shore watershed areas of Lake Erie the waterbodies were assigned the same priority as the surrounding contiguous watersheds. Ohio defers to the EPA for prioritization of open waters of Lake Erie and to ORSANCO for the Ohio River. These waterbodies have low priority ranking for Ohio EPA initiated action, although many actions funded by EPA have been initiated and are underway in the Ohio River and in contributing watersheds to Lake Erie.

For the remaining waters in Category 5 of the Integrated Report, the State used a point system to determine the priority ranking of the AUs. Ohio EPA's point system is based on a maximum of 20 possible points (1 being the lowest priority and 20 being the highest priority, including categories of assigned points and extra points). The points were distributed as follows, and can be found in Section J 2 and Table J-3 of the 2014 Integrated Report, as shown below.

Table J-3. Priority points for impaired assessment units.

Points	Condition	# Assessment Units	
		WAUs	LRAUs
Human Health Use impairment (fish tissue contaminants) (maximum of 3 points)			
2	Listed as impaired for Fish Contaminants (Human Health Use)	421	35
+ 1	Additional point in assessment units that have greater than 500 parts per billion PCBs or mercury	3	5
Recreation Use impairment (maximum of 6 points)			
1	Listed as impaired, with assessment unit score[1] between 0 and 25	45	0
2	Listed as impaired, with assessment unit score[1] between 75.1 and 100	75	13
3	Listed as impaired, with assessment unit score[1] between 25.1 and 50	156	2
4	Listed as impaired, with assessment unit score[1] between 50.1 and 75	185	6
+ 2	Additional points if assessment unit contains Class A waters	53	21
Aquatic Life Use impairment (maximum of 4 points)			
1	Listed as impaired, with assessment unit score[1] between 0 and 25	218	1
2	Listed as impaired, with assessment unit score[1] between 75.1 and 100	17	10
3	Listed as impaired, with assessment unit score[1] between 25.1 and 50	128	1
4	Listed as impaired, with assessment unit score[1] between 50.1 and 75	126	2
Public Drinking Water Use impairment (maximum of 7 points)			
5	Listed as impaired for Public Drinking Water Use for one indicator	10	3
+ 2	Additional points in assessment units impaired for second indicator	2	3
1	Not listed as impaired, but on watch list; one point for each indicator	32	4

[1] The assessment unit score is reported on the summary sheets in Section L and on the assessment unit summaries on the web.

In addition, EPA reviewed the State's identification of WQLSs targeted for TMDL development in the next two years, and concludes that the targeted waters are appropriate for TMDL development in this time frame. Ohio considered various factors in developing both the long term and short term schedule.

Ohio builds on programmatic strengths in monitoring, modeling, permitting, and nonpoint source incentives to develop an integrated approach to TMDLs that aligns program goals and resources efficiently. Ohio also has an active stakeholder process for developing TMDLs. Ohio works on collecting data through the five-year rotating basin plans. Ohio's ALU data are valid for up to ten years for evaluating assessment units, so each AU must be monitored at least once every ten years. Each AU is assigned to one of the subsequent monitoring cycles using the following criteria: Ohio EPA's five-year Basin Monitoring Strategy; time since most recent assessment; distribution of work effort among Ohio EPA district offices; priority ranking; and TMDL schedule. Ohio has generated its long-term TMDL schedule based on local interest, funding and partnership potential. Some flexibility remains in long-term scheduling because it is difficult to predict these variables.

Table J-16 in Section J of the 2014 Integrated Report is the short-term schedule for TMDL Development and is hereby incorporated by reference.

Long term schedule

EPA has received Ohio's long-term schedule for TMDL development for all waters on the State's Category 5 list of impaired waters. EPA has requested that states provide such schedules.[4] Ohio has provided information for the long term schedule in Section J 5.2 of the 2014 IR. Ohio states that the five-year basin approach provides the foundation for most monitoring, and aquatic life use monitoring data up to ten years old are valid. However, due to decreased resources, cycling through the entire basin rotation would take about 15 to 20 years at current resource levels. Therefore, the AUs are assigned to one of the three cycles based on the five-year basin approach, the time since last assessment, workload distribution among OEPA district offices, priority ranking, and the TMDL schedule. EPA is not taking any action to approve or disapprove this schedule pursuant to Section 303(d).

[4] See Memorandum from Robert Perciasepe, Assistant Administrator for Water, to Regional Administrators and Regional Water Division Directors, "New Policies for Developing and Implementing TMDLs", August 8, 1997.

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Ohio Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

January 11, 2016

Ms. Susan Hedman
Regional Administrator
U.S. EPA Region V
77 West Jackson Blvd.
Chicago, Illinois 60604

Dear Ms. Hedman:

The Ohio Supreme Court determined in March 2015 that Total Maximum Daily Loads (TMDLs), under Ohio law, constitute rulemaking and need to follow Ohio's administrative rule adoption process (Revised Code Chapter 119). The Court's decision means that all of Ohio EPA's past and future TMDLs will need to proceed through the 119 process in order to be lawfully established under Ohio law. This obviously has significant legal and programmatic implications, including an expectation that it will lengthen an already lengthy process to develop a TMDL and implement a remedy to improve water quality for an impaired waterbody.

We recently began a dialogue with members of the regulated community and are exploring alternatives that may result in a more streamlined approach. While we are only in the early stages of these discussions, the possible changes would likely require legislative action that will also be time consuming.

While we work on developing a state based consensus resolution, there are a number of TMDLs that have a direct impact on Lake Erie and our overall strategy for reducing harmful algae blooms and other nutrient impacts on rivers and streams. We believe completing these TMDL's is critical to making measurable reductions of nutrient loads in the Lake Erie basin. Therefore, I am asking for your assistance and formally requesting that USEPA federally establish the Sandusky Lower Tribs and Bay Tribs TMDL (originally approved August 11, 2014 and developed by a USEPA contractor) and the Maumee mainstem TMDL (currently under development by a USEPA contractor).

50 West Town Street • Suite 700 • P.O. Box 1049 • Columbus, OH 43216-1049
epa.ohio.gov • (614) 644-3020 • (614) 644-3184 (fax)

Please contact Cathy Alexander (614-644-2021) of the Division of Surface Water if you need additional information. I look forward to hearing of your decision at your earliest convenience.

Sincerely,

Craig W. Butler
Director

ec: Tinka Hyde, Director, Water Division, U.S. EPA Region 5
Tiffani Kavalec, Chief, Division of Surface Water

From:	tahree lane
To:	EPA dsw.webmail
Subject:	303(d) comments
Date:	Monday, August 29, 2016 1:26:05 PM

Ohio EPA
Division of Surface Water, P.O. Box
1049, Columbus, Ohio 43216-1049
dsw.webmail@epa.ohio.gov

Attn: 303(d) Comments

Thank you for this opportunity to submit comments on Ohio's Clean Water Act Lake Erie water quality. Lake Erie is the drinking water source for 11 million people and is vital to Ohio's economy.
The following is requested:

1. That the western basin of Lake Erie be declared impaired and that the Toledo and Oregon intakes be part of the basin wide impairment rather that the proposed near shore area which is not a major contributor to the intake algae.

2. That Ohio EPA include wet weather in assessing nutrient runoff.

3. That Ohio EPA include algae/toxin's in its **recreational contact** impairments.

4. That Ohio EPA provides an **annual report** to the public that identifies **sources and amounts** of Lake Erie algae/nutrients and **how many pounds/units** are reduced from the funding/changes to reduce nutrient runoff.

5. **That Ohio EPA request the Ohio Department of Agriculture to create rules that LIMIT MANURE APPLICATION OF PHOSPHORUS TO THE CROP NEED/AGRONOMIC NEED/AMOUNT.**

6. That the report be MORE USER FRIENDLY. It is extremely difficult for the layperson to navigate and understand.

Sincerely,

Tahree Lane,
Toledo, Ohio

Lake Erie Improvement Association
3072 N.E. Catawba Rd.
Port Clinton, Ohio 43452
800-551-1592 lakeerieimprovement.org

Mission: LEIA is a Lake Erie watershed-wide economic sustainability initiative dedicated to healthy waters & fish by promoting cooperation & wise resource management for the benefit of the Lake Erie basin.

Lake Erie Waterkeeper Inc.
3900 N. Summit Bldg 2
Toledo, Ohio 43611

Lake Erie has the Great Lakes Warmest, Shallowest, Fishiest Waters
lakeeriewaterkeeper.org 800-551-1592

Ohio EPA
Division of Surface Water, P.O. Box
1049, Columbus, Ohio 43216-1049
dsw.webmail@epa.ohio.gov

August 29, 2016

Attn: 303(d) Comments

The Lake Erie Improvement Association and Lake Erie Waterkeeper are pleased to submit the attached comments in response to the July 29, 2016 Notice of Availability and Request for Comments Federal Water Pollution Control Act Section 303(d) TMDL Priority List for 2016. The comments are on Ohio 2016 Integrated Water Quality Monitoring and Assessment Report Final Draft (Integrated Report). In 2014 Lake Erie Waterkeeper asked that Lake Erie be included in the report. Ohio EPA granted this request and in this 2016 there are sections that directly address Lake Erie. Thank you.

Lake Erie is an enormous resource for Ohio producing over 100,000 jobs and injecting over $14.2 billion to the economy. Lake Erie provides drinking water for 11 million people and is the 12th largest lake in the world. Lake Erie provides over half of the consumable fish in the Great Lakes. Lake Erie is the most vulnerable of the Great Lakes because of its shallow waters but is also the most resilient because its waters turn over every 2.6 years – and as little as 30-50 days in the western basin. Lake Erie has been a national and international example of the recovery of a lake once believed to be 'Dead". As we know in the last decade Lake Erie is once again experiencing large algal blooms with toxins causing economic losses and a ban on drinking water in Toledo for nearly one half million people.

Many say that it will take decades for the algae to be reduced but we know that if nutrient runoff that comes from heavy rains is reduced, Lake Erie will respond right away. We know this because of the drought in 2012 and similar conditions in 2016. If Ohio and other Lake Erie governments take action to reduce the nutrient sources, Lake Erie will be healthy. We know that taking phosphorus out of laundry detergent decades ago resulted in substantial decreases of phosphorus discharges from wastewater plants. Likewise we know that to help reduce Lake Erie nutrient sources – mainly dissolved phosphorus – requiring that manure be applied at agronomic/crop need rates would reduce dissolved phosphorus runoff to Lake Erie.

We also know that we can learn from others who have excess nutrients causing Harmful Algal Blooms – Chesapeake and the Fox River Green Bay. Both say that basin wide TMDL's are helping to achieve the needed reductions and that states are eligible for additional funding as a result of the basin wide TMDL's and Implementation Plans. A key component of the development of the TMDL is for stakeholder agreement on sources and amounts. Agreement on what is coming from where and how much is critical to knowing if progress is being made. Therefore we continue to ask that Ohio declare its portion of western Lake Erie Impaired followed by USEPA declaring the US waters of western Lake Erie Impaired. After this designation, we ask for an expedited basin wide TMDL with a request from Ontario to provide similar information.

Of great concern is Ohio's picking part of the western Lake Erie watershed – like the Maumee – instead of the western Lake Erie basin. This parceled out approach yields confusion and debate over the sources and amounts of nutrients causing the problem in Lake Erie.

Several other key recommendations contained in the attached comments are: Wet weather events must be included in the TMDL's; The Oregon and Toledo intakes should not be combined with the near shore(near shore is not where the 2014 algae came from for the Toledo crisis - the winds blew the algae from the open lake into the intake area and then the winds died to leave the algae cooking up toxins - therefore, the Toledo and Oregon intakes need to be in an Impaired western Lake Erie basin designation.

We have appreciated the opportunity to work with Ohio EPA on: Getting phosphorus reductions at the Detroit wastewater plant; Getting a fertilizer/manure ban on frozen ground; Getting funding for the Healthy Lake Erie Fund; Reducing the amount of dredge materials open lake disposed and other policies etc. that benefit Lake Erie.

We look forward to working for agreeing on sources and amounts and a reportable accountable plan that shows progress, or a lack thereof, in reducing the nutrients that cause the algae problems in Lake Erie. It is vitally important to achieve these reductions quickly to sustain and grow a Healthy Lake Erie economy.

Sincerely,

Sandy Bihn
Vice President Lake Erie Improvement
Lake Erie Waterkeeper.

The following are the comments from the Lake Erie Improvement Association and Lake Erie Waterkeeper Inc. Comments are highlighted in gray and are made to various sections of the report relating to Lake Erie..

Section C Comments

Compliance and Enforcement Program

This section should include enforcement for NPDES permits issued through the Ohio Department of Agriculture for CAFO permit. It is understood that enforcement for these permits is by complaint. Also the permit information does not contain where the manure is being applied offsite of the NPDES permit.

Concentrated Animal Feeding Operations

Ohio EPA should be permitting and administering CAFO permits instead of the Ohio Department of Agriculture. ODA is committed to helping the agricultural industry. Water protection is the responsibility of Ohio EPA. Ohio allows manure application for phosphorus in soil to be 150ppm compared to the crop/ agronomic need of 40 ppm. Ohio NPDES permits should require that all manure that is applied has a phosphorus in soil limit of less than 40 ppm

Lake Erie Program

The Lake Erie Program should be informed by a basin wide Western Lake Erie Impaired designation followed by a TMDL and Implementations Plan.

Areas of Concern (Remedial Action Plans)

All of the Areas of Concern below should include assessment of upstream nutrients.

Ashtabula River AOC

Black River AOC

Cuyahoga River AOC

Maumee River AOC

Statewide AOC Projects

Lake Erie Lake-wide Action and Management Plan (LAMP, formerly LaMP)

Funding for the LAMPS has decreased and the LAMPS public involvement funding has ended. There is no coordination between the public and government in the development of these LAMPS and the tasks that they are to perform. The LAMPS are one more stand alone program that would benefit from a basin wide western Lake Erie basin Clean Water Act Impaired/TNMDL/Plan Process.

For both the AOCs and the LAMP, it is imperative to keep the local communities and stakeholders engaged. In Ohio's AOCs, the local communities and partners have played a significant role in obtaining the resources for implementation, providing matching funds and serving as the local sponsor. A reliable, long-term source of funding is essential to continue to

fund the administration and outreach costs associated with local coordinator leadership efforts. Public outreach efforts are also needed to better connect the decisions and projects in the watersheds to the environmental condition of the lake.
Agree that outreach for LAMPS is needed. This will take funding.

National Pollutant Discharge Elimination System (NPDES) Permits
The lawsuit on the wastewater TMDL's needs to be addressed quickly. Ohio EPA has long enough delayed action to resolve the problem.
Ohio EPA should administer CAFO permits.

Nonpoint Source (NPS) Program
Ohio's waters having a growing algae/toxin problem with the most prevalent source being nonpoint. Ohio's lakes, rivers and streams get greener and greener after wet weather – high flow events. Ohio nonpoint plans need to include assessment of Ohio's manure management practices as they relate to runoff and algae as well as commercial fertilizer and other agricultural practices. Ohio's assessment of dissolved phosphorus and Best Management Practices is needed. The information provided in this section is weak and needs reporting and accountability components
Progress toward achievement of Ohio's Section 319(h) grants program goals will continue to be measured as part of Ohio's NPS Monitoring and Assessment Initiative. For the past eight years, Ohio EPA staff has conducted all monitoring (physical, chemical and biological), beginning with baseline monitoring through project completion to determine the effectiveness of Section 319 (h) and SWIF funded NPS projects. This initiative not only provides cost savings and improved data quality, but also relieves grant recipients of a task which was often difficult for them to do properly. This initiative also serves as a very important environmental measure: are NPS-funded projects improving water quality or not?

Ohio's 319 program needs to be assessed and updated.

Section 208 Plans and State Water Quality Management Plan
There needs to be more public understanding and involvement in this program.

Total Maximum Daily Load (TMDL) Program

Ohio's TMDL's need to be consistent in their methodology and assessment . Ohio TMDL's where there is a nutrient impairment need to include wet weather as part of the TMDL.

As stated throughout these comments, Ohio needs to declare Ohio's waters in the western basin of Lake Erie Impaired and proceed expeditiously with a basin wide TMDL that is coordinated with Michigan and Indiana and to the extent possible Ontario.

Ohio needs to coordinate TMDL's in the Ohio River Watershed and the Lake Erie watershed. Ohio also needs have large river basin wide TMDL's and inland Lake watershed wide TMDL's.

Water Quality Standards (WQS) Program

Ohio's waters have increased algae problems in Lake Erie, the Ohio River, Ohio's inland lakes and rivers. Nutrient water quality standards are needed to help address these problems.
Ohio has failed to establish nutrient water quality standards as required in the Clean Water Act. USEPA has been negligent in enforcing this Clean Water Act requirement. Ohio EPA had a Phosphorus Task Force Committee to establish Water Quality Standard

recommendations several years ago. After many meetings over the years nothing has happened. Ohio uses the excuse that since there are no nutrient standards then the TMDL nutrient component is debatable at best.

Public participation is mandated and encouraged in all administrative rule makings including the WQS. Any interested individuals are afforded an opportunity to participate in the process of developing water quality standards. Ohio EPA reviews and, as appropriate, revises water quality standards at least once

every three years. When water quality standards revisions are proposed, the public is notified of these revisions. A public hearing is held to gather input and comments.

The public involvement process in Water Quality standards and TMDL's needs major improvements. When there are public meetings and notices, the information is very technical. Any suggestions by participants are met with regulatory speak. There is no understanding of what the standards/TMDL's mean and what will be done. It is just a pretty boring technical hard to understand information presentation.

C3. Program Summary – Drinking and Ground Waters

Drinking Water Program

Ohio has a good drinking water HAB notification program.

Source Water Protection Program

Several programs are in place or are being implemented to help protect Ohio's water resources. The Source Water Assessment and Protection Program protects aquifers and surface water bodies that are used by public water systems. A public water supply beneficial use assessment methodology has been developed in conjunction with DSW and it is being implemented.

Ohio's Source Water Protection Program for surface waters with toxic algae needs updating. While source water protection for spills etc. in surface waters is understood and with limited resources administered, source water protection for surface water with toxic algae has yet to be develop an assessment and source reduction program.

C5. Cooperation among State Agencies and Departments

Ohio Water Resources Council

The link below for this Council indicates that the State of Ohio proposes to eliminate this Council through proposed legislation in the May 2016 minutes. It seems contradictory to say that this council is to do coordination etc. when Ohio no longer supports the Council's work. The minutes indicate that the communication between the departments on water is needed and helpful. It would seem that expanding the council to include the public would be beneficial.

http://epa.ohio.gov/dsw/owrc.aspx.

Ohio Lake Erie Commission

The role of the Lake Erie Commission has changed in the last year. Those changes should be stated here along with the Lake Erie work that Ohio expects of the commission. The public's role and input should clearly be stated.

C6. Funding Sources for Pollution Controls

Clean Ohio Fund

Ohio has changed allocations and program eligibility for this program. This section needs to be updated.

Section 319 Grants Program

Historically, Ohio's 319 programs have not been administered to reduce nonpoint sources but rather as a watershed planning and management plan. Ohio's approved watershed plans are minimal as are endorsed watershed plans. Ohio's watershed planning needs to be revised to include wet weather events in TMDL's and most importantly a consistent Impaired/TMDL /Implementation process that connects watershed within Ohio's two overall watersheds – Lake Erie and the Ohio River.

Federal Farm Bill Funding in Ohio

There is growing concern that BMP's that get federal and state funding fail to accomplish nutrient reduction goals. The key considerations are dissolved phosphorus runoff and field tiles which often allow bypass of the runoff through the tile rather than 'through the BMP'.

Conservation Reserve Enhancement Program

Many farms have taken acreage out of CREP and now grow corn and beans in low lying and sloped areas which have reduced yields. This section should include the history of Ohio acres in CREP and the changes that have occurred.

Environmental Quality Incentives Program

There is growing concern that BMP's that get federal and state funding fail to accomplish nutrient reduction goals. The key considerations are dissolved phosphorus runoff and field tiles which often allow bypass of the runoff through the tile rather than 'through the BMP'.

In addition, manure management that receives EQIP Funding should be required to apply manure at the agronomic/crop need rate for phosphorus – not the nearly four times or more now being allowed.

Conservation Stewardship Program

The 4R NCRS Conservation program should include a requirement for manure to be applied at the agronomic/crop need rate. The program should also take into account dissolved phosphorus runoff through field tiles that bypass conservation practices at the surface.

C7. Harmful Algal Blooms Responses and Assessments

The harmful effects of these blooms are well documented in scientific literature and recognized by U.S.

Response to HABs

As incidents of HABs have increased, Ohio's response continues to evolve. The State has annually revised the State of Ohio's Harmful Algal Bloom Response Strategy for Recreational Waters (http://epa.ohio.gov/portals/35/hab/HABResponseStrategy.pdf) and the Public Water System Harmful Algal Bloom Response Strategy. Ohio EPA, ODH and ODNR have continued a close partnership to develop and implement the unified state response strategy. The ohioalgaeinfo.com web site provides background information about HABs; tips for staying safe when visiting public lakes; links to sampling information; and current advisories and contact information for reporting suspected HABs. It also includes historic and

current cyanotoxin data for public water supplies and a link to the ODH BeachGuard site, which has information about recreation advisories for both bacteria and algae (http://publicapps.odh.ohio.gov/BeachGuardPublic/Default.aspx).
These are excellent programs that keep the public informed and are reasonably easy to use.

HAB Recreational Advisories

This is an excellent program.

At the present time, Ohio EPA does not list lakes as impaired for recreational use when recreational advisories are posted at public beaches. Addressing water quality impairments in the lake's watershed should eventually reduce nutrient enrichment in lakes and thereby reduce cyanobacteria blooms.
Recreational contact is one of the four impairment categories. Ohio has established contact standards for recreational contact. Ohio monitors the beaches and places warning signs up when the algae/toxins exceed Ohio's standards. Saying that 'addressing water quality impairments in the Lake's watershed should reduce nutrients, is counter to the Clean Water Act fishable swimmable waters criteria. Ohio has recreational contact standards, monitors and closes beaches when the standards are exceeded. Given Ohio's impaired criteria, Ohio must declare the Lake Erie waters impaired for recreational contact and also the inland lakes. Ohio representatives have stated that once federal standards are established, then the waters will be declared impaired for recreational contact and will require a TMDL. Ohio is not preempted by USEPA from establishing recreational contact standards and the extensive use and beach postings using Ohio's standards, obligates Ohio to declare these waters impaired

Annual Prioritization of Impaired Waters for TMDL Development:
Ohio will continue to use the Priority Point System in Section J2 of the IR. Points are given for presence

Assessment Goal

Protection Goal

Ohio's TMDL's are inconsistent and difficult to understand and many are over ten years old and lack updates. The reality is that many of Ohio's waters are experiencing growing problems with harmful toxic algal blooms. Grand Lake St. Marys has had no recreational contact beach warnings for the past eight years. If Ohio's program for reducing toxic algae sources, then the beaches at Grand Lake St. Marys would be opened. Ohio's failure to reduce sources to allow the beaches at Grand Lake St. Mary's to be safe to swim in. Ohio's protection goals and antidegredation policies are not working.

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Section D

1. 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 2016 methodology is unchanged from what was used in the 2014 IR. Additionally, as in the 2012 and 2014 IRs, a methodology for assessing the aquatic life condition of inland lakes is previewed for possible inclusion in the 2018 or 2020 report provided necessary rule revisions to the Ohio Water Quality Standards are promulgated.

2. Recreation: A methodology for using bacteria data to assess recreation suitability was developed for the 2002 report and refined in 2004, remaining essentially the same for 2006 and 2008. In 2010, the recreation use analysis changed significantly to a new indicator, a new water quality standard, and a data grouping procedure similar to that used for aquatic life. The methodology has not changed for the 2016 report.

   This section needs to include a new core indicator based on algae and associated cyanotoxins, and assessment units listed as impaired for algae

3. 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 2016 report.

   A. As Bowling Green data show the intake water microcystin level at its water-plant reservoir reservoir is frequently at recreational cautionary levels. No advisory has been issued to swimmers, boaters, kayakers, or fisherman using the Maumee River, the origin of the intake water, as a recreational resource.

   B. Fish tissue should be measured for BMAA toxin in brain and neurologic tissue as BMAA has recently been found in the brain tissue in fish from Grand Lake St. Mary's. (Personal communication from Geo. Bullerjahn)

C.BMAA unlike microcystin, saxitoxin, et alia, are not being measured. Current literature suggests that this is likely a serious omission.

4. 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 2016 report.

D1. Assessment Units

1. Lake Erie Assessment Units (LEAUs) – for three shoreline areas of the lake: western (Ohio/Michigan state line to eastern terminus of Sandusky Bay opening to Lake Erie); central (eastern terminus of Sandusky Bay opening to Lake Erie to Ohio/Pennsylvania state line); and Lake Erie islands (including South Bass Island, Middle Bass Island, North Bass Island, Kelleys Island, West Sister Island and other small islands) extending 100 meters from the shore. These assessment units also include Public Drinking Water Supply intake zones (500-yard radius around intakes) associated with the nearest shoreline unit even if they are greater than 100 meters from the shore.

Ohio's designation of Lake Erie Assessment Units lacks rationale for the Ohio Lake Erie open waters. Ohio declares the western Lake Erie nearshore impaired. But this definition does not include the Toledo and Oregon intakes. In January 2016 USEPA and Ohio agreed to an impaired designation for the Toledo and Oregon intakes of 500' around the intake. Obviously, this impairment designation does not include the open water toxic algae sources that caused Toledo's drinking water crisis.
The second 'Assessment Unit' is the near shore in the central basin.
The third 'Assessment Unit' is the Lake Erie islands which are in the open waters of Lake Erie.
All three of these assessment units have algal toxin sources from the Maumee River and other tributaries. To get to the Lake Erie islands the algal toxins from the Maumee River and other tributaries have to pass mostly through Ohio open Lake Erie waters. Doing a TMDL for the three assessment units without including Ohio's open Lake Erie waters and tributary sources will not lead to delisting of the impairment because research and other information clearly show that the Maumee and other tributaries are the major source of the harmful toxic algae. Therefore Ohio has to declare the entire Ohio portion of the western basin of Lake Erie watershed as impaired to reduce algal toxins. This would be the Ohio Western Lake Erie Watershed Assessment Unit

D3. Evaluation of Lake Erie

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. In Ohio's 2014 Integrated Water Quality Report *Section I: Considerations for Future Lists*, Ohio

proposed a new approach for Lake Erie with new

assessment units and methodology for the nearshore and open waters. Ohio EPA initially planned to adopt the new assessment units and methodology during a later IR cycle, anticipating that the GLWQA Annex 4 efforts would produce nutrient concentration targets or criteria for the open waters.

The GLWQA Annex 4 efforts so far have resulted in load reductions targets rather than in-lake nutrient concentration targets or criteria. For this and other reasons outlined in Section J3, Ohio does not intend to pursue development of the open water assessment units and methods at this time. Ohio EPA believes that assessment and listing of the open waters under the CWA should be led by U.S. EPA in consultation with the states and Ohio is willing to assist its federal partners with the development of appropriate monitoring and assessment protocols for the open waters. Federal leadership on the open water assessments will also facilitate coordination with the ongoing GLWQA Annex 4 efforts (U.S. EPA and Environmental Canada are federal co-leads). In the meantime, Ohio is actively working towards the nutrient reduction goals for Lake Erie recommended by the Annex 4 subcommittee (see Section J3 for more information).

To be clear, the three current Lake Erie shoreline units have been assessed and impairment determinations made for the aquatic life use, recreational use, and human health (fish contaminants) use for over 10 years. **In the 2014 IR, the Western Basin Shoreline Unit was listed as impaired for all four beneficial uses, including the public drinking water supply beneficial use for the first time.** Public drinking water supply intakes that are located in Lake Erie beyond 100 meters from the shore were associated with the nearest shoreline assessment units. An algae indicator assessment methodology was implemented for the first time in the 2014 report, based on the state drinking water thresholds for microcystins, saxitoxin, anatoxin-a and cylindrospermopsin. This association and application for assessment and listing has been clarified in response letters to U.S. EPA in 2015 and in this report. These impairment determinations were made based on numeric targets or standards and objective assessment methods for each use designation (see Sections E through H for more information about how impairment is determined for each use) in line with how assessments for large river and watershed units have been conducted for the last several report cycles.

For this 2016 IR, Ohio has continued to use the three Lake Erie shoreline assessment units with all four beneficial uses assessed and all Lake Erie public drinking water intakes associated with one of the three units, as shown in Figure D-3. The shoreline unit extends 100 meters from the actual shore. The 303(d) Prioritized List of Impaired Waters (Table L4) includes all three assessment units and shows that all three are now listed as impaired for aquatic life use, public drinking water use and human health (fish tissue). The western basin shoreline and central basin shoreline are also listed as impaired for recreation use by bacteria (*e. coli*).
The recreation use impairment should be expanded to include recreational contact with algal toxins. Ohio has established recreational algal toxin standards, monitored, and posted no swimming and no contact beach advisories so it is clear there is an impairment that needs to be listed. Ohio parceling out certain Lake Erie waters – nearshore – islands and leaving out the remaining Ohio Lake Erie open waters fails to include and assess Ohio western Lake Erie impairment sources. Lake Erie's waters have boundaries for Ohio's jurisdiction. The fact that Lake Erie lies in two countries and multiple states has not stopped Ohio from boating, fishing, vessel discharge, in

lake leases etc. The process is that Ohio administers its laws and then works with the other jurisdictions. Ohio is selectively picking parts of its Lake Erie waters for jurisdiction under the Clean Water Act and leaving the remaining to USEPA. Ohio is authorized by USEPA for administration of its Ohio's waters. If Ohio does not want jurisdiction over its Lake Erie open waters, then the Clean Water Act sections that Ohio has agreed to be administer need to be changed and assigned to USEPA which could be very problematic for Ohio's programs for Ohio Lake Erie open waters. Ohio's declaration of the western basin of Lake Erie – with Michigan doing the same in accordance with the US Clean Water Act is needed. Ontario is following its federal and provincial laws which can be coordinated on both sides of the border.
The Chesapeake Bay and other large watersheds have had voluntary agreements like the Great Lakes Water Quality Agreement Annex 4. All have failed. Instead, they now use the Clean Water Act Impaired TMDL Implementation process because this has an established framework for nutrient sources and amounts and reductions. The Annex 4 Domestic Action Plans for the states must include the Clean Water Act Impaired etc. process rather than dismissing it for an unproven arbitrary voluntary plan that by all accounts from other watersheds will fail to get the 40% nutrient reductions needed.

Comments on Section J – Ohio Integrated Report

As with other sections of this report, the presentation in information is overly complex and not reader friendly. Table J1 is clearly for the professional. HUC units, WQS, TMDL, 2008 IR acronyms are used confusing the reader. The section is highly technical and difficult to understand.

Section J2. Prioritizing the Impaired Waters: the 303(d) List

Ohio River and Open Waters of Lake Erie

Other organizations have lead responsibility for two special waters affected by multiple jurisdictions:

U.S. EPA for the open waters of Lake Erie and ORSANCO for the mainstem of the Ohio River. Ohio EPA is actively participating in TMDL and similar actions conducted by these organizations, so priority for *Ohio EPA-initiated action* is assigned a low priority for these waters. TMDLs in watersheds that drain to the Ohio River and Lake Erie will reduce the pollutant load delivered to each water.

This underscores the need for the open waters of the western basin of Lake Erie to be declared impaired. Ohio states that USEPA is responsible for Lake Erie's open waters and that USEPA is leading a TMDL – Ohio EPA needs to reference where USEPA is addressing Lake Erie's open waters with a TMDL etc. Ohio EPA has no coordinated TMDL for Lake Erie's tributaries – large rivers, bays, and streams.

Inland Waters and Lake Erie Shoreline

The chart in this section lists recreation as a source of impairment but Ohio EPA has elected not to include recreational use as a basis for impairment for Lake Erie. Ohio EPA states that the impairment designation is postponed until there are national

standards for recreational contact for algal blooms. But Ohio has established recreational standards for recreational contact for algal toxin blooms. Ohio places signs on beaches no to swim or come in contact with the water when monitoring exceeds Ohio's standards. Ohio needs to list the western basin of Lake Erie waters impaired for recreational contact, there is ample supporting data and additional information in Lake Erie's western basin open waters and on the shores

The AUs are assigned priority points using the guidelines in Table J-3. The points assigned to the public drinking water and human health uses are straightforward. 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 particular 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.

The above explanation is based on the building of assumptions. If the land sources of the impairment are widespread then dismiss the impairment as taking too long to fix. This rationale is unsupportable.

Near Term Priorities for Ohio EPA

Ohio is facing increasing problems with cyanobacteria blooms in inland lakes, including development of HABs in source waters. Many public water systems are experiencing increased treatment costs to manage the extra carbon load and cyanotoxins at their intake. The smaller conventional systems will have difficulty treating water for these problems and the expense will be very high to upgrade those plants.

Lake Erie's water intake HAB sources need to be a high priority for Ohio EPA. The public water supplies for Lake Erie and its tributaries are experiencing hundreds of millions of dollars in cost to monitor and address toxins in the water intake. The algae toxin sources for all Lake Erie water intakes need to be a high priority for this report to be addressed. Safe Drinking Water Act source water planning and source reductions need to be a high priority for Ohio EPA.

J3. 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; 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.

Ohio includes the Clean Water Act 303d list Impaired Waters TMDL process where

it chooses to incorporate the TMDL's in the Great Lakes Water Quality Agreement Annex 4 process. Ohio needs to declare the western Lake Erie basin waters impaired followed by a basin wide TMDL. The western Lake Erie basin wide Clean Water Act Impaired TMDL process should be incorporated into the Annex 4 and serve as the framework for stakeholder agreement on basin wide sources and amounts. The arbitrary average weighted mean load for the Maumee River based on 2008 should be replaced with established Clean Water Act Impaired/TMDL processes. On one hand Ohio is saying that USEPA has an open water assessment for Lake Erie but on the other hand Ohio and USEPA have established priority western Lake Erie watersheds that do not include the open waters and which ignore the Detroit River nutrient contribution in western Lake Erie. The Annex 4 process which lacks a western basin Impaired TMDL, says that somehow the Detroit River nutrient contribution hops over fifty miles of waters in the western Lake Erie basin to only impact the Central basin, an absurd assumption.

Recent assessments by the Ohio Phosphorus Task Force (Phases I and II) and Annex 4's Objectives and Targets Task team indicate nonpoint sources are the primary source. A key challenge for nutrient management is to assess and manage both in-stream (near-field) and downstream (far-field) impacts in the receiving water body (Lake Erie). To improve water quality in Lake Erie, a separate and independent analysis is needed to determine in-lake goals and seasonal/annual load reductions targets for the tributaries. Ohio is directly involved in developing these goals and reduction targets needed for Lake Erie while moving forward on developing implementation strategies and taking action.
The Clean Water Act Impaired Water TMDL process is established to determine in lake and tributary load reductions goals. USEPA and Ohio are required to comply with the Clean Water Act which in part was created because of the algae and other toxins in Lake Erie decades ago.

Recognizing there may be confusion about the multiple initiatives and how they fit together to improve Lake Erie, an outline and explanation of linkages is provided below.
Declaring the western basin of Lake Erie impaired and following the TMDL assessment and reportable accountable implementation plan would form the basis for the GLWQA Annex 4 Domestic Action Plans in the US and make all of the below explanations come together as a unified rather than piecemeal plan.

Great Lakes Water Quality Agreement

Binationally, the U.S. and Canada are working together under the GLWQA to develop nutrient reduction strategies; come to agreement on phosphorus reduction targets for Lake Erie; and create and implement action plans to meet the targets.
For the US, these reduction targets and the methodology of determining them have to comply with the Clean Water Act rather than being independent of the Clean Water Act.

Annex 4 of the 2012 GLWQA specifically addresses nutrients in the Great Lakes and contains short-term requirements specific for Lake Erie. U.S. EPA has indicated to Ohio that it agrees that the Annex 4 process is the best way to protect Lake Erie for the four states and one province that share the shoreline.

Work under Annex 4 includes the following:

- Develop binational phosphorus loading targets for Lake Erie (by February 2016)

    - Released summer 2015 with public consultation and comment period
    - Final targets/objectives will be included in the binational nutrient management strategy for Lake Erie and will include allocation by country and watershed
- Develop Binational Nutrient Management Strategy (by June 2016), and
- Develop Domestic Action Plans to meet the targets (by April 2018).

All of the above should be compliant with the US Clean Water Act.

Annex 2 of the GLWQA provides the framework for long-term binational management of the Lake. A comprehensive LAMP has been developed for Lake Erie and is the binational platform where whole lake management plans are developed, implemented and tracked. Ohio is a key partner in the binational partnership. For example, Annex 2 calls for creation of a new nearshore framework and the binational partnership will be responsible for implementing the framework and reporting on progress. It is also expected that the nutrient targets from Annex 4 will be incorporated in the next version of the lake- wide management plans. Working through the binational partnership is critical for developing a coordinated approach with consistent reporting across the borders.

USEPA is no longer funding the LAMP's and their utility and roll are in transition. Again Ohio should follow the requirements for determining sources and amounts with stakeholder agreement followed by an accountable reportable implementation plan.

Great Lakes Commission: Lake Erie Nutrient Targets (LENT) Working Group

The Great Lakes Commission formed the Lake Erie Nutrient Targets (LENT) Working Group as a result of a 2014 resolution that committed the Lake Erie states and the province of Ontario to develop new and refine existing practices, programs and policies to achieve pollutant reduction targets and identify additional remedies to improve water quality in Lake Erie. This is a state/province initiative that is parallel, but separate from the binational GLWQA and Annex 4 efforts. Ohio is a member of the LENT Working Group. The LENT Working Group released a Joint Action Plan for Lake Erie on September 29, 2015, available at http://glc.org/projects/water-quality/lent/.

As identified in this section, there are too many independent pieces that fail to provide agreed upon sources and amounts western Lake Erie basin wide using the TMDL framework with stakeholder agreement on the amounts to then agree upon reductions and a plan.

Lake Erie Collaborative Agreement

The Lake Erie Collaborative Agreement is another state/province led-initiative; it was signed in June 2015 by Ohio, Michigan and Ontario (http://www.cglslgp.org/media/1590/western-basin-of-lake-erie- collaborative-agreement-6-13-15.pdf). The three parties in the agreement are supportive of the binational Annex 4 effort, but recognize that immediate actions can be implemented at the state and provincial levels. In order to get a head start on the Annex 4 process and hasten efforts to improve water quality in Lake Erie, Ohio released a draft Collaborative Implementation Plan in June 2016. The Annex 4 domestic action plans will build on the Collaborative's short-term goals and the implementation plans will become the long-term plans. One of the goals spelled out in the Collaborative Agreement is to reduce nutrient levels going into Lake Erie by 40 percent. The other is to develop a strategic plan to manage dredge material in order to ensure it complies with the state's recent

commitment to stop open lake disposal of dredge material into Lake Erie by 2020. The GLWQA does not contain timeframes for implementation and restoration goals, but Ohio is working to meet the Collaborative Agreement phosphorus reduction goals of 20 percent by 2020 and 40 percent by 2025.
As identified in this section, there are too many independent pieces that fail to provide agreed upon sources and amounts western Lake Erie basin wide using the TMDL framework with stakeholder agreement on the amounts to then agree upon reductions and a plan

TMDLs for Lake Erie Watershed
TMDLs are conducted by the state or federal governments as required under the CWA for waters that have been formally identified as impaired. TMDLs use monitoring and modeling to identify where load reductions and restoration actions are needed. Ohio EPA plans to utilize this tool to target implementation in Ohio's Lake Erie watersheds as it works to meet the Annex 4 phosphorus targets and allocations.
As identified in this section, there are too many independent pieces that fail to provide agreed upon sources and amounts western Lake Erie basin wide using the TMDL framework with stakeholder agreement on the amounts to then agree upon reductions and a plan. Picking and choosing TMDL's etc. rather than a basin wide TMDL fails to provide a coordinate Lake Erie reduction plan.

TMDLs are a document that provides guidance on where to focus implementation and recommends BMPs. The TMDL process does not provide additional authority to either Ohio or U.S. EPA to regulate nonpoint sources of pollution; Ohio's regulatory tools are limited to permits and enforcement actions against point sources of pollution.
The Chesapeake Bay federal lower court and appellate court decisions dispute this. This is a legal discussion that should not be in the Ohio Integrated Report.

Ohio has completed TMDLs[8] for 22 of 32 project areas (watersheds) feeding into Lake Erie and work on the remaining 10 watersheds is underway by either Ohio EPA or a contractor for U.S. EPA. All of these TMDLs employ the State's narrative water quality (WQ) criteria for phosphorus with established targets and methods to address "near field" impacts on rivers and streams. Because Ohio lacks a WQS criterion for total phosphorus concentration in Lake Erie, TMDLs were not developed to address the excessive wet weather loads delivered to Lake Erie. Ohio currently assesses the shoreline zone (shoreline out to 100-meters) of Lake Erie and the aquatic life use is designated as impaired by nutrients, among other

[8] While Ohio has completed these TMDLs and they were approved by U.S. EPA, in March 2015 in *Fairfield Cty. Bd. of Commrs. v. Nally,* 143 Ohio St. 3d 93, 2015-Ohio-991, the Ohio Supreme Court determined that "A TMDL established by Ohio EPA pursuant to the Clean Water Act is a rule that is subject to the requirements of R.C. Chapter 119, the Ohio Administrative Procedure Act." See Section C (page C-17) for more details.

Ohio has failed to conduct a TMDL in any of Lake Erie's watersheds that would remove the algae related impairments because none of the TMDL's, according to this section, included Wet Weather Loads delivered to Lake Erie. It is widely acknowledged that up to 80% of the nutrient

sources that create the toxic algae in Lake Erie come from wet weather events. This 'theory' is verified by the years 2012 and 2016 which were near drought years. Ohio EPA must include wet weather in all Lake Erie watershed Existing Lake Erie watershed TMDL's must be updated to include wet weather.

Not considering wet weather has also been a problem for Ohio setting nutrient standards as required by the Clean Water Act. In response to USEPA's request for Ohio to establish nutrient standards, the Ohio Phosphorus Task Force Committee has a Technical Advisory Committee that was supposed to establish nutrient standards. The committee decided to start with establishing a nutrient standard for small streams and the standard that was proposed was only for low flow – there was an objection by the Lake Erie Improvement Association – the small stream nutrient standard has not been set after two years of meetings.

Ohio is holding nutrient point sources to one standard and nonpoint to no standard. This is unacceptable.

There have been questions regarding the Chesapeake Bay approach (federally-led multi-state TMDL) and whether it would be appropriate for Lake Erie's Western Basin. The difference is Lake Erie is bordered by another country and already has a binational governance framework (GLWQA) and implementation tool (Annex 4 Domestic Action Plans) in place. Ohio and the other Lake Erie partners are working with U.S. EPA to understand what worked well under the Chesapeake Bay TMDL and build those tools or actions into the Domestic Action Plans. The Annex 4 process of developing loading targets and Domestic Action Plans are essentially identical to the TMDL process but have the added advantage of being binationally managed according to the GLWQA. Key steps in each process are depicted in Figure J-6.
A basin wide Clean Water Act/TMDL that has been done for the Fox/Green Bay, the Mississippi, Everglades and other large watershed in the US provides impairment sources and amounts and determines the load for, in this case, nutrients.
Ontario is using Canadian and Ontario water laws to form their Domestic Action Plan. The US Lake Erie states should do the same.

Ohio-based Efforts

Recognizing that Ohio's watersheds provide a significant amount of nutrients to Lake Erie and that its communities are bearing the brunt of algal bloom impacts, Ohio launched a series of initiatives at the state-level back in 2010 and has expanded the scope and scale of implementation; developed a statewide strategy; targeted funding; and undertook legislative action to address the problem. Since 2011, the Ohio has invested more than $1 billion in the Lake Erie watershed to improve drinking water and wastewater facilities; monitor water quality; plant cover crops; recycle dredge material; install controlled drainage systems on fields; and fix failing septic systems. In addition, Ohio has received more than $11 million from the Great Lakes Restoration Fund for water quality improvement efforts in the Lake Erie watershed.

The following is a list of several state-led and statewide water quality improvement activities.

1. **Statewide Nutrient Reduction Strategy:** Ohio's environmental, agricultural and natural resource agencies worked together to create a statewide strategy to reduce nutrient loading to streams and lakes, including Lake Erie. The strategy was submitted to U.S. EPA-Region 5 in 2013. Ohio EPA is currently updating the strategy to address gaps identified through U.S. EPA's review. The strategy and more information about the effort are available at http://www.epa.ohio.gov/dsw/wqs/NutrientReduction.aspx.

2. **GLRI Demonstration and Nutrient Reduction Projects:** Nine grants totaling over $12 million were awarded to Ohio. Highlights include: first saturated buffer installed in Ohio; 53 controlled drainage structures installed; 52 whole farm conservation plans developed; 7,500 acres of cover crops planted; and 29 storm water, wetland and stream restoration projects in Cuyahoga County.

3. **Ohio Senate Bill 1:** This bill, effective July 3, 2015, requires major public-owned treatment works (POTWs) to conduct technical and financial capability studies to achieve 1.0 mg/L total phosphorus; establishes regulations for fertilizer or manure application for persons in the western basin[9]; designates the director of Ohio EPA as coordinator of harmful algae management and response and requires the director to implement actions that protect against cyanobacteria in the western basin and public water supplies; prohibits the director of Ohio EPA from issuing permits for sludge management that allow placement of sewage sludge on frozen ground; and prohibits the deposit of dredged material in Lake Erie on or after July 1, 2020, with some exceptions.

[9] "Western basin" is defined in this Senate Bill as consisting of the following 11 watersheds: Ottawa watershed, HUC 04100001; River Raisin watershed, HUC 04100002; St. Joseph watershed, HUC 04100003; St. Mary's watershed, HUC 04100004; Upper Maumee watershed, HUC 04100005; Tiffin watershed, HUC 04100006; Auglaize watershed, HUC 04100007; Blanchard watershed, HUC 04100008; Lower Maumee watershed, HUC 04100009; Cedar-Portage watershed, HUC 04100010; and Sandusky watershed, HUC 04100011.

4. **Ohio Senate Bill 150**: This bill, effective August 21, 2014, requires, among other things, that beginning September 31, 2017, fertilizer applicators must be certified and educated on the handling and application of fertilizer; and authorizes a person who owns or operates agricultural land to develop a voluntary nutrient management plan or request that one be developed for him or her.

5. **Ohio HB 64**: This bill, effective June 30, 2015, requires the development of a biennial report by spring 2016 on mass loading of nutrients delivered to Lake Erie and the Ohio River from Ohio's point and nonpoint sources. A summary of the bill is available at https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-64.

6. **Ohio Clean Lakes Initiative:** The Ohio General Assembly provided more than $3.5 million for projects to reduce nutrient runoff in the Western Lake Erie Basin.

7. **Healthy Lake Erie Initiative**: The Ohio General Assembly provided $10 million to the Healthy Lake Erie Initiative to reduce the open lake placement of dredge material into Lake Erie. These sediments often contain high levels of nutrients or other contaminants so finding alternative use or disposal options is a priority.

8. **Targeted Funding to Ohio Drinking Water and WWTPs**: More than $150 million was made available starting in 2014 to help public water systems keep drinking water safe and to help wastewater treatment plants reduce the amount of phosphorus they discharge into the Lake Erie watershed. As of June 2016, over $61 million had been awarded for this work and most of the remainder has been allocated for specific projects.

9. **Directors' Agricultural Nutrients and Water Quality Working Group:** This is a collaborative working group that consists of participants from Ohio EPA, ODA and ODNR. The group's report contains a number of recommendations to be implemented during the next several years. For example, the report recommends ways for farmers to better manage fertilizers and animal manure and also provides the state with the means to assist farmers in the development of nutrient management plans and to exert more regulatory authority over the farmers who are not following the rules. The report is available at http://www.agri.ohio.gov/topnews/waterquality/docs/FINAL_REPORT_03-09-12.pdf.

10. **Ohio Lake Erie Phosphorus Task Force Phase 2**: The Task Force, which includes participants from Ohio EPA, ODA and ODNR, originally met back in 2009 and was brought back together in 2012 to build on its previous work and make recommendations for improving water quality in the Lake Erie watershed. The taskforce finalized the latest report in 2014 and it is available at http://lakeerie.ohio.gov/Portals/0/Reports/Task_Force_Report_October_2013.pdf.

11. **Ohio Point Source and Urban Runoff Workgroup:** Businesses, municipalities and Ohio EPA came together to initiate the "Point Source and Urban Runoff Workgroup" in 2012 in order to identify actions that can be taken immediately to reduce phosphorus loadings from WWTPs, industrial discharges and urban storm water. The group's full report is available at http://epa.ohio.gov/portals/35/documents/point_source_workgroup_report.pdf.

All of these efforts need to be incorporated into the basin wide TMDL and the implementation plan which would determine if there are nutrient reductions that will lead to removal of the Lake Erie nutrient impairment. Furthermore, Ohio TMDL's do not have Implementation Plans with tracking for reductions of the impairment. Ohio goes through a TMDL process and then there is no plan for most of the TMDL's – certainly no plans for nutrient TMDL's.

Ohio has determined that Lake Erie Recreational Use cannot be declared impaired because USEPA has not developed recreational standards. Yet Ohio has established its own standards as listed on Ohio

and USEPA websites. Since Ohio has established recreational standards for beach closings related to algal toxins, Ohio must determine Lake Erie waters that are impaired for recreational contact, and not wait two years until the federal standards are established.

The charts below do not show the status of implementation plans and the amount of reductions achieved as a result of the plan/TMDL. This needs to be included in the charts.

Assessment Unit	Assessment Unit Name	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points	Next Field Monitoring
24001 001	Lake Erie Western Basin Shoreline (including Maumee Bay and Sandusky Bay)	5	5	5	5	14	2020
24001 002	Lake Erie Central Basin Shoreline	5	5	5	5	14	2020
24001 003	Lake Erie Islands Shoreline	5	1	5	5	8	2020

These Assessment Units delay field monitoring until 2020 in the Lake Erie Watershed. Waiting until 2020 is unacceptable

This section should include a basin wide TMDL for Ohio's western Lake Erie Watershed

This section should add recreational contact re. algae/toxins

LUCAS COUNTY

OREGON on the bay
City of Opportunity

Tina Skeldon Wozniak, President of Commissioners
Commissioner Carol Contrada
Commissioner Peter L. Gerken

Melissa M. Purpura, Law Director

August 29, 2016

Ohio EPA
Division of Surface Water, P.O. Box 1049
Columbus, Ohio 43216-1049
dsw.webmail@epa.ohio.gov

Attn: 303(d) Comments

On behalf of Lucas County and the City of Oregon, please accept these comments in response to the July 29, 2016 Notice of Availability and Request for Comments Federal Water Pollution Control Act Section 303(d) TMDL Priority List for 2016. Our comments center not only on the priority list but also on the analysis and information in the Ohio 2016 Integrated Water Quality Monitoring and Assessment Report Final Draft (Integrated Report).

The Toledo and Oregon water intakes are located offshore in Lake Erie in Lucas County. All Lucas County residents and thousands of residents in adjacent counties rely on these intakes for their water service. The intakes experience harmful algal blooms that sometimes include the toxin microcystin. In 2014, the Toledo intake incurred levels of microcystin that resulted in Toledo water customers being told not to drink the water. In 2015, Lake Erie experienced a record algae bloom. Both Oregon and Toledo are spending millions of dollars in additional treatment and equipment to increase the ability to keep the microcystin from entering the drinking water. These costs will be largely assessed to Toledo and Oregon water customers.

We are concerned that Ohio is not following the Federal Clean Water Act requirements to reduce the sources of the nutrients that cause the harmful algal blooms. It is widely acknowledged that the primary source of the nutrients – mainly dissolved reactive phosphorus – come from non-point agricultural runoff after heavy rains. In the Integrated Report, Section C Nonpoint 319 page 11, Ohio has minimal goals for nonpoint nutrient reduction in Lake Erie and no specific targeted amounts of phosphorus. The Nonpoint Management Plan in this report references the Ohio Water Resources Council as the workgroup to develop a plan; but while referencing this Council, the State is at the same time proposing legislation to eliminate the Council.

Ohio needs to meet the requirements of the Federal Clean Water Act to be authorized to administer the Clean Water Act provisions and grants from the federal government.

The Ohio Integrated report is required under the Clean Water Act 33 U.S.C. Section 1251 et. seq. Ohio's code to comply with the various sections of the Clean Water Act states in 3745-1-01 as stated below and in Antidegredation 3745-1-05. ***Ohio has failed to establish nutrient water quality standards as required.***

> " (A) It is the purpose of these water quality standards, Chapter 3745-1 of the Administrative Code, to establish minimum water quality requirements for all surface waters of the state, thereby protecting public health and welfare; and to enhance, improve and maintain water quality as provided under the laws of the state of Ohio, section 6111.041 of the Revised Code, the federal Clean Water Act, 33 U.S.C. section 1251 et seq., and rules adopted thereunder.
>
> (B) Whenever two or more use designations apply to the same surface water, the more stringent criteria of each use designation will apply.
>
> (C) These water quality standards will apply to all surface waters of the state except as provided in paragraph (D), (E), or (F) of this rule. Compliance schedules may be granted pursuant to rule 3745-33-05 of the Administrative Code.
>
> (D) These water quality standards will not apply to water bodies when the flow is less than the critical low-flow values determined in rule 3745-2-05 of the Administrative Code."

The Ohio criteria that applies to all waters as stated in 3745-1-04 Section E states:

> "(E) Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae.-;"

The US Clean Water Act 33 USC 1329 R.C. 119.032 review dates: 03/29/2007 and 03/29/2012

> **"(a)STATE ASSESSMENT REPORTS**
>
> **(1) CONTENTS** The Governor of each State shall, after notice and opportunity for public comment, prepare and submit to the Administrator for approval, a report which—
>
> **(A)**
>
> identifies those navigable waters within the State which, without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain applicable water quality standards or the goals and requirements of this chapter;
>
> **(B)**
>
> identifies those categories and subcategories of nonpoint sources or, where appropriate, particular nonpoint sources which add significant pollution to each

portion of the navigable waters identified under subparagraph (A) in amounts which contribute to such portion not meeting such water quality standards or such goals and requirements;

(C)

describes the process, including intergovernmental coordination and public participation, for identifying best management practices and measures to control each category and subcategory of nonpoint sources and, where appropriate, particular nonpoint sources identified under subparagraph (B) and to reduce, to the maximum extent practicable, the level of pollution resulting from such category, subcategory, or source; and

(D)

identifies and describes State and local programs for controlling pollution added from nonpoint sources to, and improving the quality of, each such portion of the navigable waters, including but not limited to those programs which are receiving Federal assistance under subsections (h) and (i) of this section."

The sections referenced above at minimum show that Ohio may be failing to meet the requirements of the Clean Water Act by not setting nutrient standards and by not complying with Section 319 Nonpoint Source Management.

In addition to the failure to set nutrient standards as noted above, the State of Ohio risks Federal Clean Water Act violations in its approach to drainage water management.

3: Drainage Water Management Strategies *Goal 3.03.01—Reduce the rate and amount of runoff*

"Perhaps the single most important action that can be taken to reduce nutrient loadings and impacts on Ohio streams is to reduce the rate and amount of runoff from agricultural production areas. For decades, grass filter strips (FSA CP-21) have been advocated as important tools to provide a buffering media for sheet flow runoff and cost-share funding has resulted in the installation of many thousands of acres of these practices. Unfortunately, a very small percentage of CP-21 "filter strips" are designed to disperse and filter runoff from each discreet contributing drainage area. Likewise, there is very little actual filtration of surface runoff from contributing cropland because FSA CP-21 filter strips (designed as conservation cover standard FOTG 327) are mostly bypassed by concentrated flow runoff. In addition, a significant percentage (estimated at between 25-75% in any given year, N. Fausey, USDA- ARS personnel communication) of the total drainage from farm fields in Ohio is flowing through sub- surface tiles and discharges directly into waterways without ever passing through a filter strip. There is an important need for improvements in the design and installation of edge-of-field buffers so they are more environmentally effective at reducing rate and volume of runoff and treatment. As an example, this includes installing filtering *areas* rather than strips that are specifically designed to capture, retain or disperse runoff. The challenge is

convincing farmers and other landowners that these alternative drainage designs can be installed while still maintaining the overall functionality of the drainage systems and crop yields. Reducing the rate and amount of runoff will require:

- More effective edge of field buffer areas
- Water control devices that retain nutrient laden waters in subsurface drain tiles
- Cover crop planting as part of a long-term conservation crop rotation
- Drainage water management devices on surface and subsurface tile drain outlets

Drainage water management practices, also known as controlled drainage are an important emerging set of tools for dealing with field runoff and mitigating the impacts of tile drainage. Several NRCS approved practices that help with drainage water management include:

- Drainage Water Management (554)
- Structure for Water Control (587)
- Filter Strips/Areas (393)
- Wetland Creation (658)

Goal 3.01.02—Reduce nutrient loss.

Objective 3.01.02(A): Limit the application of livestock manure and fertilizer to those levels that meet agronomic need of the crop(s) being grown. Although this objective seems straight forward, it will actually be a considerable challenge. Recognizing this challenge, successful implementation of this objective will be measured by:

- Provide funding and/or encourage the successful completion of at least 100 nutrient management plans annually during the first three programming years.
- Implement "4-R's" training program in association with the ODNR's "Clean Lakes Initiative".
- NPS Program staff participation on all applicable USDA-sponsored workgroups revising NRCS Field Guide Standards for Nutrient Application, Waste Utilization, Manure Management under NRCS Standard 590—Nutrient Management, and other water quality related discussions."

Though these strategies have existed since 2005, many of these strategies have not been incorporated into Ohio's 319 grant process or put into State of Ohio rules for non-point management. We recommend that Ohio require a true agronomic rate of application of manure as opposed to permitting a rate of application more consistent with waste disposal of manure.

We recommend that Ohio consider the State of Virginia's Non-point Source program which shows actual units of nutrient and other non-point inputs and reports specific, verifiable reductions and progress.

http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/NonpointSourcePollutionManagement/NonpointSourceManagementPlan.aspx

http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/NonpointSourcePollutionManagement/NonpointSourceAnnualReports.aspx

The City of Oregon and Lucas County have asked both the State of Ohio as well as the U.S. Environmental Protection Agency to declare Western Lake Erie Impaired, which should trigger a basin-wide Total Maximum Daily Load process. The basin-wide TMDL would identify sources and amounts of both point and non-point nutrients responsible for the harmful algal blooms and the resultant toxins at the Toledo and Oregon water intakes. In any case, we recommend Ohio incorporate measurements during wet weather events in both existing and future TMDL processes. Failure to include measurements of nutrient runoff during wet weather events in existing and future TMDLs will undercut meaningful efforts to reduce the greatest source of Lake Erie's harmful algal blooms – nutrient runoff from wet weather events which are occurring at greater frequency and intensity. It is difficult to envision a solution to our region's harmful algal bloom problem without starting from genuine knowledge of sources and amounts of nutrients in our source waters.

Further, we object to the State of Ohio proposal to combine the Toledo and Oregon intakes with the near shore area assessment units. These intakes are clearly in the open waters of Lake Erie, well beyond the 100-meter boundaries of existing near-shore assessment units.

For the above stated reasons, we recommend that Ohio:

1. More forcefully adopt the federal Clean Water Act requirements and guidelines for addressing excessive nutrients;
2. Revise its Integrated Water Quality Report to declare the Ohio waters in the western basin 'Impaired' which would include Ohio's open waters and the Oregon and Toledo water intakes;
3. Update and include wet weather measurements in all Lake Erie watershed TMDLs;
4. Revise Ohio's Non-point Source Plan, using Virginia and other states as a model, to report actual nutrient reduction and to propose rules to the Ohio Department of Agriculture to limit the application of manure to the agronomic/4R rate.

We stand willing to collaborate with the State of Ohio's efforts to reduce harmful algal blooms.

Sincerely,

John Borrell

John Borrell, Assistant Lucas County Prosecutor
Board of Lucas County Commissioners

Melissa M. Purpura

Melissa M. Purpura, Law Director
City of Oregon

From:	Harris, Melinda
To:	Alexander, Cathy; Babb, Rahel
Subject:	FW: Lake Erie is at Risk
Date:	Monday, August 29, 2016 3:23:44 PM
Attachments:	image001.png

Melinda Harris
TMDL Supervisor / Rules Coordinator
Division of Surface Water
Ohio Environmental Protection Agency
50 W. Town Street, Suite 700
Columbus, Ohio 43215
(614) 728-1357

From: Keleen McDevitt [mailto:Keleen@gascogas.com]
Sent: Monday, August 29, 2016 3:09 PM
To: EPA dsw.webmail <dsw.webmail@epa.ohio.gov>
Subject: Lake Erie is at Risk

To Whom it May concern:

Thank you for this opportunity to submit comments on Ohio's Clean Water Act Lake Erie water quality.

I can attest to the algae interfering with our lives. Born in 1963, I grew up and learned how to swim on Lake Erie.

About 2 weeks ago, the shoreline as well as over 100 ft. out from my beach is now topped with Green algae preventing me and my grandkids from swimming.
Last year, we didn't pay much attention and swam anyway; we all ended up at doctor at least once with ear infections.

If we don't do anything this will only get worse. We must join forces with those who walked before us, put processes in place, and save this great lake for future generations.

Sincerely,

Keleen McDevitt

From:	MARJ MULCAHY
To:	EPA dsw.webmail
Subject:	303(d) Comments
Date:	Monday, August 29, 2016 4:26:16 PM

Ohio EPA
Division of Surface Water, P.O. Box
1049, Columbus, Ohio 43216-1049
dsw.webmail@epa.ohio.gov

Attn: 303(d) Comments

Thank you for this opportunity to submit comments on Ohio's Clean Water Act Lake Erie water quality. Lake Erie is the drinking water source for 11 million people and is vital to Ohio's economy.

The following is requested:

1. That the western basin of Lake Erie be declared impaired and that the Toledo and Oregon intakes be part of the basin wide impairment rather that the proposed near shore area which is not a major contributor to the intake algae.

2. That Ohio EPA include wet weather in assessing nutrient runoff.

3. That Ohio EPA include algae/toxin's in its **recreational contact** impairments.

4. That Ohio EPA provides an **annual report** to the public that identifies **sources and amounts** of Lake Erie algae/nutrients and **how many pounds/units** are reduced from the funding/changes to reduce nutrient runoff.

5. **That Ohio EPA request the Ohio Department of Agriculture to create rules that LIMIT MANURE APPLICATION OF PHOSPHORUS TO THE CROP NEED/AGRONOMIC NEED/AMOUNT.**

6. That the report be MORE USER FRIENDLY. It is extremely difficult for the layperson to navigate and understand.

Sincerely,

Marjorie Mulcahy
Toledo, Ohio
memulcahy@sbcglobal.net

National Wildlife Federation
Comments on the July 2016
Ohio 2016 Integrated Water Quality Monitoring and Assessment Report

August 29, 2016

Introduction

The National Wildlife Federation (NWF) offers the following comments on the draft 2016 Integrated Water Quality Report. Our comments focus on the sections of the report relating to Lake Erie. We are dismayed that Ohio EPA chose not to pursue the framework and methodology proposed for Lake Erie in the 2014 Integrated Report. And while not pursuing the 2014 proposed methodology, Ohio EPA offers no new or additional approach towards addressing the open waters of Lake Erie. We believe the Integrated Report could be improved by addressing these issues and we offer a new approach discussed below.

Section D-3, Page D-6

In 2014, Ohio EPA proposed a reasonable, robust framework and methodology for assessing the Ohio open waters of Lake Erie in its Integrated Report. In 2016, the limited explanation provided for not pursuing this approach is that the Great Lakes Water Quality Agreement (GLWQA) targets resulted in load reduction targets rather than in-lake nutrient concentrations or criteria and that the as a binational water the USEPA should take the lead in assessment and listing. And while Section D-3 mentions "others reasons" in Section J-3 for not pursuing the proposed framework, none of the information in J-3 provides additional context for this decision.

The justification that the GLWQA targets resulted in nutrient load reductions rather than concentrations as the rationale for not pursuing the proposed methodology is confounding. The 2014 proposed framework and methodology was not based solely on the premise of a total phosphorus or chlorophyll a standard or target. Rather, in 2014 Ohio EPA proposed several other data parameters and data sources. In Section I5.2 Ohio EPA acknowledged "data is now available to evaluate the nearshore and offshore waters and the proposed framework expands the evaluation to cover all of Ohio's Lake Erie waters." While NWF supports the rationale for not including total phosphorus concentration levels in the GLWQA targets, the absence of a concentration target is not an adequate rationale not to implement the rest of the assessment methodology as presented in 2014.

The other explanation Ohio EPA provides for not pursuing the 2014 proposed approach is the assertion that USEPA should take the lead for assessment and listing of the open waters. Regardless of USEPA action, Ohio has responsibility for all of its jurisdictional waters and a duty of care to the public to assess and report on the condition of all public waters. In Section D-3 of the 2016 Integrated Report Ohio EPA expresses its willingness to assist federal partners, yet little has been done at the state or federal level to resolve this issue. The following paragraphs outline a new approach that seeks to address the call for an impairment designation for Lake Erie with an associated TMDL intended to provide an accountability framework for nutrient reductions. Rather than defer to a federal agency, Ohio EPA should seek to carry out work under its authority to align different programs, both state and federal, to achieve the shared goal of a restored Lake Erie.

It is well-documented that the significant annual harmful algal blooms of the western basin of Lake Erie is largely driven by the nutrient loads from the Maumee River. Rather than defer to USEPA or assert the absence of a concentration value, Ohio could address the loading issue in ways that align state programs and processes with federal and binational efforts. Simply providing the list of current activities by all parties (as in Section J-3) is not sufficient to synthesize and leverage these efforts collectively. This list also does not capture all the authorities available to the state to address the relevant Lake Erie water quality problems.

An Alternative Approach

One approach Ohio EPA could take is to reframe its Assessment Unit framework beyond the limitations of the shoreline geography and propose a new unit(s) that aligns with loading at the mouth of the Maumee River. Section G-6 of the Integrated Report defines lacustuary, the zone where Lake Erie water levels have intruded into tributary river channels and describes the extensive body of work that led to defining these waters. This zone could be its own Assessment Unit.

A lacustuary-based Assessment Unit could then be aligned with the GLWQA targets for the Maumee River basin (as well as other major tributaries draining to Lake Erie). The GLWQA target for spring for the Maumee River equates to 860 tons of total phosphorus and 186 tons of DRP. We recommend using a Flow-Weighted-Mean-Concentrations (FWMC) equivalent as a benchmark to track progress in load reduction during a specific period (e.g., annually or March-July) and address variability by year with respect to flow. A lacustuary-defined Assessment Unit would enable Ohio EPA to make an impairment determination for that AU and apply a nutrient concentration number to a meaningful geography and serve as the basis for a TMDL. The target load and/or FWMC can then be sub-allocated to the watersheds in the Maumee River basin and provide the basis for future TMDLs. This approach would establish a basin-wide framework for TMDLs and provide a mechanism for tracking progress across the basin.

Linking the GLWQA target for the Maumee River basin with the TMDL program is an opportunity synchronize state programs and processes with those at the federal and binational level. A comprehensive approach towards meeting the 40% reduction target and reducing algal blooms is necessary regardless of impairment status of individual water bodies or assessment units.

Figure J-1, Page J-3

The figure is used to illustrate how the listing process changed from 2008 to 2010, including reporting at finer assessment unit sizes. Though the figure is discussed in the narrative, it would be helpful to have brief description following the figure of the meaning of the letters (A,R,H,P) and the lowest letters and numbers (4A, 5, 0, etc.).

Open Waters of Lake Erie, Page J-4

At the start of Section J-2, Ohio EPA indicates USEPA has “lead responsibility” for the open waters of Lake Erie (p. J-4). While USEPA is involved in multiple efforts on Lake Erie, including through Annex 4 of the GLWQA, we are not aware that USEPA has formally acknowledged it is taking the lead on a Lake Erie TMDL or otherwise announced a regional TMDL. Should USEPA begin such an effort, it would most likely start with listing decisions already made by the relevant states (i.e., Ohio and Michigan), as it did in the development of the Chesapeake Bay TMDL, when it used listing/impairment decisions from 2008 lists from the relevant jurisdictions (Delaware, District of Columbia, Maryland, and Virginia) as the basis for

the regional TMDL (see USEPA 2010, Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus and Sediment, Section 2).

Inland Waters and Lake Erie Shoreline, J-4

The text (last paragraph of p. J-4) describe the assigning of priority points to assessment units, and references "guidelines" in Table J-3. However, Table J-3 only identifies the number of assessment units in a particular point group for four different designated use areas, not how the points/scores were developed and applied to assessment units. There is reference to Section C8 in this section, but even there, limited discussion is available on the actual process used. There should be some type of summary description (including possibly with examples) of the development and application of the point/scoring system for prioritizing listed waters.

Near Term Priorities for Ohio EPA, Page J-6 et seq.

It is helpful to have indications of near-term priorities through the TMDL and related programs, though the presentation in this discussion is not completely clear. For example, the report identifies three lakes/reservoirs as priorities for the next few years (Tappan Lake, W.H. Harsha Lake, and Clyde/Beaver Creek Reservoir), but then the subsequent (non-numbered) table (Page J-6) identifies four assessment units formally on the impaired waters lists, and it is not clear if any of the aforementioned lakes/reservoirs would be formally addressed through TMDLs of the listed assessment units. Additional text here will help clarify this matter.

Section J, Page J-11, 2nd paragraph

This paragraph includes the statement: "To improve water quality in Lake Erie, a separate and independent analysis is needed to determine in-lake goals and seasonal/annual load reductions targets for the tributaries." This analysis was recently completed through the GLWQA Annex 4 process and a separate analysis is duplicative and unnecessary, in particular absent any new information indicating limitations in the Annex 4 process and results. Elsewhere in the Integrated Report, Ohio EPA supports the targets established and adopted as part of the GLWQA. An explanation is needed as to the intent behind the statement that any additional analysis is needed and worthy of public sector investment to determine targets different from those adopted as part of the GLWQA.

Section J, Page J-13, Figure J-6

The figure includes the phrase: "Currently no established standards for Lake Erie". This must be in error given the Ohio rule OAC 3745-1-31 establishes the designated uses and associated criteria for Lake Erie. Any such statement in the figure should be more precise on what is missing in this section of the administrative code.

The second row of this figure contrasts TMDLs as determining daily load with Annex 4 providing load allocation by country and watershed. Ohio EPA has a long history of developing TMDLs by hydrologic areas (watersheds) but there is no mention of TMDL geography, only that TMDLs develop daily loads. A more thoughtful analysis of these two programs is warranted beyond this (limited) side by side contrast. Ohio EPA is in a unique position to demonstrate how these processes can align and work towards the common goal of reducing nutrients into the Lake.

Section J, Page J-16

This section (including Table J-4) summarizes outcomes of the current listing process. However, Ohio EPA should ensure terms are being appropriately used. For example, the initial discussion in the section references "the number of TMDLs continues to rise…" while Table J-4 appears to describe assessment

results generally for 2016. It may be that the number of developed TMDLs continues to rise, but again, the agency should ensure the language is accurate, and in any case, it would be informative to briefly describe a broader sense of progress (e.g. related to information provided in Figures J-7 – J-9, and how impairment data have changed in recent cycles.)

Section J, Page J-31

Regarding the schedule for TMDL development, Ohio EPA notes here (and elsewhere in the IR) the uncertainty brought on by the recent Ohio Supreme Court decision, and notes the agency is "evaluating alternatives for addressing both past and future TMDLs." In considering near-term work through the program in particular, it would be helpful to have more clarity on possible approaches the agency is considering to move the program forward and meet the requirements of the Ohio Supreme Court decision. Presumably such a decision should be made before any subsequent TMDLs are submitted to USEPA for approval.

Section J

Finally, concerning prioritization in general, it is not clear to what extent Ohio EPA has considered recent USEPA guidance in developing its prioritization process. For example, the most recent guidance memo from USEPA notes the importance of public engagement in the prioritization process, which can include efforts separate from the public notice process around the IR (U.S. EPA, Memorandum from Benita Best-Wong to Water Division Directors, Regions 1-10, and Robert Maxfield, August 13, 2015, available from https://www.epa.gov/sites/production/files/2015-10/documents/2016-ir-memo-and-cover-memo-8_13_2015.pdf). Ohio EPA should provide more clarity in this section of the report of the extent to which it is following USEPA guidance, including opportunities for public input on the prioritization process.

OHIO FARM BUREAU

FORGING *a* PARTNERSHIP *between* FARMERS *and* CONSUMERS

August 29, 2016

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

Re: Draft Ohio 2016 Integrated Water Quality Monitoring and Assessment Report

To Whom It May Concern;

The Ohio Farm Bureau Federation (OFBF) is the largest general farm organization in the state of Ohio with members in all of Ohio's 88 counties. Our members produce virtually every kind of agricultural commodity and as a result, OFBF is strongly interested in Ohio's environmental policies and their potential impact to sustaining a viable agbioresource industry. Our policies are developed via a locally driven grassroots process and support the development of programs, policies and regulations that are scientifically sound, based on credible data, practical, realistic, economically feasible and whenever possible, delivered in a flexible and voluntary manner.

The Draft Ohio 2016 Integrated Water Quality Monitoring and Assessment Report outlines the general condition of Ohio's surface water resources and includes a list of surface waters that do not meet federal or state water quality goals. The report also provides a description of the assessment methodologies used to evaluate each assessment unit for assigned beneficial use designations (human health, recreation, drinking water, and aquatic life).

OFBF would like to submit the following comments based upon a review of the Draft report.

Addressing Nutrients in Lake Erie (Section J3)

OFBF agrees with the assessment and direction the Ohio EPA is undertaking to address the nutrient water quality challenges facing Lake Erie. Lake Erie is a multi-state and binational waterbody requiring a collaborative effort by all parties to develop and implement parallel planning and management efforts. Annex 4 of the Great Lakes Water Quality Agreement provides an effective vehicle for addressing this challenge. Development of Domestic Action Plans, by the four states and one province that share the Lake Erie shoreline, provides the best strategy for improving and protecting Lake Erie.

Evaluating Beneficial Uses: Public Drinking Water Supply (Section H)

Section H of the draft report presents the methodology utilized by Ohio EPA to assess the public drinking water supply (PDWS) beneficial use designation as well as the results of the assessment.

As stated in Section H2.1 - Beneficial Use Designation on page H-3 of the draft document:

"The PDWS use designation is defined in paragraph (B)(3) of OAC rule 3745-1-07. It applies to public waters that, with conventional treatment, will be suitable for human intake and meet federal regulations for drinking water."

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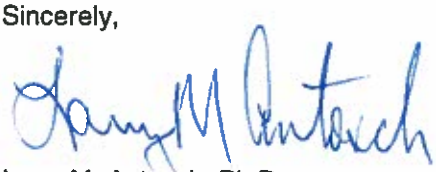
By the above definition, the PDWS use designation clearly relates to the ability of a water utility to produce and distribute safe finished drinking water. It specifically does not address the chemical, biological or physical condition of the raw source water.

Table H-2 (pages H-13 through H-17) of the draft report should only list assessment units that contain public drinking water supplies not meeting federal regulations for finished drinking water. This is not the case. Sixty-two percent (18 of 29) of the assessment units listed on Table H-2 are there solely due to the presence of cyanotoxins in raw water samples. These 18 assessment units should be removed from Table H-2. The presence of a chemical constituent in raw water does not provide the necessary evidence that federal regulations (safe drinking water criteria) were not being met. In addition, Table H-3 (pages H-18 through H-26) must be adjusted to reflect the removal of the 18 assessment units on Table H-2.

I would like to thank you for the opportunity to review and provide comments on the Draft Ohio 2016 Integrated Water Quality Monitoring and Assessment Report. Feel free to contact me, lantosch@ofbf.org, 614-246-8264, if you have any questions.

Sincerely,



Larry M. Antosch, Ph.D.
Senior Director, Policy Development and Environmental Policy

Cc: Frank Burkett, President OFBF, OFBF Board of Trustees, OFBF Cabinet

August 29, 2016

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

Dear Sirs and Mesdames:

We appreciate the opportunity to offer comments on the draft Ohio's 2016 Integrated Water Quality Monitoring and Assessment Report[1], which includes the Clean Water Act Section 303(d) list of impaired waters. This comment letter is being written on behalf of the Ohio Corn and Wheat Growers Association (OCWGA) and the Ohio Soybean Association (OSA). Together these organizations represent the interests of over 25,000 farmers from across Ohio, whose work makes a significant economic impact on Ohio's economy and creates thousands of jobs in our state. The focus of these comments is the listing of the nearshore assessment units of the Western Lake Erie Basin (WLEB) on the 303(d) list and the path forward; individual members of our organizations undoubtedly also have concerns about local receiving waters listed in the Report.

Water quality is, and has been, a top priority for Ohio's grain farmers. We are working to better understand the relationship between agricultural practices and impacts on water quality, and to formulate and test what can be done, without bankrupting the farming community, to address the challenges facing Ohio, Indiana, Michigan and Ontario in helping to address harmful algal blooms in Lake Erie. Since 2011, the Ohio Corn Marketing Program (OCMP), the Ohio Small Grains Marketing Program (OSGMP), and the Ohio Soybean Council (OSC) have invested nearly $3.5 million of farmer dollars in research and education to help mitigate nutrient-related problems in Ohio. Please see Attachment A for details on these efforts.

The knowledge of the agricultural community, with all of its technical and economic diversity, has caused us to conclude that, for a number of reasons, a coordinated statewide effort to address nonpoint source nutrient loads into the WLEB, by providing more specificity for the *State of Ohio's Western Lake Erie Basin (WLEB) Collaborative Implementation Plan,* would unquestionably be more productive than pursuing a total maximum daily load (TMDL) through

[1] http://www.epa.ohio.gov/dsw/tmdl/OhioIntegratedReport.aspx#1766910016-report (July 2016)

an impairment listing. We welcome the opportunity to engage in discussions about how these actions and those included in Attachment A can be incorporated into the Statewide Nutrient Reduction Strategy and other initiatives to address nonpoint source loads to the WLEB as an alternative to a TMDL.

We want to express our support to the agency for continuing to allow the binational process, laid out by Annex 4 of the Great Lakes Water Quality Agreement (GLWQA), to fulfill its intended purposes. The binational governance of the GLWQA and the Domestic Action Plans developed as part of Annex 4, would provide the same results as a TMDL, without the additional onerous rulemaking process that would be necessary to develop an Ohio-specific TMDL for Lake Erie. Developing a TMDL is not necessary. Determining the amount of total phosphorus coming from point (including municipal storm sewer systems) and nonpoint sources (including failing septic systems) and what can be done cost-effectively to effectively manage phosphorus loads is vital.

A TMDL will not result in additional federal funding to help address the harmful algal blooms (HABs) in WLEB. The agricultural community is so diverse, with many smaller family farms, that any truly viable solution must include significant federal and/or state funding. Such funding is not part of the TMDL package, and a TMDL typically does not consider affordability, or cost-effectiveness.

If the resources for implementation of WLEB goals are not affordable or otherwise feasible, or sufficiently flexible to account for site-specific conditions or for developing and implementing new technologies, a TMDL will not accomplish anything. Only an implementation strategy that includes funding and flexibility will ultimately achieve the restoration goals. Even if a TMDL for Ohio nonpoint sources contributing to the WLEB were capable of being implemented, the restoration goals for the WLEB will not be achieved unless Michigan and Ontario are in lock step. Implementation of a TMDL without a sound financial strategy could result in significant adverse economic impacts to individual farmers – ultimately resulting in a loss of an important economic sector of Ohio. We are confident that Ohio agriculture can be part of the solution if the cost and effectiveness of technologies are considered as Ohio works to implement the Domestic Action Plans over time.

While we are supportive of Ohio's decision to not list the entire WLEB as impaired, we wish to note several shortcomings in the science used to declare impairments of the Public Drinking Water Supply (PDWS) use designation in Lake Erie and elsewhere, based solely on the concentration of algae. Of course, Ohio must protect the state's drinking water supply. However, the science correlating the amount of algae in raw and finished water is lacking. There is currently no numeric water quality standard for algae in Ohio, and the linkage between the narrative water quality criteria and the Safe Drinking Water Act (SDWA) standards is not demonstrated.

Finished drinking water must meet SDWA standards utilizing conventional drinking water treatment; however, this does not mean that raw (untreated) water must also meet these standards. Numerous drinking water treatment plants have demonstrated that they can safely treat raw water that exceeds the targets used by Ohio EPA in the draft report. It is important to recognize that the microsystin targets for the SDWA are not even maximum criterion limits (MCLs) for finished drinking waters and are instead part of the health advisories in Ohio's harmful algal bloom response strategy[2]. Ohio has not provided a clear relationship between the criterion of two or more excursions above the state drinking water threshold for a health advisory (microcystins = 1 microgram per liter or ug/L) within a 5-year period to establish PDWS impairments (in both 2014 and 2016) and the frequency, duration, and magnitude associated with water quality standards developed as part of the CWA. Applying such a finished drinking water standard to a raw water intake is overly conservative (and therefore potentially costly, and unnecessarily so to affected stakeholders) and does not account for natural variability, or the treatment provided by drinking water facilities. Ohio should collect additional data regarding microcystin levels in raw and finished drinking water, including the ability of drinking water treatment to effectively remove microsystin. Once additional data are collected, we believe that a translator between approved water quality standards and protecting individual water supplies should be developed.

We understand the need to make this process transparent, accountable, and effective and welcome the opportunity to engage in this dialogue to identify solutions that are flexible, maximize cost-effectiveness, and provide meaningful environmental improvements for WLEB. If you have any questions regarding our concerns or would like additional information regarding current efforts being undertaken by our members, please do not hesitate to contact us.

Regards,

Adam Graham

President
Ohio Soybean Association

Chad Kemp

President
Ohio Corn & Wheat Growers Association

[2] http://epa.ohio.gov/Portals/28/documents/habs/PWS_HAB_Response_Strategy.pdf

Attachment A

The Ohio Corn Marketing Program (OCMP), the Ohio Small Grains Marketing Program (OSGMP), and the Ohio Soybean Council (OSC) are currently providing significant resources to a number of research initiatives being conducted by The Ohio State University to better understand currently nutrient related conditions in Ohio. These include:

- Participating in edge of field research to revise and validate the Phosphorus Risk Index to identify how phosphorus leaves Ohio fields and how to use the most effective best management practices to limit phosphorus transport.
- Supporting fertilizer placement research
- Funding updates to the Ohio portion of the Tri-State Fertilizer recommendations that are more than twenty years old.
- Providing nutrient management plan (NMP) development assistance to Western Lake Erie Basin (WLEB) farmers
- Revising the Best Management Practices Manual

We also are supporting the 4RTomorrow awareness campaign led by the Ohio Federation of Soil and Water Conservation Districts, to educate Ohio farmers on nutrient stewardship. We support the voluntary 4R Nutrient Stewardship Program's fertilizer retailer certification program led by the Ohio AgriBusiness Association and The Nature Conservancy.

Additionally, our organizations continue to support our members located in the WLEB in their efforts with the Great Lakes Restoration Initiative Demonstration and Nutrient Reduction Projects, the Ohio Clean Lakes Initiative, and their compliance with Ohio Senate Bill 1 and Ohio Senate Bill 150.

From:	Harris, Melinda
To:	Alexander, Cathy; Babb, Rahel
Subject:	FW: Comments and specific questions about 2016 Integrated Water Quality Report
Date:	Monday, August 29, 2016 2:41:51 PM
Attachments:	image001.png

Melinda Harris
TMDL Supervisor / Rules Coordinator
Division of Surface Water
Ohio Environmental Protection Agency
50 W. Town Street, Suite 700
Columbus, Ohio 43215
(614) 728-1357

From: Annette Shine [mailto:annettedshine@gmail.com]
Sent: Monday, August 29, 2016 2:35 PM
To: EPA dsw.webmail <dsw.webmail@epa.ohio.gov>
Subject: Comments and specific questions about 2016 Integrated Water Quality Report

Dear Division of Surface Water,

Below are my concerns about Ohio's draft document of the 2016 Integrated Water Quality Report which is due to be submitted to the federal EPA. Sadly, the 600 pages do not inspire much confidence in citizens that the Ohio EPA is effectively pursuing its goal "to protect the environment and public health by ensuring compliance with environmental laws and demonstrating leadership in environmental stewardship." Rather, it appears much more proficient at the "active stalling," technique utilized in other countries to thwart implementation of environmental regulations.

I hope you will address my concerns below, in order to revise your draft before submission to the US EPA.

Thanks you very much for your consideration.

Annette D. Shine, Ph.D.
5658 Swan Creek Dr.
Toledo, OH 43614

Questions about Ohio EPA 2016 Integrated Water Quality Report

1. Why has the Western Lake Erie Basin not been listed as impaired due to harmful algae blooms? Your excuse that the watershed is shared with Michigan and Ontario does not absolve

Ohio from addressing this problem, since the nutrients responsible for the HAB come heavily from the Maumee River basin in Ohio. My household alone spent more than $100 to purchase drinking water and sanitizer during the 2014 crisis, and that's not counting the portion of my taxes and utility bill that were utilized by Toledo's water treatment plant.

2. Your 2016 Integrated Water Quality Report contains no fewer than 13 references to the Ohio Supreme Court decision from March 2015 that requires Ohio EPA to follow state requirements in enforcing TMDLs. You primarily cite this Supreme Court ruling as a justification for your further inaction. Chapter 119 consists primarily of procedures and time tables for implementing public notice and allowing public input, including publications and hearings, about proposed rule changes. Since, based on your website, you already appear to have satisfied many of the requirements of Chapter 119 in non-TMDL rules promulgation, what remains to be done to insure that all FUTURE proposed Ohio EPA actions covered by the Supreme Court decision will be in full compliance with Chapter 119? You have had 15 months between when the decision was rendered and when the draft of IR 2016 was published to address these issues.

3. Chapter 119.035 allows you to appoint an advisory committee to help you comply with Chapter 119. Have you appointed such an advisory committee? If so, who are the members, and what has the committee done? If you have not appointed one, why not?

4. Effective January 4, 2016, Ohio EPA has changed standards on E. coli concentrations for recreational water uses. These changes include numerical changes in the bacterial colony count in various use categories, as well as lengthening the time period for "threshold values" from 30 days to 90 days. The time period is extremely significant, since bacterial counts balloon in the warm summer months (June, July and August), which, of course, are the most popular times for water recreation. If you had applied the "new" standards to the data in the 2016 report, instead of the "old" standards, how would the "use attainment" figures reported in Table F-12 be changed? The "old" standards gave 10% supporting and 90% not supporting. This will be important for citizens to assess objectively whether or not water quality is improving.

5. I asked this question during the August 16th webcast about the 2016 IR report, but did not receive an answer. What fraction of the data contained in your report was collected by people or organizations who were NOT employees or contractors of the Ohio EPA? Your metadata published online suggest this is a very small number, on the order of 1%. Your 2014 report indicated an intent to expand the small body of groups eligible to submit "credible" data. The key metric should be the actual percent of outside-contributed data, not the number of groups eligible to submit data.

Anthony Szilagye
155 Maple
Rossford, Ohio 43460

Ohio EPA
Division of Surface Water
PO Box 1049
Columbus, Ohio 43216-1049
dsw.webmail@epa.ohio.gov

Attn. 303d Comments

Dear Sirs:

Having lived in Northwest Ohio most of my life and having witnessed the decline of water quality in Lake Erie, I am submitting the comments below regarding the Ohio 2016 Integrated Water Quality Monitoring and Assessment Report Final Draft (Integrated Report) due to my concern for the limitations of this report regarding Lake Erie.

One of the primary deficits of the report is the lack of advocacy in this report for declaring the Western Basin of Lake Erie Impaired. Ohio has advocated voluntary measures to address the nutrient pollution issue in Lake Erie and other waterbodies in both the Ohio Phosphorus 1 and 2 reports. Voluntary measures have not been successful in reducing nutrient pollution in the Chesapeake and the Fox River Green Bay areas. Both the Chesapeake and Fox River Green Bay watersheds report being successful in reducing nutrient pollution through their having a TMDL to identify the sources and amounts of nutrient pollution. If Ohio is really serious about a healthy Lake Erie the first step in the process is for Ohio to declare the Western Lake Erie Basin Impaired and the Toledo and Oregon intakes be part of this declaration. This declaration will provide the impetus for the TMDL process which will identify the sources and amounts of nutrients affecting Lake Erie.

Once TMDL's are established and sources and amounts Ohio should provide a report to the public to show the reductions in the amounts of pollutants from the various sources. The success of the program can be demonstrated from an accurate accounting of the reduction in pounds of nutrients for investment and changes made.

A critical part of this process is an accurate assessment of nutrient runoff during wet weather conditions. Most of the nutrient pollution occurs to during high flow events and non-point sources need to be accurately assessed. Both the Phosphorus Task Force I and II identify non-point sources as being the primary source of nutrient pollution. 80% of the nutrient pollution comes from wet weather events. So to addressing nutrient pollution without an assessment of nutrient runoff during wet weather events.

Ohio issues advisories for beaches during times of severe algae blooms but has not declared algae/toxins as a recreational contact impairment. Ohio has recreational algae toxin standards and needs to follow through with adding algae/toxin to its recreational contact impairment list.

Lastly, the OEPA should request that the ODA limit manure runoff to the agronomic rate. Currently the agronomic rate for crops for phosphorus is 40 ppm**.** Ohio NPDES permits need to require that all manure applied have a limit of less than 40 ppm. Getting serious of nutrient pollution in Lake Erie will not happen as long as this difference is neglected by Ohio law and regulatory structure.

The advantages for Ohio to do more than just talking the talk of nutrient reduction are numerous. Increased revenue from increased economic activity around Lake Erie is one advantage. Another is for Ohio to adequately address the cause of nutrient pollution that is costing many communities millions of dollars in water treatment upgrades. The costs of addressing this issue will only increase for communities due to the neglect of Ohio in the following years. Addressing is the smart thing to do economically. Assisting Ohio's communities today will assist businesses and communities to flourish and in turn be a boon for the state of Ohio as whole.

Sincerely Your

Anthony Szilagye

From:	Patrick Wright
To:	EPA dsw.webmail
Subject:	Comments on the draft version of the 2016 Integrated Report
Date:	Monday, August 29, 2016 1:25:27 PM

Dear Ms. Kavalec et al.,

Ohio will likely learn some valuable information from agriculture trying various best management practices to control nutrient runoff. It would be wonderful if voluntary measures alone would clean up harmful algal blooms. Sadly, that is not how human nature works.

Toledo's improvements in treating both drinking water and sewage/storm water have been the result of enforcement. To improve the entire Maumee River Watershed, TMDLs are needed to establish clear goals and coordinate efforts to meet them. A designation of impairment will bring TMDLs into play as well as bringing more resources to successfully enforce them.

Edge of field monitoring is simple fairness. Pollution gets treated where it is created. For the sake of the common good, please amend and improve your Report to include these realities.

Thank you,
Patrick E. Wright
4326 N. Lockwood Ave.
Toledo, Ohio 43612-1749

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

AUG 29 2016

REPLY TO THE ATTENTION OF:
WW-16J

Tiffani Kavalec, Chief
Division of Surface Water
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, Ohio 43216-1049

Dear Ms. Kavalec:

The U.S. Environmental Protection Agency has conducted a review of Ohio's draft 2016 Integrated Report (IR), including Ohio's Clean Water Act Section 303(d) list of impaired waters, which is on public notice through August 29, 2016. We are writing to provide EPA's comments regarding Ohio's Section 303(d) list, as well as comments and commendations for other matters related to the draft IR.

Comments on Lake Erie Listing related to nutrients and Harmful Algal Blooms

Harmful Algal Blooms (HABs) have become increasingly pronounced in Lake Erie in recent years, causing direct impacts on Toledo's drinking water system in 2014. Concerns about nutrient pollution and HABs have led to increased efforts to control nutrients, especially phosphorus, from entering the Lake. Such efforts include the Ohio Lake Erie Phosphorus Task Force, the Western Basin of Lake Erie Collaborative Agreement between Ohio, Michigan and Ontario, and the development of nutrient loading targets under Annex 4 of the Great Lakes Water Quality Agreement between the United States and Canada.

In its 2014 IR, Ohio listed for the first time the shoreline areas of the Western Basin of Lake Erie as impaired due to microcystin in public drinking water supply intake zones. In the draft 2016 IR, Ohio has expanded upon this approach by proposing to add the shoreline areas of the Central Basin and the Western Basin Islands to the impaired waters list for the drinking water supply designated use. EPA commends Ohio EPA for this action.

In its 2014 IR, Ohio EPA proposed a new approach for Lake Erie with new assessment units and methodology for the nearshore and open waters to be used in future listing cycles. Such an approach would provide for a comprehensive assessment of Ohio's Lake Erie waters. However, for reasons discussed in the 2016 draft IR, Ohio EPA does not intend to assess the open waters of either the Western Basin or Central Basin for impairment at this time. The draft IR states "Ohio EPA believes that assessment and listing of the open waters under the CWA should be led by

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U.S. EPA in consultation with the states and Ohio is willing to assist its federal partners with the development of appropriate monitoring and assessment protocols for the open waters."

We note that the responsibility to assess Ohio's waters, including the State's open waters of Lake Erie, and determine whether or not they are meeting Ohio's water quality standards, is specifically a state responsibility under the CWA. (See Clean Water Act Section 303(d)(1)(A) and 40 CFR 130.7(d)(1)). EPA's role is to review and either approve or disapprove the state's list of impaired waters. (See 40 CFR 130.7(d)(2)).

Ohio EPA needs to assess all of its waters in the Western and Central Basins of Lake Erie for all applicable water quality standards as defined at 40 CFR 130.7(b)(3). Such standards include numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements. In particular, the state should assess against its narrative standard at 3745-1-04(E):

> *The following general water quality criteria shall apply to all surface waters of the state including mixing zones. To every extent practical and possible as determined by the director, these waters shall be: ... (E) Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae...*

In assessing whether the state's applicable water quality standards are being met, Ohio EPA should assemble and evaluate all existing and readily available water quality-related data and other information to evaluate for factors such as:

- The extent of algal coverage
- Chlorophyll a concentrations
- Impacts to recreation, including fishing and beach warnings and closures
- Impacts to industry and commerce, including the commercial fishing and charter boat industry
- Impacts to drinking water, including additional costs to water treatment to treat for algal toxins, and impacts to residents served by water utilities
- Impacts to retail business, including restaurants and hotels
- Impacts to aquatic life

Ohio EPA should also consider the applicability of other numeric and narrative Water Quality Standards to Lake Erie. Ohio EPA should assess the open water of Lake Erie to determine whether or not the lake is meeting all applicable standards, and where it is not, list the appropriate impairments on its final 2016 303(d) list.

Comments on Ohio River and ORSANCO

Page D-5 discusses Ohio EPA's evaluation of the Ohio River. Paragraph three includes the statement "Ohio EPA defers to the ORSANCO analysis and the list of impaired Ohio River segments found in 2014 Biennial Assessment of Ohio River Water Quality Conditions (ORSANCO 2014)." EPA has concerns that Ohio EPA is incorporating the Ohio River Valley Sanitation Commission (ORSANCO) methodology and assessment document for determining impairment of the Ohio River into its 2016 Section 303(d) list:

First, there may be exceedances of Ohio's numeric target for the Ohio River that are not being captured as Category 5 on Ohio's list if the state is relying on the approach being used by ORSANCO's support its 2014 Biennial Assessment of waters. ORSANCO's approach is intended as a 305(b) monitoring and assessment documentation of methodology and results, and is not intended to identify impaired waters in compliance with 303(d) requirements.

Second, for Aquatic Life Use (ALU) impairment status, Ohio EPA requires all sampling locations to meet ALU indices on a large river assessment unit for that river to attain water quality standards using pools (i.e., distance between dams; ranging from 6-95 miles) as the assessment unit. However, ORSANCO aggregates its data collected in a given pool such that a rating of poor in one sampling location within a pool would not necessarily result in that pool determined as not supporting a use. Further, ORSANCO uses the fish community monitoring to determine support of ALU rather than the instream water chemistry. Thus relying on ORSANCOs methodology may lead to a conclusion that the entire river is supporting ALU[1] when a review of chemical data would lead to a different conclusion. For these reasons EPA requests that Ohio EPA conduct its own assessment of the Ohio River using ORSANCO's data and list those river segments that are determined to be impaired.

Comments on Wetlands Data

EPA commends Ohio EPA for applying its three wetland tools to the Scioto TMDL, thereby verifying its Level 1 metrics with Level 2 and 3 tools. Level 1 was used to characterize the wetland condition of the Middle Scioto in 2012, and was used in the TMDL process in 2013. Level 2 is the Ohio Rapid Assessment Method for Wetlands (ORAM) and Level 3 is the Vegetation Index of Biotic Integrity (VIBI), used in 2014 (high scores indicate wetland relatively protected from human disturbance). The results showed consistency in the answers provided by the rapid Level 2 method and the detailed Level 3 assessments for 10 sites in the Middle Scioto, and validated the accuracy of the probabilistic survey of 50 wetlands using only ORAM. EPA recommends that Ohio EPA expand the description on how this information was used in the TMDL. It might be useful to include a description of how the results of the Middle Scioto HUC 12 analysis will be used in TMDL development, implementation, and evaluation (Section I).

We appreciate the inclusion of the wetland status report out. Ohio EPA's proposal to identify a list of special waters as candidates for extra regulatory protection is a positive step and we encourage Ohio EPA to implement this approach.

Commendations on Drinking Water Protection and Inland Waters

EPA commends the Ohio EPA for continuing to review and update its assessment methodology for public drinking water use that first appeared in the 2006 IR. The 2016 methodology refines

[1] From p. 2 of the 2014 Biennial Report from ORSANCO. "(US EPA) guidance indicates "Independent Application" should be used when two or more contradictory data sets exist. The weight of evidence approach is directly opposed to US EPA's policy of independent application, which stipulates that if any one data set indicates impairment, then the water body should be designated as impaired. Although not consistent with EPA, ORSANCO concluded that a direct measurement of aquatic life using biological data is the most effective way of determining whether or not the Ohio River supports its aquatic life use designation."

the use of algal indicators, primarily cyanotoxins that were first added to the 2014 report. EPA encourages the Ohio EPA to expand monitoring or data collection to increase the percent of complete impairment decisions for the next cycle. EPA also encourages the incorporation of some of the possible future algal indicators being considered. (Section H).

EPA supports Ohio EPA's assessment for the drinking water use in inland waters, using nitrate, pesticide, and algae indicators:

- "To emphasize protection of the Public Drinking Water Supply beneficial use from HABs, Ohio 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..." (Section C7);

- Moving forward, Ohio continues to intend to ... "sharpen focus on Public Water Supply Use," as well as "incorporate HAB considerations into priorities (both PDWS use and ultimately Recreation use), among other priorities" (Section C8);

- "Ohio plans to explore how other types of plans (9 Element Watershed Plans for instance) or regulatory actions could be used more effectively to protect our highest quality waters and/or those that are of high importance for drinking water or recreation" (Section C8);

- "Ohio EPA plans on reviewing the algae impairment assessment methodology prior to the next reporting cycle to determine potential incorporation of U.S. EPA's cyanotoxin health advisories and revisions to the indicators of impairment" (Section H); and

- "Possible future algae indicators include: Total Trihalomethanes (TTHMs) or Haloacetic Acids (HAA5) MCL violations; elevated total organic carbon (TOC); taste and odor events; and additional treatment or source control requirements associated with algae impacts" (Section H).

EPA commends Ohio for establishing a new Harmful Algal Bloom Section to coordinate harmful algae management and response. Page C-29 states "Ohio EPA was required to implement actions that manage wastewater and limit nutrient loading and develop and implement protocols and actions to protect against cyanobacteria and public water supplies. Ohio adopted new and revised rules, effective June 1, 2016, to meet these requirements. Cyanotoxins are not currently regulated in recreational waters..... In 2016, Ohio EPA created a new Harmful Algal Bloom Section housed in the Division of Drinking and Ground Waters to manage both drinking water and recreational response."

Minor corrections

Page C-41: typo "affected" parties

Page E-9: between Dillon and Greenbrier, missing Dudley Run-Rush Creek 05060001 02 03, shown in L1 and L4 as category 5 for Human Health, and between Lizard and Scippo missing Dear Creek Lake – Deer Creek 05060002 02 05 shown in L1 and L4 as category 5.

Thank you for the opportunity to comment on Ohio's draft 2016 IR. If you have any questions on these comments, please contact me at 312-886-0236.

Sincerely,

Peter Swenson

Peter Swenson, Chief
Watersheds and Wetlands Branch

cc: Melinda Harris, OEPA
Cathy Alexander, OEPA