Message

From: cathy.alexander@epa.ohio.gov [cathy.alexander@epa.ohio.gov]
Sent: 7/13/2018 8:17:58 PM
To: Chruscicki, Jean [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=51f931addb274ebcad5499fa89ed015f-JChrusci]
CC: Melinda.Harris@epa.ohio.gov
Subject: RE: 303(d) approval letter
Attachments: ATT00001.txt

Jean,
In the version of the report that was public noticed, there was a table J-15. So the response to comments does refer the commenter to the correct table based on the draft report. And we advise the reader that page number references to the draft report may not correspond to the same page numbers in the final report for instance, so I don't think we would normally provide an errata sheet for a reference in the response to comments because it often happens that changes get made between the draft and final report. Does that make sense?
If you saw any references to tables within the rest of the report that did not get updated please let me know.
Thanks and have a good weekend!
Cathy

From: Chruscicki, Jean <chruscicki.jean@epa.gov>
Sent: Thursday, July 12, 2018 10:49 AM
To: Alexander, Cathy <cathy.alexander@epa.ohio.gov>
Subject: RE: 303(d) approval letter

Hi, Cathy,
Were you able to do the final edits of the 2018 IR before posting the final? (the J-15 really being J-13, etc.?) Or any other edits? Otherwise I think we need an errata sheet posted too.
Thanks,
Jean

From: cathy.alexander@epa.ohio.gov [mailto:cathy.alexander@epa.ohio.gov]
Sent: Monday, July 09, 2018 12:13 PM
To: Swenson, Peter <swenson.peter@epa.gov>; Chruscicki, Jean <chruscicki.jean@epa.gov>
Subject: RE: 303(d) approval letter

Thank you!
Cathy

From: Swenson, Peter <swenson.peter@epa.gov>
Sent: Monday, July 09, 2018 12:18 PM
To: Kavalec, Tiffani <Tiffani.Kavalec@epa.ohio.gov>; Alexander, Cathy <cathy.alexander@epa.ohio.gov>
Cc: Chruscicki, Jean <chruscicki.jean@epa.gov>; Hall, Brian <brian.hall@epa.ohio.gov>
Subject: 303(d) approval letter

Hello Tiffani and Cathy

Attached is USEPA's approval of Ohio EPA's 2018 303(d) list. A hard copy will be coming to you by mail.

Please let me know if you have any questions.

Thank-you

Peter Swenson (WW-16J)
Chief, Watersheds and Wetlands Branch
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604
312-886-0236
swenson.peter@epa.gov

Did You Know: Children of parents who talk to their teens about drugs are
up to 50% less likely to use. Start the conversation:
StartTalking.Ohio.Gov

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Message

From: cathy.alexander@epa.ohio.gov [cathy.alexander@epa.ohio.gov]
Sent: 7/9/2018 5:13:12 PM
To: Swenson, Peter [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eaf7e8d916134568ba23121a89260045-PSwenson]; Chruscicki, Jean [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=51f931addb274ebcad5499fa89ed015f-JChrusci]
Subject: RE: 303(d) approval letter

Thank you!
Cathy

From: Swenson, Peter <swenson.peter@epa.gov>
Sent: Monday, July 09, 2018 12:18 PM
To: Kavalec, Tiffani <Tiffani.Kavalec@epa.ohio.gov>; Alexander, Cathy <cathy.alexander@epa.ohio.gov>
Cc: Chruscicki, Jean <chruscicki.jean@epa.gov>; Hall, Brian <brian.hall@epa.ohio.gov>
Subject: 303(d) approval letter

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Building a Drug-Free Future

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Message

From: Tiffani.Kavalec@epa.ohio.gov [Tiffani.Kavalec@epa.ohio.gov]
Sent: 7/9/2018 4:52:40 PM
To: Swenson, Peter [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eaf7e8d916134568ba23121a89260045-PSwenson]; cathy.alexander@epa.ohio.gov
CC: Chruscicki, Jean [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=51f931addb274ebcad5499fa89ed015f-JChrusci]; brian.hall@epa.ohio.gov
Subject: RE: 303(d) approval letter

Much Thanks!

From: Swenson, Peter [mailto:swenson.peter@epa.gov]
Sent: Monday, July 9, 2018 12:18 PM
To: Kavalec, Tiffani <Tiffani.Kavalec@epa.ohio.gov>; Alexander, Cathy <cathy.alexander@epa.ohio.gov>
Cc: Chruscicki, Jean <chruscicki.jean@epa.gov>; Hall, Brian <brian.hall@epa.ohio.gov>
Subject: 303(d) approval letter

Hello Tiffani and Cathy

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Please let me know if you have any questions.

Thank-you

Peter Swenson (WW-16J)
Chief, Watersheds and Wetlands Branch
U.S. Environmental Protection Agency, Region 5
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Message

From: Swenson, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=EAF7E8D916134568BA23121A89260045-PSWENSON]
Sent: 7/9/2018 4:17:49 PM
To: Tiffani.Kavalec@epa.ohio.gov; cathy.alexander@epa.ohio.gov
CC: Chruscicki, Jean [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=51f931addb274ebcad5499fa89ed015f-JChrusci]; brian.hall@epa.ohio.gov
Subject: 303(d) approval letter
Attachments: Letter to Tiffani Kavalec OEPA - signed on July 9 2018.pdf

Hello Tiffani and Cathy

Attached is USEPA's approval of Ohio EPA's 2018 303(d) list. A hard copy will be coming to you by mail.

Please let me know if you have any questions.

Thank-you

Peter Swenson (WW-16J)
Chief, Watersheds and Wetlands Branch
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604
312-886-0236
swenson.peter@epa.gov

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

JUL 0 9 2018

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

Re: Approval of 2018 Clean Water Act (CWA) Section 303(d) List

Dear Ms. Kavalec:

The U. S. Environmental Protection Agency conducted a complete review of the Ohio Environmental Protection Agency (Ohio EPA's) 2018 CWA Section 303(d) list and supporting documentation and information. Based on this review, EPA determined that Ohio EPA's 2018 list of water quality limited segments still requiring Total Maximum Daily Loads (TMDLs) meets the requirements of Section 303(d) of the CWA and EPA's implementing regulations. Ohio EPA's 2018 Integrated Report also included an updated priority ranking of Ohio's impaired waters still requiring TMDLs. EPA finds that Ohio EPA's discussion of prioritization of its waters, including for Lake Erie, satisfies the requirement to submit a priority ranking consistent with EPA's regulations. *See* 40 C.F.R. 130.7(b)(4). Therefore, EPA hereby approves Ohio EPA's 2018 CWA Section 303(d) list.

The statutory and regulatory requirements, and EPA's review of Ohio's compliance with each requirement, are described in the enclosed decision document.

If you have any questions please contact Mr. Peter Swenson, Chief, Watersheds and Wetlands Branch, at 312-886-0236.

Sincerely,

Linda Holst

Linda Holst
Acting Division Director
Water Division

Enclosure

cc: Cathy Alexander, Ohio EPA

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Recycled Paper (100% Post-Consumer)

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 Environmental Protection Agency's (Ohio EPA) 2018 Section 303(d) list and supporting documentation and information. Based upon this review, EPA is approving Ohio's list of Water Quality Limited Segments (WQLS) still requiring total maximum daily loads (TMDLs) under Section 303(d) of the Clean Water Act (CWA or "the Act") and EPA's implementing regulations. Ohio's list appears in Category 5 of the Ohio 2018 Integrated Water Quality Monitoring and Assessment Report (2018 Integrated Report or 2018 IR), and EPA's approval extends only insofar as waterbodies are listed or not in Category 5 of the 2018 Integrated Report.[1] The statutory and regulatory requirements are described in detail below.

For the 2018 list, Ohio identified a new Sandusky Basin shoreline assessment unit (AU), which was previously part of the Western Basin shoreline. The Sandusky Basin shoreline AU is located between the Western Basin and Central Basin shorelines. Ohio EPA has listed the Sandusky Basin shoreline AU for all four of Ohio's designated uses: Human Health (HH), Recreation Use (RU), Aquatic Life Use (ALU), and Public Drinking Water Supply (PDWS). EPA is approving these listings. EPA is also approving Ohio EPA's listing of the Western Basin shoreline for PDWS, which was not included on its amended 2016 list. The bases for these listings are summarized in Section F, H and L of the 2018 IR.

EPA concurs that Ohio's submission accurately reflects the excess of algal indicators of impairment in both the open waters and shoreline AUs of Ohio's portion of Lake Erie, and provides the details of the assessment methodology to determine these impairments, as described in the 2018 IR and within this document.

EPA also concurs with Ohio's revision of its definitions of shoreline AUs to extend to ≤3 meters in depth.[2]

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 their jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) of the Act are not stringent

[1] Ohio EPA, Ohio 2018 Integrated Water Quality Monitoring and Assessment Report (June 2018), available at http://www.epa.ohio.gov/dsw/tmdl/OhioIntegratedReport#1798510016-report

[2] The 2016 IR Amendment included new open water AUs for the Western, Sandusky Bay, and Central Basins. The shoreline AUs were defined as extending 100 meters from the shoreline and 500 yards from drinking water supply intakes, but were revised in the 2018 IR. The Sandusky AU change between the 2016 IR Amendment and the 2018 IR resulted in the Sandusky Basin shoreline and Western Basin shoreline listings for PDWS in the 2018 IR.

enough to implement any applicable water quality standard (WQS), 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) of the Act.

EPA's implementing regulations require states to submit biennially a list identifying WQLSs still requiring a TMDL (40 C.F.R. §§130.7(b)(1), 130.7(d)). 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)).

Evaluation 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, 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 assemble and evaluate any other existing and readily available data and information. EPA's guidance describes categories of water quality-related data and information that may be existing and readily available.[3] 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 not use 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)).

The Ohio 303(d) list of prioritized impaired waters (i.e., Category 5 of the 2018 Integrated Report) is contained in Section L4 of the 2018 Integrated Report. EPA has reviewed Ohio's description of the data and information it assembled and evaluated, its methodology for

[3] EPA, Guidance for Water Quality-Based Decisions: the TMDL Process (April 1991) (hereinafter referred to as EPA's 1991 Guidance).

identifying waters, and any other relevant information including information the State submitted to EPA in response to requests for additional information.

Ohio relied on its credible data law, codified in the Ohio Revised Code (ORC) §§ 6111.50 - 6111.56, in deciding whether or not to use particular data or information in determining whether to list particular waters. That law establishes requirements for the use of external data. The 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 (QDC) and be compliant with the specifications of "Level 3 credible data," in order to be used for listing waters under Section 303(d) of the Act. Those rules, effective March 24, 2006, have been codified in Chapter 3745-4 of the Ohio Administrative Code (OAC). Within Section D6.1 of the 2018 Integrated Report is the memorandum dated May 23, 2017 sent by Ohio to solicit Level 3 data from external sources and all Level 3 QDCs. External sources include State and county health departments, universities, U.S. Geological Survey, Northeast Ohio Regional Sewer District (NEORSD), the Ohio Department of Natural Resources (ODNR), Public Water Supply (PWS) permittees, Syngenta Corp Protection, Inc., Midwest Biodiversity Institute, Enviroscience, Inc., Ohio Department of Transportation, Heidelberg College, EA Science and Technology, Inc., Cleveland Metroparks, and Clermont County Office of Environmental Quality. The data collectors either received training and certification from Ohio EPA to become QDCs, or the entities have submitted data in the past. The Ohio River data collection is through the Ohio River Valley Water Sanitation Commission (ORSANCO), and Ohio EPA uses this ORSANCO data; ORSANCO's non-support and partial support of uses in the Ohio River are considered impaired by Ohio.[4]

In addition to using Ohio EPA data, Ohio's assessment for the 2018 listing cycle used data from other Level 3 entities, or those agencies and entities that could likely be approved as Level 3 QDCs. Data used or protocols reviewed were from EPA, the National Oceanic and Atmospheric Administration (NOAA), NOAA's Great Lakes Environmental Research Lab (GLERL), the ODNR – Department of Water (DOW) Sandusky, charter boat captains, the US Geological Survey (USGS), the Ohio State University, Bowling Green State University, and the University of Toledo. Data and analyses from these entities had been compiled through the Great Lakes Water Quality Agreement (GLWQA) Annex 4 workgroup. The workgroup's efforts resulted in phosphorus reduction targets established under Annex 4 to decrease the occurrence and frequency of algal bloom biomass and cyanobacteria,[5] and the workgroup's results were peer reviewed by an *ad hoc* committee of EPA's Science Advisory Board. Ohio further collaborated with many of the researchers and data collectors in the workgroup to formulate the assessment methodology that Ohio used in Lake Erie impairment assessment in this listing cycle (Section F of the 2018 IR) and the amended 2016 IR.

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[4] ORSANCO, Assessment of Ohio River Water Quality Conditions 2010-2014 (June 2016). http://www.orsanco.org/publications/biennial-assessment-305b-report/ (2016 IR) and Section D of the 2018 Integrated Report

[5] Great Lakes Water Quality Agreement, Annex 4. "Recommended Phosphorus Loading Targets for Lake Erie". Annex 4 Objectives and Targets Task Team Final Report to the Nutrients Annex Subcommittee. May 11, 2015.

EPA concludes that the State has satisfied the regulatory requirement to assemble and evaluate all existing and readily available water quality-related data and information, including data and information relating to the categories of waters specified in 40 C.F.R. §130.7(b)(5). The State assembled and evaluated, but chose not to use existing and readily available data that were not Level 3 because the State was unable to conclude that this data was "credible," "valid," and "useful for their intended purpose." Consistent with EPA regulations at 40 C.F.R. §130.7(b)(6)(iii), EPA finds that this rationale for the State's decision not to use this data and information as a basis for listing waters is reasonable.

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).

II. Description of Ohio's Submission

Listing Methodology and Reporting.

The waterbodies in Category 5, at Section L4 of Ohio's 2018 IR, constitute Ohio's Section 303(d) list. Ohio's 2018 IR discusses several issues that impact Ohio's assessment program. The 2018 IR includes open water assessment units (previously added to the 2016 IR Amendment) for Lake Erie in addition to the previous shoreline assessment units. The most significant additions to the 2018 303(d) list are 1) the PDWS Use impairment in the Western Basin shoreline, and 2) the PDWS Use impairment of the Sandusky Basin shoreline, which is a new AU.[6] Several sections of the 2018 IR are not discussed in this decision document because they do not represent a significant departure from past monitoring and assessment practices.

Section C of the 2018 IR: Managing Water Quality.

Section C provides an update of various surface water quality management programs and Ohio's Lake Erie programs.[7] Each of the Areas of Concern (AOCs) has had reduction or progress

[6] On May 04, 2018, Ohio EPA amended its 2016 IR to include listings of the Western Basin open waters, and Islands Shoreline of Lake Erie as impaired for recreational use due to algae; Ohio also listed the open waters of the Western, Sandusky Bay area, and Central Basins as impaired for PDWS use. On May 10, 2018, EPA approved Ohio's 2016 IR Amendment.
[7] 2018 IR, p. C6-10.

toward reduction of Beneficial Use Impairments (BUIs) since the last listing cycle. These efforts include the ongoing Remedial Action Plans (RAPs) in the AOCs in the Maumee, Black, Cuyahoga and Ashtabula Rivers, all of which flow into Lake Erie. Environmental restoration projects for these tributary rivers are funded under the Great Lakes Restoration Initiative and the Great Lakes Legacy Act (GLLA) to reduce nutrient loadings to Lake Erie, remove contaminated sediments, restore habitat, remove dams, and achieve other water-quality related aims, with the ultimate goal of reducing the BUIs for the AOCs.

Another program highlighted in Section C of the 2018 IR is the Lake Erie Lakewide Action and Management Plan (LAMP) (formerly LaMP), which is focused on loading reductions and restoration of beneficial uses. The Lake Erie LAMP initially concentrated on the reduction of toxic chemical pollutants, but now includes a focus on Nonpoint Source (NPS) and pollutants such as nutrients and habitat alteration. The LAMP outlines management actions needed to assist Lake Erie and its beaches in restoring and maintaining their chemical, physical and biological integrity. The Great Lakes Water Quality Agreement between the United States and Canada (amended in 2012), 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 nearshore monitoring to support a more integrated nearshore monitoring framework. Annex 4 of the GLWQA addresses nutrient loadings to Lake Erie and establishes an interim target for total phosphorus of 15 µg/l for the Western Basin and 10 µg/l for the Central and Eastern Basins, as well as a process to develop final loading targets for total phosphorus and an allocation for each country along with domestic action plans to meet the targets.[8]

Since the last listing cycle, an important issue has been addressed regarding Ohio's TMDL program. On March 24, 2015, the Ohio Supreme Court in *Fairfield Cty. Bd. of Commrs. v. Nally,* 143 Ohio St.3d 93, 2015-Ohio-991[9] stated Ohio EPA must follow the rulemaking procedure under State law before submitting a TMDL to EPA for approval and ultimately for implementation in an National Pollutant Discharge Elimination System (NPDES) permit. This resulted in a backlog of work on TMDL development at the State. On September 29, 2017, the Ohio General Assembly amended State law to: 1) reinstate previously approved TMDLs; 2) require stakeholder outreach at several points during TMDL development; 3) mandate consideration of several technical and financial items; 4) affirm that TMDLs are not actions of the Director and challenges are made through the NPDES permit appeal process; and 5) require Ohio EPA to adopt administrative rules for stakeholder notification and significant public interest by December 2018.[10]

Ohio Senate Bill 1 was passed in July 2015 directing Ohio EPA to implement actions to protect against cyanobacteria in the Western Basin of Lake Erie and in public water supplies pursuant to ORC §3745.50, which authorized the Ohio EPA Director to serve as the coordinator of harmful

[8] Under Annex 4 of the GLWQA, loading targets for phosphorus were developed in 2015 for Lake Erie; a load reduction plan and adaptive management planning via Domestic Action Plans is ongoing.
[9] This decision is available online at supremecourt.ohio.gov/rod/docs/pdf/0/2015/2015-Ohio-991.pdf.
[10] 2018 IR, p. C-16-17.

algae management and response. Ohio adopted new and revised rules, effective June 1, 2016, to meet these requirements. The rules address "analytical protocols, establishment of health advisories and public notification protocols and triggers, sampling, treatment techniques, algaecide application and reporting requirements."[11] In 2016, Ohio established the Division of Drinking and Ground Waters (DDAGW) to protect groundwater systems and ensure that public water systems supply safe drinking water. Ohio EPA has undertaken a number of interagency and interdivision efforts to protect water systems and has implemented the *Public Water System Harmful Algal Bloom Response Strategy.*[12] Communication with the public includes the website ohioalgaeinfo.com and ODH BeachGuard site at http://publicapps.odh.ohio.gov/BeachGuardPublic/Default.aspx.

Ohio EPA also discusses in this Section of the IR the results of algal toxin monitoring and phytoplankton monitoring at inland lakes and Lake Erie. Microcystin and cyanobacteria screening indicate the occurrence of Harmful Algal Blooms (HABs) across the State.[13] Screening and follow up samples showed:

1. Microcystin-producing genes were detected at 56% of source waters; microcystins were detected at 47% of Ohio's PWS source waters;
2. Saxitoxin-producing genes were detected at 38% of source waters; follow up sampling of saxitoxin screening locations showed 18% of the PWS waters had saxitoxins;
3. Cylindrospermopsin-producing genes were detected at two sites; follow up sampling found Cylindrospermopsin-producing genes only at one site.

Under an Ohio EPA-funded program, charter boat captains collected 151 samples in the Western Basin in 2016 and 146 samples in 2017. Ohio also used NOAA satellite imagery as a tool to confirm the presence of HABs, and to assist with quantification of algal bloom densities.

As in 2016, Ohio EPA reviewed its goals in the 2018 IR relative to the EPA 303(d) Vision Framework of December 2013.[14] The Framework goal is to restore high priority waters identified by each state. The Ohio EPA long term general priorities are to:

- Continue to use a rotating basin schedule for field monitoring but on a more limited basis to allow for increased focus on lakes and protecting downstream uses;
- Sharpen focus on Public Water Supply Use;
- Incorporate HAB considerations into priorities (both PDWS use and ultimately Recreation use);
- Concentrate recreation TMDLs on High-Use recreation waters;
- Continue to make mercury and legacy/sediment metals low-priority TMDLs as other approaches are anticipated to be more effective.

[11] 2018 IR, p. C-21.
[12] 2018 IR, p. C-21.
[13] 2018 IR, p. C-22.
[14] Information for assistance with the CWA 303(d) Program Vision, Benita Best-Wong cover letter dated August 13, 2015.

Section D of the 2018 IR: Framework for Reporting and Evaluation.

Ohio continues to use the designated use framework for assessment of aquatic life, recreation, human health, and PDWS. The IR includes the Lake Erie Assessment Units (LEAUs) for all portions of Lake Erie within Ohio's jurisdiction, and the assessment of the LEAUs for impairment of the State's Recreational Use (RU) due to Algae, as described in the amended 2016 IR and slightly modified in the 2018 IR. Lake Erie assessment units include the open waters of the Western, Central, and Sandusky Basins, and delineation of the Sandusky Bay shoreline (formerly included in the Western Basin shoreline).[15]

The LEAUs are described as follows:[16]
o Western Basin shoreline and open water (OH-MI state line to Marblehead);
o Lake Erie islands shoreline (including South Bass Island, Middle Bass Island, North Bass Island, Kelleys Island, West Sister Island and other small islands);
o Sandusky Basin shoreline and open water (Marblehead to Lorain Ridge); and
o Central Basin shoreline and open water (Black River/Lorain Ridge to OH-PA state line).[17]

Section D6 of Ohio's 2018 IR discusses the public involvement in compiling the 2018 303(d) list and summarizes public comments Ohio received on its draft 2018 IR, and responses provided by Ohio EPA. The formal comment period extended from March 23, 2018 through May 4, 2018. The Notice is included in the 2018 Integrated Report in Section D6.1. Section D6.1.1 includes instruction for Level 3 Credible Data and entities and agencies that have contributed data.

Public Comments:

Copies of the full public comments, and a responsiveness summary of the comments received and the State's responses were included in the submittal package to EPA. Comments received primarily focused on the following topics: general comments, those related to the monitoring schedule, and those related to Lake Erie. Public comments received and Ohio EPA's responses are included in Section D6.3.1 and D6.3.2 of the IR.

EPA has reviewed the public comments received and Ohio EPA's responses, and concludes that Ohio EPA adequately addressed the public comments received insofar as they raised any concerns about the State's listing obligations under Section 303(d) and EPA's implementing regulations.

[15] Ohio EPA has redefined the shoreline, to include waters ≤ 3 meters in depth, and open waters are defined as those waters > 3 meters in depth.
[16] 2018 IR, Section D1.
[17] 2018 IR, p. D-2.

Section F of the 2018 IR: Evaluating Beneficial Use - Recreation.

Recreational Use E. coli

Ohio revised its WQS for *E. coli,* which became effective in February 2017 and approved by EPA in June 2017. The standards were moved from OAC §3745-1-07 to §3745-1-37. The revised recreational WQS are based on the protected use associated with the various waterbody types (bathing waters and primary/secondary contact waters) (Table F-1 below). The Statistical Threshold Value (STV) replaces the past single sample maximum methodology.[18]

Table F-1 — Summary of the RU assessment methods.

Bathing Waters		
Indicator	**Criterion (Table 37-2, OAC 3745-1-37)**	**Assessment Method Summary**
E. coli	Geometric mean *E. coli* content* based on samples collected within a 90-day period during the recreation season within a calendar year is 126 cfu/100 mL; statistical threshold value (STV) is 410 cfu/100 mL.	Applied to the four Lake Erie shoreline assessment units and inland lake beaches, exceedance of the geometric mean bathing water criterion or an exceedance of the STV in more than 10 percent of the samples collected during a 90-day period is considered an impairment of the bathing water use, where sufficient data are available**.
Primary Contact and Secondary Contact		
Indicator	**Criterion (Table 37-2, OAC 3745-1-37)**	**Assessment Method Summary**
E. coli	Geometric mean *E. coli* content* based on samples collected within a 90-day period during the recreation season within a calendar year is as follows: Primary Contact Waters 90-day Geometric Mean: 126 cfu/100 mL STV: 410 cfu/100 mL Secondary Contact Waters 90-day Geometric Mean: 1,030 cfu/100 mL STV: 1,030 cfu/100 mL	Applied to streams and inland lake non-beach sites. Data collected within a 90-day period in the recreation season are assessed on a site-by-site basis and compared to the applicable geometric mean and STV *E. coli* criteria whenever sufficient data** are available for the site. Assessment units (AUs) are in full attainment if all sites assessed within the AU meet both the applicable geometric mean and STV criteria and in non-attainment if one or more sites assessed within the AU exceed the applicable geometric mean or STV criteria.

E. coli concentrations are expressed in colony forming units (cfu) per 100 milliliters (mL)
** Five or more samples collected within a 90-day period.

In contrast to Ohio's bathing water recreational use criteria, beach advisory recommendations are based upon a single sample maximum *E. coli* criterion, using the federal bacteria rule promulgated pursuant to the BEACH Act.[19] Section F of the 2018 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 threshold for triggering the issuance of beach advisories has been used since 2006.

Table F-11 below shows Ohio's 65 Lake Erie beaches divided into the four geographical areas. The percentage of days in exceedance of the *E. coli* single sample maximum criterion from 2013 to 2017 was as follows: 15.4% for the Western Basin, 20.2% for the Central Basin, 25.3% for the Sandusky Basin, and 3.9% for the Lake Erie Islands.

[18] The STV represents the 90th percentile of the samples collected in the 90-day period (five or more samples) that cannot be exceeded in more than 10% of the samples.
[19] Water Quality Standards for Coastal and Great Lakes Recreation Waters, 69 Fed. Reg. 67217 (Nov. 16, 2004).

Table F-11 — Aggregated exceedance frequencies at 65 Lake Erie public beaches from 2013-2017 (pooled by Lake Erie shoreline AU to report use support).

	Western Basin	Central Basin	Sandusky Basin	Lake Erie Islands
Number of beaches	7	30	26	2
Total recreation days	3,535	14,857	13,561	1,026
Total days in exceedance	546	3,005	3,426	40
Percentage of days in exceedance	15.4%	20.2%	25.3%	3.9%
Total beach seasons[1]	35	148	129	10
Average # of days *E. coli* BAV exceeded per beach per season[2]	15.6	20.3	26.6	1.0
Number of beaches exceeding 90-d geomean one or more years during reporting cycle[3]	5	22	14	1
Number of beaches exceeding STV within a 90-day period in one or more years during the reporting cycle[3]	5	30	25	2
Attainment status	Does not support	Does not support	Does not Support	Does not Support

[1] 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 2013-2017 reporting period.
[2] Calculated by dividing the total days in exceedance in the basin by the total number of beach seasons in the basin.
[3] Used to determine attainment status.

Table F-13 below shows the *E. coli* results for the five most recent listing cycles for rivers and streams in Watershed Assessment Units (WAUs). For the 170 AUs analyzed for the 2018 IR, shown in the last two columns, 8% fully supported RU with respect to *E. coli* while 92% did not.

Table F-13 — Overall differences in the assessment of RU attainment, 2010-2018.

	2010 Report		2012 Report		2014 Report		2016 Report		2018 Report	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total AUs[a]	1,576	100	1,576	100	1,576	100	1,576	100	1,576	100
Assessed	487	31	588	37	680	43	713	45	170	11
Not Assessed	1,089	69	988	63	896	57	863	55	1,406	89
Supporting Use[b]	65	13	88	15	130	19	73	10	14	8
Not Supporting Use[b]	422	87	500	85	550	81	640	90	156	92

[a] Includes LRAUs.
[b] Note: The percentage of AUs reported as supporting the RU and not supporting the RU are based on the total AUs that were assessed (e.g., 187 in the 2018 analysis).

Beaches at inland lakes are tested less frequently compared to Lake Erie beaches. The overall frequency of exceedances at inland lakes was 13.8% in the most recent five-year reporting period, an increase from 12.4% reported in the 2011-2015 reporting period. There were 28 inland lake beaches where the aggregated exceedance frequency was over 10 percent. The highest frequency was 66% at Brooks Park beach, and 60% at Crystal Beach, both located at Buckeye Lake. There were 13 beaches that exceeded the bathing water *E. coli* criteria over 25 percent of the time over the five-year reporting period total.[20]

Recreational Use Algae - Western Basin

Prior to its amended 2016 list, Ohio assessed for RU based solely on the presence of bacteria. In the current listing cycle, the methodology includes the assessment of RU impairment in the

[20] Site specific data and discussion can be found at 2018 IR, Section F3.3.

Western basin of Lake Erie related to algae.[21] In its assessments prior to its amended 2016 list, Ohio EPA assessed three Lake Erie AUs-the Western Basin, Central Basin, and Lake Erie Islands Shorelines. For its 2016 IR Amendment, Ohio EPA added the Western, Central and Sandusky Basin Open Waters AUs for 303(d) assessment purposes. The Sandusky Basin Shoreline AU was added in the 2018 IR (Table F-18 and Figure F-7 from the 2018 IR below). Table F-18 below describes details of the map of the new AUs in Figure F-7. The Central Basin Shoreline and Open Water AUs extend eastward to the border of Pennsylvania.

Table F-18 — Proposed Ohio Lake Erie AUs.

AU Code	AU Name	Description
041202000201	Western Basin Shoreline (W1)	Lake Erie shoreline from the MI/OH state line to the west side of Catawba Island at depths ≤3m, including Maumee Bay
041202000301	Western Basin Open Waters (W2)	Lake Erie open water from the MI/OH state line to a line between the Marblehead Lighthouse and Pelee Point at depths >3m (U.S. waters only)
041202000100	Islands Shoreline (I1)	Lake Erie island shorelines from the west side of Catawba Island to the Marblehead Lighthouse at depths ≤3m and including, but not limited to the following Islands; West Sister, Bass and Kelleys
041202000202	Sandusky Basin Shoreline (S1)	Lake Erie shoreline from the Marblehead Lighthouse to the Black River at depths ≤3m, including Sandusky Bay
041202000302	Sandusky Basin Open Waters (S2)	Lake Erie open water from a line between the Marblehead Lighthouse and Pelee Point to the Lorain Ridge at depths >3m (U.S. waters only)
041202000203	Central Basin Shoreline (C1)	Lake Erie shoreline from the Black River to the OH/PA state line at depths ≤3m
041202000303	Central Basin Open Waters (C2)	Lake Erie open water from the Lorain Ridge to the OH/PA state line at depths >3m (U.S. waters only)

[21] 2018 IR, Section F.4.

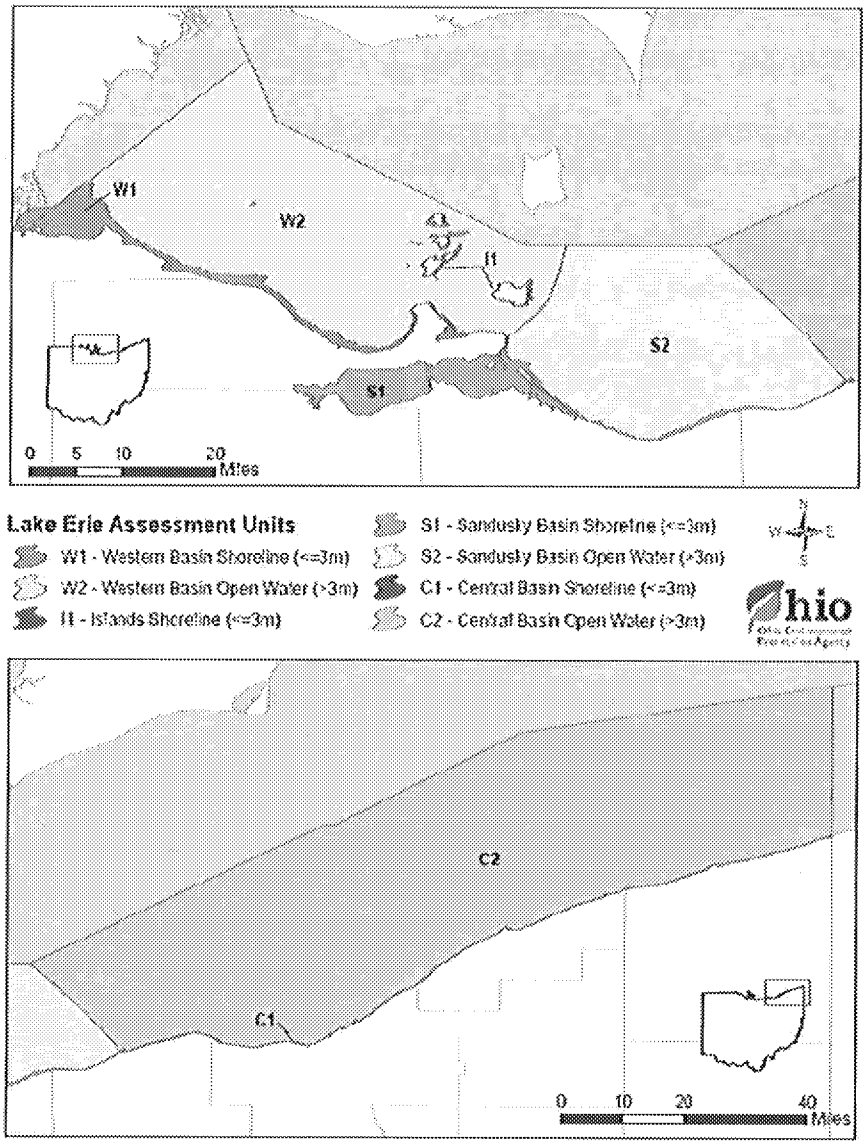

Figure F-7 — New Ohio Lake Erie AUs

Ohio included a table and map of all the sampling sites and sampling frequency for data available from entities that have Level 3 credible data or will be acceptable in the future to have Level 3 data.[22] Table F-19 in the 2018 IR also includes many types of data beyond phosphorus/nutrient and chlorophyll-a, such as phytoplankton, zooplankton, picoplankton, biovolume, species, DNA and taxa for a better understanding of the physical attributes and extent of the algal presence.

[22] 2018 IR, Figure F-8, p. F-30, Table F--19, p. F-31-33.

For the 2018 IR, Ohio EPA used its narrative standards to determine RU impairment due to algae. Ohio EPA narrative water quality standards found in OAC §3745-1-04 state that all surface waters be:

> *(D) Free from substances entering the waters as a result of human activity in concentrations that are toxic or harmful to human, animal or aquatic life or are rapidly lethal in the mixing zone.*
> *(E) Free from nutrients entering the water as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae.*

In order to have a quantitative and objective method for assessing attainment with these narrative water quality standards, metrics were developed by Ohio EPA in consultation with the Ohio State University Sea Grant Program, the University of Toledo, Bowling Green State University and NOAA. Satellite imagery from NOAA had been generated in the recent past (using the Moderate Resolution Imaging Spectroradiometer – MODIS), and values were determined based on targets developed under Annex 4 of the GLWQA.[23] The determination of attainment of the narrative water quality standard is based on two algal measurements:

- algal bloom not to exceed that which occurred in 2004 or 2012 (based on linkage with phosphorus loading); and
- algal cell count not to exceed 20,000 cells/ml (based on higher likelihood that cyanobacteria cell count would produce *Microcystis* blooms).

Related to quantifying the extent of the bloom, Ohio EPA stated:

> To account for the way that algal blooms shift in time and space in a large water body like the western basin, the method developed is as follows:
> • In each 10-day frame, an exceedance means that a bloom with greater than 20,000 cells/mL covers (is present in) more than 30 percent of the western basin open water unit area
> • If more than three 10-day frames have an exceedance in one year (July-Oct.), then that year exceeds the goal (is above the threshold target of the 2004 and 2012 blooms under Annex 4 of the GLWQA)
> • Because of the year-to-year variation, if any two or more years in a rolling six-year window exceeds the goal (is above the threshold target of the 2004 and 2012 blooms under Annex 4 of the GLWQA) then the unit is impaired.... The threshold of 30 percent coverage is based on an examination of the bloom coverage in Lake Erie's western basin since 2002 and which blooms were considered to meet the Annex 4 target severity index (the Target Bloom in Figure F-9). Severity Index (SI) is the measure of the peak bloom biomass over a 30day period (in each year, whichever 30-days captured/represents the most biomass in that year).[24]

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[23] Recommended Phosphorus Loading Targets for Lake Erie, Annex 4 Objectives and Targets Task Team Final Report to the Nutrients Annex Subcommittee (May 11, 2015, available at https://www.epa.gov/sites/production/files/2015-06/documents/report-recommended-phosphorus-loading-targets-lake-erie-201505.pdf.
[24] 2018 IR, pp. F-34, 35.

For quantification of the cell count, Ohio EPA stated[25]:

> Within each 10-day frame, an average percent coverage by a bloom at 20,000 cell/mL or greater was calculated for the western basin open water assessment unit (W2 in Figure F-7). In the western basin, blooms typically begin developing by July 22 and peak between August 10 and September 18 (Wynne and Stumpf, 2015). The 10-day time frames used in the assessment method are:
>
> July 1 – July 10 Aug. 30 – Sept. 8
> July 11 – July 20 Sept. 9 – Sept. 18
> July 21 – July 30 Sept. 19 – Sept. 28
> July 31 – Aug 9 Sept. 29 – Oct. 8
> Aug. 10 – Aug. 19 Oct. 9 – Oct. 18
> Aug. 20 – Aug. 29 Oct. 19 – Oct. 31

The results from the methodology yielded a finding of impairment as shown below in Table F-20 from the 2018 IR.

Table F-20 — The number of 10-day time frames exceeding the 30 percent coverage threshold (with 20,000 cells/mL or greater) in the western basin open water unit for each year beginning in 2012.

	≥30% coverage at ≥20,000 cell/mL	
Year	10-day frames exceeding	total frames
2012	2	12
2013	10	11
2014	6	12
2015	9	11
2016	5	10
2017	7	11

Section G of the 2018 IR: Evaluating Beneficial Use – Aquatic Life Use (ALU).

ALU scores overall are summarized below, using data from 2003-2016:

- WAU sites achieving full attainment increased from 59.3% to 61.8% for the HUC 12 assessments.
- Larger River Assessment Unit (LRAU) miles achieving full attainment was almost unchanged from 87.4% to 87.3%.
- LEAU sites in full attainment increased to 17.0% from 13.3% in the last listing cycle, but for the first time included the Sandusky Bay shoreline, defined as the area between the Central and Western Basin shorelines, as impaired for ALU.

Ohio also provided a breakdown of attainment in watersheds based on watershed size, subcategories of ALU such as Exceptional Warmwater Habitat (EWH) through Limited

[25] 2018 IR, p. F-35.

Resource Waters (LRW), and the top five prevalent causes of ALU impairment (siltation/sedimentation, habitat modification, nutrient enrichment, organic enrichment, and hydromodification).[26]

Lake Erie sampling included 131 fish community collections at 47 sites from 2011-2016. The current cycle impairment values showed that of the 47 sites, only nine are fully attaining the designated EWH ALU. This assessment includes the new assessment units for Lake Erie. Ohio compared recent data collected in 2011-2016 and other electrofishing results from the 1900s and early 2000s, and in general did not find a great difference in medians and ranges in the Index of Biological Integrity (IBI) and Modified Index of Well-Being (MIwb) indices. The IR stated that the largest changes were linked to Lake Erie Island shoreline sites, but that the results are not conclusive due to the small sample sizes. The IR observed that there appears to be a significant change in the proportion of exotic species to native species (i.e. changing the original biotic community).

A breakdown of results reflects the following site attainment status for each of the LEAUs (fish community assessments).

AUID	AU Name	# Sites	# Full	# Partial	# Non
041202000201	Lake Erie Western Basin Shoreline (including Maumee Bay)	9	3	0	6
041202000301	Lake Erie Western Basin Open Water	0	0	0	0
041202000101	Lake Erie Islands Shoreline	4	0	1	3
041202000202	Lake Erie Sandusky Basin shoreline	14	5	5	4
041202000302	Lake Erie Sandusky Basin open water	0	0	0	0
041202000203	Lake Erie Central Basin shoreline	20	1	5	14
041202000303	Lake Erie Central Basin open water	0	0	0	0

Section H of the 2018 IR: Evaluating Beneficial Use: Public Drinking Water Supply.

Attainment determinations for the PDWS Use are based on nitrate, pesticide, other contaminants, algal cyanotoxins, and *Cryptosporidium* indicators. Ohio EPA measures both ambient and treated water collected from 2010 through October 2017.

- For the 2018 IR, Ohio has assessed seven and listed six of the LEAUs of the Lake Erie Shoreline, Islands, and Open Waters assessment units for PDWS use impairment (the seventh AU is not used for public drinking water supply). The AUs are impaired for PDWS use due to microcystin levels measured above threshold values of 1 µg/L. Details of the water quality data and locations of the communities are in Table H-2 in the 2018 IR.[27]
- Western Basin Shoreline – two public water systems (PWS) had at least two raw water sample microcystin exceedances.
- Western Basin Open Waters – four PWS systems had at least two raw water sample microcystin exceedances.

[26] 2018 IR p. G-12.
[27] 2018 IR, pp. H-12 to H-17.

- Lake Erie Islands Shoreline – three PWS had at least two raw water sample microcystin exceedances.
- Sandusky Basin Shoreline – one PWS had a least two raw water sample microcystin exceedances.
- Sandusky Basin Open Waters – two PWS had a least two raw water sample microcystin exceedances.
- Central Basin Open Waters – four PWS had at least two raw water sample microcystin exceedances.

Outside of Lake Erie, new PDWS impairment determinations were included for other waterbodies due to microcystin, cylindrospermopsin, and saxitoxin exceedances (Table H-2).

Section I of the 2018 IR: Considerations for Future Lists.

Ohio updated information regarding the assessment of Lake Erie, including samples collected and a map of sampling sites from the University of Toledo and the Ohio State University/Stone Laboratory.[28] Future actions toward assessment and listing of LEAUs are in alignment with ecosystem objectives for Lake Erie as described in the GLWQA. The sampling of open waters is funded to supplement other existing data used for assessment and potential listing as well as to include four sites in Sandusky Bay for the next two years. Entities will work with Ohio EPA to ensure the data are credible Level 3, to be used in conjunction with satellite imagery from NOAA, to provide a comprehensive assessment method for algal blooms in the open waters for future 303(d) lists, especially to monitor and quantify areal extent and microcystin metrics. NOAA continues to collect data at seven sites in Ohio waters, and the Northeast Ohio Regional Sewer District collects data at eight sites in the Central Basin. Ohio EPA indicates that there will be ongoing collaboration amongst Ohio EPA and state, federal, and local partners and universities in sampling as well as refining assessment methodology.

[28] 2018 IR, p. I-20.

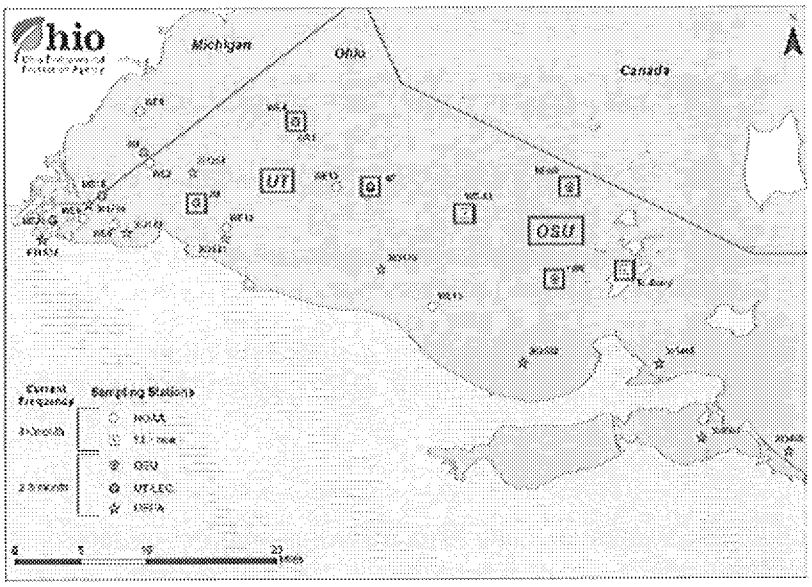

Figure J-1 — Supplemental weekly sampling locations for chlorophyll and microcystin; sampled by University of Toledo and the Ohio State University/Stone Laboratory (boxed sites) researchers in 2017.

Section J of the 2018 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 program and schedule for TMDL development and monitoring. Table J-1 below shows the attainment and listing categories. The 2018 IR includes a new listing category 5p, for protection/preservation of threatened waters, primarily for nutrients.

Table J-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[3] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[4]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

Priority Ranking and Targeting

Ohio has included a discussion of its prioritization process for TMDL development in Sections C and J of the IR, which uses a points-based system that considers the "presence and severity of Human Health impairment, Recreation Use impairment, Public Water Supply impairment and Aquatic Life Use impairment."[29]

Section J2 describes how Ohio increased the priority of the impaired AUs. Extra priority points are given for:

- social factors (high use recreational waters, drinking water supply for large populations, sustained involvement by local groups or government);
- value added (whether a TMDL offers the best way to achieve water quality);
- implemented projects/approved watershed plan;
- alternatives more timely than a TMDL;
- regulatory authority over sources; and,
- other factors (pending enforcement, Corps modeling of a reservoir, local or state strategy such as new rules for home sewage treatment systems).

EPA agrees that, as to the WQLSs included on the 2018 Section 303(d) list, OEPA has satisfied the requirement to submit a priority ranking consistent with EPA's regulations.

Figure J-2 below reflects changes from previous IRs with the addition of the "Recreation LEAUs" that apply to the Lake Erie algal impairments, in addition to the previous recreational use impairments due to excess bacteria impacting primary and secondary contact in WAUs and LWAUs.

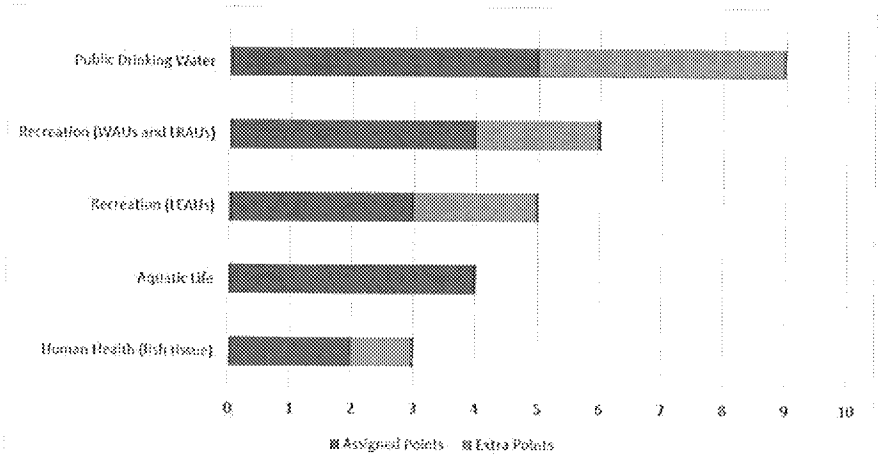

Figure J-2 — Priority points assigned based on use impairment or other factors (extra points).

[29] 2018 IR, p. C-29.

Ohio used a point system in Section J2 of the IR to assign priority to the Lake Erie Assessment Units. That section also discusses how Ohio is developing TMDLs for Lake Erie tributaries as well as many other actions for Lake Erie outlined in Section J3. Lake Erie impaired waters are assigned a low priority for Ohio EPA-initiated TMDLs. As Ohio acknowledges in Section J4, TMDLs are "need[ed]" (i.e. required) for the Lake Erie Assessment Units so long as they remain on the State's 303(d) list. However, states have "considerable flexibility" in deciding when to develop a TMDL based upon the circumstances, particularly for segments that have only recently been added to the list.[30] Furthermore, EPA has explained that "[i]n some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the applicable standard is met)."[31] And so, if efforts such as those described in Section J3 result in the attainment of water quality standards prior to the development of a TMDL, then Ohio may remove those impaired segments from its 303(d) list and a TMDL will no longer be required. But as Ohio EPA observes, where its current efforts to reduce nutrient pollution into Lake Erie, including TMDL development for the Lake's tributaries, are not sufficient to achieve standards, "Ohio will be working with U.S. EPA and other partners to determine next steps."[32] EPA expects that under those circumstances such "next steps" would include TMDL development for the Lake Erie Assessment Units directly.

Ohio EPA also received comments from the public that it should prioritize implementation of TMDLs for the Western Basin of Lake Erie, for either the waters of the Lake and/or the Western Lake Erie watersheds. In response, Ohio EPA described its plans for TMDL development in the near term, including its prioritization of TMDLs for the western basin tributaries, and indicated it will evaluate the need to update older TMDLs in its administrative planning process. The State also referenced the explanation in the IR regarding why a TMDL is not being pursued for the Lake immediately, and that it clearly indicates the western basin load reductions are a priority for the agency and the State. EPA finds these responses to be reasonable, and concludes that Ohio EPA has satisfied the requirement to submit a priority ranking for Lake Erie consistent with the regulations at 40 C.F.R. §130.7(b)(4).

Addition and Removal of Waters from the 303(d) List

Section J of the 2018 IR describes the delisting or addition of waters from the 2016 303(d) list. Table J-5 below shows both delisting and listing of new waters in Ohio's 2018 303(d) list. The new recreational use additions to the 303(d) list greatly increased from 68[33] to 261 in WAUs.

[30] EPA's Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act (July 29, 2005), p. 63.
[31] Ibid., p. 57.
[32] 2018 IR, p. J-12.
[33] Compared to Table J-5 in the 2016 IR.

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

	Number of AUs			
	Watershed	Lake Erie	Lake Erie	Total
Delistings (Remove from 303(d) list)				
Human Health (fish tissue)	15	0	0	15
Recreation	37	1	0	38
Aquatic Life	76	2	0	78
Public Drinking Water Supply	1	0	0	1
Total	130	3	0	132
New Listings (Add to 303(d) list)				
Human Health (fish tissue)	21	0	0	21
Recreation	261	3	0	264
Aquatic Life	31	0	0	31
Public Drinking Water Supply	11	0	2	13
Total	326	3	2	329

Ohio removed waters from its 303(d) list because of 1) a flaw in original listing; 2) new data showing that the waters are meeting the WQS; or 3) new AUs.[34] In evaluating the reasonableness of the State's decision to remove these waters, EPA has evaluated the State's delisting rationale, and information made available to the public during the public notice and comment period, and concludes that the State has demonstrated good cause for removing these waters.

Short term schedule

The 2018 IR included Ohio's short-term schedule for TMDL development for all waters on the State's Category 5 list in Table J-13 of Section J.[35] The TMDLs are expected to be completed in 2019.

EPA reviewed the State's identification of WQLSs targeted for TMDL development and concludes that the State has specifically identified waters targeted for TMDL development in the next two years as required by 40 C.F.R. §130.7(b)(4).

Long term schedule

The 2018 IR discussed Ohio's long-term schedule for TMDL development for all waters on the State's Category 5 list of impaired waters. Because Ohio has had some delay in its submittal of TMDLs due to the court decision referenced above, Ohio is committing staff resources to reduce the resultant backlog of TMDLs, and less frequent waterbody field monitoring events are planned for the near future, to allow the TMDL report backlog to be reduced.

[34] 2018 IR, Tables J-5, J-6, J-7, J-8, J-9 and J-10, pp. J-21-25.
[35] 2018 IR, Section J, Table J-13, p. J-33.

Section L of the 2018 IR: Summary Tables of Waterbody Conditions; Lists of Prioritized Impaired Waters; and Monitoring and TMDL Schedules

This Section includes the waters included on Ohio's 2018 impaired waters list. The most significant change in the amended 2016 IR was the addition of the last three AUs in the table below for the open waters of Lake Erie. These AUs are included in the 2018 IR. The 2018 IR has a total of seven Lake Erie AUs due to the addition of the Sandusky Shoreline, which was previously part of the Western Basin Shoreline AU.

Section L3. Status of Lake Erie Assessment Units							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recreation	Aquatic Life	PWS Supply	Priority Points
041202000101	Lake Erie Islands Shoreline (≤3m)	4.99	5	5	5	5	14
041202000201	Lake Erie Western Basin Shoreline (≤3m)	47.88	5	5	5	5	17
041202000202	Lake Erie Sandusky Basin Shoreline (≤3m)	68.01	5	5	5	5	16
041202000203	Lake Erie Central Basin Shoreline (≤3m)	13.39	5	5	5	0	9
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
041202000302	Lake Erie Sandusky Basin Open Water (>3m)	361.71	3i	3	3	5	5
041202000303	Lake Erie Central Basin Open Water (>3m)	2544.98	3i	3	3	5	5

Conclusion

After full review and evaluation of the information presented by the State in its 2018 submittal, EPA is approving the waters identified in Section L4 of Ohio's 2018 IR as impaired waters still requiring TMDLs. EPA is taking action on the list of Category 5 waters for which available data and/or information indicate that at least one designated use is not being supported or is threatened, and for which a TMDL is still required. Although the information was considered in EPA's review, EPA is not taking any action to approve or disapprove waters identified in Ohio's 2018 IR in categories 1, 2, 3, and 4 in this decision, which does not affect EPA's approval of Ohio's 2018 list of impaired waters still requiring TMDLs.

References

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Message

From: cathy.alexander@epa.ohio.gov [cathy.alexander@epa.ohio.gov]
Sent: 6/28/2018 3:56:42 PM
To: Tiffani.Kavalec@epa.ohio.gov; Swenson, Peter [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eaf7e8d916134568ba23121a89260045-PSwenson]
CC: Chruscicki, Jean [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=51f931addb274ebcad5499fa89ed015f-JChrusci]; Melinda.Harris@epa.ohio.gov; rahel.babb@epa.ohio.gov
Subject: Typo in the 2016 IR Amendment: Section L3 LEAU number for the Central Basin
Attachments: Section L3_revised_2018_3NewUnits_correction.docx

It was just noticed that the 2016 IR Amendment Section L3 table submitted to U.S. EPA on 5/4/18 had one number wrong. The central basin open water number should have been 0410202000303 rather than 0410202000302. The attached table is the corrected version.

Fortunately, the L4 table, which is the official 303(d) list, was correct. Please let me know if you think we need to send a more formal correction or if this will suffice to set the record straight.
Sincerely,
Cathy

Cathy Alexander, P.E., Manager
Assessment and Modeling Section
Division of Surface Water, Ohio EPA
50 West Town Street, Suite 700
Columbus, Ohio 43215
Phone: 614-644-2021

From: Babb, Rahel
Sent: Thursday, June 28, 2018 11:04 AM
To: Alexander, Cathy <cathy.alexander@epa.ohio.gov>
Subject: Section L3_revised_2018_3NewUnits_correction

Hi Cathy,

The corrected table is attached.

Rahel

Start Talking!
Building a Drug-Free Future

Did You Know: Children of parents who talk to their teens about drugs are up to 50% less likely to use. Start the conversation: StartTalking.Ohio.Gov

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Section L3. Status of Lake Erie Assessment Units

Assessment Unit	Assessment Unit Name	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points	Next Field Monitoring
24001 003	Lake Erie Islands Shoreline	5	5	5	5	10	2018
24001 002	Lake Erie Central Basin Shoreline	5	5	5	0	9	2018
24001 001	Lake Erie Western Basin Shoreline (including Maumee Bay and Sandusky Bay)	5	5	5	0	9	2018
0410202000301	Lake Erie Western Basin Open Water	3	5	3	5	8	2018
0410202000302	Lake Erie Sandusky Bay area Open Water	3	3	3	5	5	2018
0410202000303	Lake Erie Central Basin Open Water	3	3	3	5	5	2018

Message

From: Melinda.Harris@epa.ohio.gov [Melinda.Harris@epa.ohio.gov]
Sent: 6/12/2018 3:02:16 PM
To: Chruscicki, Jean [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=51f931addb274ebcad5499fa89ed015f-JChrusci]; cathy.alexander@epa.ohio.gov
Subject: RE: Question p G15 IR re exotic fish

Jean,

In this case, exotic means coming from outside of the native community.

Please let us know if you need anything else.

Have a great day,
Melinda

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

Ohio Environmental Protection Agency

From: Chruscicki, Jean <chruscicki.jean@epa.gov>
Sent: Friday, June 08, 2018 4:19 PM
To: Alexander, Cathy <cathy.alexander@epa.ohio.gov>; Harris, Melinda <Melinda.Harris@epa.ohio.gov>
Subject: Question p G15 IR re exotic fish

Page G 15 below - I am not sure if you mean there are more exotic fish, and whether that is good or bad. Does exotic mean special and good habitat for them, or coming from outside of the community and taking over the current community? Apologies if this is a dumb question, I have been looking at this too long.
Thanks,
Jean

One Lake Erie IBI component metric which did seem to reflect a significant change across the two timespans was the proportion of exotic species by numerical abundance in each sampling pass.

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Message

From: cathy.alexander@epa.ohio.gov [cathy.alexander@epa.ohio.gov]
Sent: 6/12/2018 12:27:04 PM
To: Chruscicki, Jean [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=51f931addb274ebcad5499fa89ed015f-JChrusci]
Subject: RE: Question p G15 IR re exotic fish

Will try to get an answer to you today (I think it's bad but Melinda will check with biologists to be sure)

From: Chruscicki, Jean <chruscicki.jean@epa.gov>
Sent: Friday, June 08, 2018 4:19 PM
To: Alexander, Cathy <cathy.alexander@epa.ohio.gov>; Harris, Melinda <Melinda.Harris@epa.ohio.gov>
Subject: Question p G15 IR re exotic fish

Page G 15 below - I am not sure if you mean there are more exotic fish, and whether that is good or bad. Does exotic mean special and good habitat for them, or coming from outside of the community and taking over the current community? Apologies if this is a dumb question, I have been looking at this too long.
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Jean

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

JUL 0 9 2018

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

Re: Approval of 2018 Clean Water Act (CWA) Section 303(d) List

Dear Ms. Kavalec:

The U. S. Environmental Protection Agency conducted a complete review of the Ohio Environmental Protection Agency (Ohio EPA's) 2018 CWA Section 303(d) list and supporting documentation and information. Based on this review, EPA determined that Ohio EPA's 2018 list of water quality limited segments still requiring Total Maximum Daily Loads (TMDLs) meets the requirements of Section 303(d) of the CWA and EPA's implementing regulations. Ohio EPA's 2018 Integrated Report also included an updated priority ranking of Ohio's impaired waters still requiring TMDLs. EPA finds that Ohio EPA's discussion of prioritization of its waters, including for Lake Erie, satisfies the requirement to submit a priority ranking consistent with EPA's regulations. *See* 40 C.F.R. 130.7(b)(4). Therefore, EPA hereby approves Ohio EPA's 2018 CWA Section 303(d) list.

The statutory and regulatory requirements, and EPA's review of Ohio's compliance with each requirement, are described in the enclosed decision document.

If you have any questions please contact Mr. Peter Swenson, Chief, Watersheds and Wetlands Branch, at 312-886-0236.

Sincerely,

Linda Holst

Linda Holst
Acting Division Director
Water Division

Enclosure

cc: Cathy Alexander, Ohio EPA

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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 Environmental Protection Agency's (Ohio EPA) 2018 Section 303(d) list and supporting documentation and information. Based upon this review, EPA is approving Ohio's list of Water Quality Limited Segments (WQLS) still requiring total maximum daily loads (TMDLs) under Section 303(d) of the Clean Water Act (CWA or "the Act") and EPA's implementing regulations. Ohio's list appears in Category 5 of the Ohio 2018 Integrated Water Quality Monitoring and Assessment Report (2018 Integrated Report or 2018 IR), and EPA's approval extends only insofar as waterbodies are listed or not in Category 5 of the 2018 Integrated Report.[1] The statutory and regulatory requirements are described in detail below.

For the 2018 list, Ohio identified a new Sandusky Basin shoreline assessment unit (AU), which was previously part of the Western Basin shoreline. The Sandusky Basin shoreline AU is located between the Western Basin and Central Basin shorelines. Ohio EPA has listed the Sandusky Basin shoreline AU for all four of Ohio's designated uses: Human Health (HH), Recreation Use (RU), Aquatic Life Use (ALU), and Public Drinking Water Supply (PDWS). EPA is approving these listings. EPA is also approving Ohio EPA's listing of the Western Basin shoreline for PDWS, which was not included on its amended 2016 list. The bases for these listings are summarized in Section F, H and L of the 2018 IR.

EPA concurs that Ohio's submission accurately reflects the excess of algal indicators of impairment in both the open waters and shoreline AUs of Ohio's portion of Lake Erie, and provides the details of the assessment methodology to determine these impairments, as described in the 2018 IR and within this document.

EPA also concurs with Ohio's revision of its definitions of shoreline AUs to extend to ≤3 meters in depth.[2]

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 their jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) of the Act are not stringent

[1] Ohio EPA, Ohio 2018 Integrated Water Quality Monitoring and Assessment Report (June 2018), available at http://www.epa.ohio.gov/dsw/tmdl/OhioIntegratedReport#1798510016-report

[2] The 2016 IR Amendment included new open water AUs for the Western, Sandusky Bay, and Central Basins. The shoreline AUs were defined as extending 100 meters from the shoreline and 500 yards from drinking water supply intakes, but were revised in the 2018 IR. The Sandusky AU change between the 2016 IR Amendment and the 2018 IR resulted in the Sandusky Basin shoreline and Western Basin shoreline listings for PDWS in the 2018 IR.

enough to implement any applicable water quality standard (WQS), 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) of the Act.

EPA's implementing regulations require states to submit biennially a list identifying WQLSs still requiring a TMDL (40 C.F.R. §§130.7(b)(1), 130.7(d)). 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)).

Evaluation 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, 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 assemble and evaluate any other existing and readily available data and information. EPA's guidance describes categories of water quality-related data and information that may be existing and readily available.[3] 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 not use 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)).

The Ohio 303(d) list of prioritized impaired waters (i.e., Category 5 of the 2018 Integrated Report) is contained in Section L4 of the 2018 Integrated Report. EPA has reviewed Ohio's description of the data and information it assembled and evaluated, its methodology for

[3] EPA, Guidance for Water Quality-Based Decisions: the TMDL Process (April 1991) (hereinafter referred to as EPA's 1991 Guidance).

identifying waters, and any other relevant information including information the State submitted to EPA in response to requests for additional information.

Ohio relied on its credible data law, codified in the Ohio Revised Code (ORC) §§ 6111.50 - 6111.56, in deciding whether or not to use particular data or information in determining whether to list particular waters. That law establishes requirements for the use of external data. The 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 (QDC) and be compliant with the specifications of "Level 3 credible data," in order to be used for listing waters under Section 303(d) of the Act. Those rules, effective March 24, 2006, have been codified in Chapter 3745-4 of the Ohio Administrative Code (OAC). Within Section D6.1 of the 2018 Integrated Report is the memorandum dated May 23, 2017 sent by Ohio to solicit Level 3 data from external sources and all Level 3 QDCs. External sources include State and county health departments, universities, U.S. Geological Survey, Northeast Ohio Regional Sewer District (NEORSD), the Ohio Department of Natural Resources (ODNR), Public Water Supply (PWS) permittees, Syngenta Corp Protection, Inc., Midwest Biodiversity Institute, Enviroscience, Inc., Ohio Department of Transportation, Heidelberg College, EA Science and Technology, Inc., Cleveland Metroparks, and Clermont County Office of Environmental Quality. The data collectors either received training and certification from Ohio EPA to become QDCs, or the entities have submitted data in the past. The Ohio River data collection is through the Ohio River Valley Water Sanitation Commission (ORSANCO), and Ohio EPA uses this ORSANCO data; ORSANCO's non-support and partial support of uses in the Ohio River are considered impaired by Ohio.[4]

In addition to using Ohio EPA data, Ohio's assessment for the 2018 listing cycle used data from other Level 3 entities, or those agencies and entities that could likely be approved as Level 3 QDCs. Data used or protocols reviewed were from EPA, the National Oceanic and Atmospheric Administration (NOAA), NOAA's Great Lakes Environmental Research Lab (GLERL), the ODNR – Department of Water (DOW) Sandusky, charter boat captains, the US Geological Survey (USGS), the Ohio State University, Bowling Green State University, and the University of Toledo. Data and analyses from these entities had been compiled through the Great Lakes Water Quality Agreement (GLWQA) Annex 4 workgroup. The workgroup's efforts resulted in phosphorus reduction targets established under Annex 4 to decrease the occurrence and frequency of algal bloom biomass and cyanobacteria,[5] and the workgroup's results were peer reviewed by an *ad hoc* committee of EPA's Science Advisory Board. Ohio further collaborated with many of the researchers and data collectors in the workgroup to formulate the assessment methodology that Ohio used in Lake Erie impairment assessment in this listing cycle (Section F of the 2018 IR) and the amended 2016 IR.

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[4] ORSANCO, Assessment of Ohio River Water Quality Conditions 2010-2014 (June 2016). http://www.orsanco.org/publications/biennial-assessment-305b-report/ (2016 IR) and Section D of the 2018 Integrated Report

[5] Great Lakes Water Quality Agreement, Annex 4. "Recommended Phosphorus Loading Targets for Lake Erie". Annex 4 Objectives and Targets Task Team Final Report to the Nutrients Annex Subcommittee. May 11, 2015.

EPA concludes that the State has satisfied the regulatory requirement to assemble and evaluate all existing and readily available water quality-related data and information, including data and information relating to the categories of waters specified in 40 C.F.R. §130.7(b)(5). The State assembled and evaluated, but chose not to use existing and readily available data that were not Level 3 because the State was unable to conclude that this data was "credible," "valid," and "useful for their intended purpose." Consistent with EPA regulations at 40 C.F.R. §130.7(b)(6)(iii), EPA finds that this rationale for the State's decision not to use this data and information as a basis for listing waters is reasonable.

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).

II. Description of Ohio's Submission

Listing Methodology and Reporting.

The waterbodies in Category 5, at Section L4 of Ohio's 2018 IR, constitute Ohio's Section 303(d) list. Ohio's 2018 IR discusses several issues that impact Ohio's assessment program. The 2018 IR includes open water assessment units (previously added to the 2016 IR Amendment) for Lake Erie in addition to the previous shoreline assessment units. The most significant additions to the 2018 303(d) list are 1) the PDWS Use impairment in the Western Basin shoreline, and 2) the PDWS Use impairment of the Sandusky Basin shoreline, which is a new AU.[6] Several sections of the 2018 IR are not discussed in this decision document because they do not represent a significant departure from past monitoring and assessment practices.

Section C of the 2018 IR: Managing Water Quality.

Section C provides an update of various surface water quality management programs and Ohio's Lake Erie programs.[7] Each of the Areas of Concern (AOCs) has had reduction or progress

[6] On May 04, 2018, Ohio EPA amended its 2016 IR to include listings of the Western Basin open waters, and Islands Shoreline of Lake Erie as impaired for recreational use due to algae; Ohio also listed the open waters of the Western, Sandusky Bay area, and Central Basins as impaired for PDWS use. On May 10, 2018, EPA approved Ohio's 2016 IR Amendment.
[7] 2018 IR, p. C6-10.

toward reduction of Beneficial Use Impairments (BUIs) since the last listing cycle. These efforts include the ongoing Remedial Action Plans (RAPs) in the AOCs in the Maumee, Black, Cuyahoga and Ashtabula Rivers, all of which flow into Lake Erie. Environmental restoration projects for these tributary rivers are funded under the Great Lakes Restoration Initiative and the Great Lakes Legacy Act (GLLA) to reduce nutrient loadings to Lake Erie, remove contaminated sediments, restore habitat, remove dams, and achieve other water-quality related aims, with the ultimate goal of reducing the BUIs for the AOCs.

Another program highlighted in Section C of the 2018 IR is the Lake Erie Lakewide Action and Management Plan (LAMP) (formerly LaMP), which is focused on loading reductions and restoration of beneficial uses. The Lake Erie LAMP initially concentrated on the reduction of toxic chemical pollutants, but now includes a focus on Nonpoint Source (NPS) and pollutants such as nutrients and habitat alteration. The LAMP outlines management actions needed to assist Lake Erie and its beaches in restoring and maintaining their chemical, physical and biological integrity. The Great Lakes Water Quality Agreement between the United States and Canada (amended in 2012), 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 nearshore monitoring to support a more integrated nearshore monitoring framework. Annex 4 of the GLWQA addresses nutrient loadings to Lake Erie and establishes an interim target for total phosphorus of 15 µg/l for the Western Basin and 10 µg/l for the Central and Eastern Basins, as well as a process to develop final loading targets for total phosphorus and an allocation for each country along with domestic action plans to meet the targets.[8]

Since the last listing cycle, an important issue has been addressed regarding Ohio's TMDL program. On March 24, 2015, the Ohio Supreme Court in *Fairfield Cty. Bd. of Commrs. v. Nally,* 143 Ohio St.3d 93, 2015-Ohio-991[9] stated Ohio EPA must follow the rulemaking procedure under State law before submitting a TMDL to EPA for approval and ultimately for implementation in an National Pollutant Discharge Elimination System (NPDES) permit. This resulted in a backlog of work on TMDL development at the State. On September 29, 2017, the Ohio General Assembly amended State law to: 1) reinstate previously approved TMDLs; 2) require stakeholder outreach at several points during TMDL development; 3) mandate consideration of several technical and financial items; 4) affirm that TMDLs are not actions of the Director and challenges are made through the NPDES permit appeal process; and 5) require Ohio EPA to adopt administrative rules for stakeholder notification and significant public interest by December 2018.[10]

Ohio Senate Bill 1 was passed in July 2015 directing Ohio EPA to implement actions to protect against cyanobacteria in the Western Basin of Lake Erie and in public water supplies pursuant to ORC §3745.50, which authorized the Ohio EPA Director to serve as the coordinator of harmful

[8] Under Annex 4 of the GLWQA, loading targets for phosphorus were developed in 2015 for Lake Erie; a load reduction plan and adaptive management planning via Domestic Action Plans is ongoing.
[9] This decision is available online at supremecourt.ohio.gov/rod/docs/pdf/0/2015/2015-Ohio-991.pdf.
[10] 2018 IR, p. C-16-17.

algae management and response. Ohio adopted new and revised rules, effective June 1, 2016, to meet these requirements. The rules address "analytical protocols, establishment of health advisories and public notification protocols and triggers, sampling, treatment techniques, algaecide application and reporting requirements."[11] In 2016, Ohio established the Division of Drinking and Ground Waters (DDAGW) to protect groundwater systems and ensure that public water systems supply safe drinking water. Ohio EPA has undertaken a number of interagency and interdivision efforts to protect water systems and has implemented the *Public Water System Harmful Algal Bloom Response Strategy.*[12] Communication with the public includes the website ohioalgaeinfo.com and ODH BeachGuard site at http://publicapps.odh.ohio.gov/BeachGuardPublic/Default.aspx.

Ohio EPA also discusses in this Section of the IR the results of algal toxin monitoring and phytoplankton monitoring at inland lakes and Lake Erie. Microcystin and cyanobacteria screening indicate the occurrence of Harmful Algal Blooms (HABs) across the State.[13] Screening and follow up samples showed:

1. Microcystin-producing genes were detected at 56% of source waters; microcystins were detected at 47% of Ohio's PWS source waters;
2. Saxitoxin-producing genes were detected at 38% of source waters; follow up sampling of saxitoxin screening locations showed 18% of the PWS waters had saxitoxins;
3. Cylindrospermopsin-producing genes were detected at two sites; follow up sampling found Cylindrospermopsin-producing genes only at one site.

Under an Ohio EPA-funded program, charter boat captains collected 151 samples in the Western Basin in 2016 and 146 samples in 2017. Ohio also used NOAA satellite imagery as a tool to confirm the presence of HABs, and to assist with quantification of algal bloom densities.

As in 2016, Ohio EPA reviewed its goals in the 2018 IR relative to the EPA 303(d) Vision Framework of December 2013.[14] The Framework goal is to restore high priority waters identified by each state. The Ohio EPA long term general priorities are to:

- Continue to use a rotating basin schedule for field monitoring but on a more limited basis to allow for increased focus on lakes and protecting downstream uses;
- Sharpen focus on Public Water Supply Use;
- Incorporate HAB considerations into priorities (both PDWS use and ultimately Recreation use);
- Concentrate recreation TMDLs on High-Use recreation waters;
- Continue to make mercury and legacy/sediment metals low-priority TMDLs as other approaches are anticipated to be more effective.

[11] 2018 IR, p. C-21.
[12] 2018 IR, p. C-21.
[13] 2018 IR, p. C-22.
[14] Information for assistance with the CWA 303(d) Program Vision, Benita Best-Wong cover letter dated August 13, 2015.

Section D of the 2018 IR: Framework for Reporting and Evaluation.

Ohio continues to use the designated use framework for assessment of aquatic life, recreation, human health, and PDWS. The IR includes the Lake Erie Assessment Units (LEAUs) for all portions of Lake Erie within Ohio's jurisdiction, and the assessment of the LEAUs for impairment of the State's Recreational Use (RU) due to Algae, as described in the amended 2016 IR and slightly modified in the 2018 IR. Lake Erie assessment units include the open waters of the Western, Central, and Sandusky Basins, and delineation of the Sandusky Bay shoreline (formerly included in the Western Basin shoreline).[15]

The LEAUs are described as follows:[16]
o Western Basin shoreline and open water (OH-MI state line to Marblehead);
o Lake Erie islands shoreline (including South Bass Island, Middle Bass Island, North Bass Island, Kelleys Island, West Sister Island and other small islands);
o Sandusky Basin shoreline and open water (Marblehead to Lorain Ridge); and
o Central Basin shoreline and open water (Black River/Lorain Ridge to OH-PA state line).[17]

Section D6 of Ohio's 2018 IR discusses the public involvement in compiling the 2018 303(d) list and summarizes public comments Ohio received on its draft 2018 IR, and responses provided by Ohio EPA. The formal comment period extended from March 23, 2018 through May 4, 2018. The Notice is included in the 2018 Integrated Report in Section D6.1. Section D6.1.1 includes instruction for Level 3 Credible Data and entities and agencies that have contributed data.

Public Comments:

Copies of the full public comments, and a responsiveness summary of the comments received and the State's responses were included in the submittal package to EPA. Comments received primarily focused on the following topics: general comments, those related to the monitoring schedule, and those related to Lake Erie. Public comments received and Ohio EPA's responses are included in Section D6.3.1 and D6.3.2 of the IR.

EPA has reviewed the public comments received and Ohio EPA's responses, and concludes that Ohio EPA adequately addressed the public comments received insofar as they raised any concerns about the State's listing obligations under Section 303(d) and EPA's implementing regulations.

[15] Ohio EPA has redefined the shoreline, to include waters ≤ 3 meters in depth, and open waters are defined as those waters > 3 meters in depth.
[16] 2018 IR, Section D1.
[17] 2018 IR, p. D-2.

Section F of the 2018 IR: Evaluating Beneficial Use - Recreation.

Recreational Use E. coli

Ohio revised its WQS for *E. coli,* which became effective in February 2017 and approved by EPA in June 2017. The standards were moved from OAC §3745-1-07 to §3745-1-37. The revised recreational WQS are based on the protected use associated with the various waterbody types (bathing waters and primary/secondary contact waters) (Table F-1 below). The Statistical Threshold Value (STV) replaces the past single sample maximum methodology.[18]

Table F-1 — Summary of the RU assessment methods.

Bathing Waters		
Indicator	**Criterion (Table 37-2, OAC 3745-1-37)**	**Assessment Method Summary**
E. coli	Geometric mean *E. coli* content* based on samples collected within a 90-day period during the recreation season within a calendar year is 126 cfu/100 mL; statistical threshold value (STV) is 410 cfu/100 mL.	Applied to the four Lake Erie shoreline assessment units and inland lake beaches, exceedance of the geometric mean bathing water criterion or an exceedance of the STV in more than 10 percent of the samples collected during a 90-day period is considered an impairment of the bathing water use, where sufficient data are available**.
Primary Contact and Secondary Contact		
Indicator	**Criterion (Table 37-2, OAC 3745-1-37)**	**Assessment Method Summary**
E. coli	Geometric mean *E. coli* content* based on samples collected within a 90-day period during the recreation season within a calendar year is as follows: Primary Contact Waters 90-day Geometric Mean: 126 cfu/100 mL STV: 410 cfu/100 mL Secondary Contact Waters 90-day Geometric Mean: 1,030 cfu/100 mL STV: 1,030 cfu/100 mL	Applied to streams and inland lake non-beach sites. Data collected within a 90-day period in the recreation season are assessed on a site-by-site basis and compared to the applicable geometric mean and STV *E. coli* criteria whenever sufficient data** are available for the site. Assessment units (AUs) are in full attainment if all sites assessed within the AU meet both the applicable geometric mean and STV criteria and in non-attainment if one or more sites assessed within the AU exceed the applicable geometric mean or STV criteria.

E. coli concentrations are expressed in colony forming units (cfu) per 100 milliliters (mL)
** Five or more samples collected within a 90-day period.

In contrast to Ohio's bathing water recreational use criteria, beach advisory recommendations are based upon a single sample maximum *E. coli* criterion, using the federal bacteria rule promulgated pursuant to the BEACH Act.[19] Section F of the 2018 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 threshold for triggering the issuance of beach advisories has been used since 2006.

Table F-11 below shows Ohio's 65 Lake Erie beaches divided into the four geographical areas. The percentage of days in exceedance of the *E. coli* single sample maximum criterion from 2013 to 2017 was as follows: 15.4% for the Western Basin, 20.2% for the Central Basin, 25.3% for the Sandusky Basin, and 3.9% for the Lake Erie Islands.

[18] The STV represents the 90th percentile of the samples collected in the 90-day period (five or more samples) that cannot be exceeded in more than 10% of the samples.
[19] Water Quality Standards for Coastal and Great Lakes Recreation Waters, 69 Fed. Reg. 67217 (Nov. 16, 2004).

Table F-11 — Aggregated exceedance frequencies at 65 Lake Erie public beaches from 2013-2017 (pooled by Lake Erie shoreline AU to report use support).

	Western Basin	Central Basin	Sandusky Basin	Lake Erie Islands
Number of beaches	7	30	26	2
Total recreation days	3,535	14,857	13,561	1,026
Total days in exceedance	546	3,005	3,426	40
Percentage of days in exceedance	15.4%	20.2%	25.3%	3.9%
Total beach seasons[1]	35	148	129	10
Average # of days *E. coli* BAV exceeded per beach per season[2]	15.6	20.3	26.6	1.0
Number of beaches exceeding 90-d geomean one or more years during reporting cycle[3]	5	22	14	1
Number of beaches exceeding STV within a 90-day period in one or more years during the reporting cycle[3]	5	30	25	2
Attainment status	Does not support	Does not support	Does not Support	Does not Support

[1] 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 2013-2017 reporting period.
[2] Calculated by dividing the total days in exceedance in the basin by the total number of beach seasons in the basin.
[3] Used to determine attainment status.

Table F-13 below shows the *E. coli* results for the five most recent listing cycles for rivers and streams in Watershed Assessment Units (WAUs). For the 170 AUs analyzed for the 2018 IR, shown in the last two columns, 8% fully supported RU with respect to *E. coli* while 92% did not.

Table F-13 — Overall differences in the assessment of RU attainment, 2010-2018.

	2010 Report		2012 Report		2014 Report		2016 Report		2018 Report	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total AUs[a]	1,576	100	1,576	100	1,576	100	1,576	100	1,576	100
Assessed	487	31	588	37	680	43	713	45	170	11
Not Assessed	1,089	69	988	63	896	57	863	55	1,406	89
Supporting Use[b]	65	13	88	15	130	19	73	10	14	8
Not Supporting Use[b]	422	87	500	85	550	81	640	90	156	92

[a] Includes LRAUs.
[b] Note: The percentage of AUs reported as supporting the RU and not supporting the RU are based on the total AUs that were assessed (e.g., 187 in the 2018 analysis).

Beaches at inland lakes are tested less frequently compared to Lake Erie beaches. The overall frequency of exceedances at inland lakes was 13.8% in the most recent five-year reporting period, an increase from 12.4% reported in the 2011-2015 reporting period. There were 28 inland lake beaches where the aggregated exceedance frequency was over 10 percent. The highest frequency was 66% at Brooks Park beach, and 60% at Crystal Beach, both located at Buckeye Lake. There were 13 beaches that exceeded the bathing water *E. coli* criteria over 25 percent of the time over the five-year reporting period total.[20]

Recreational Use Algae - Western Basin

Prior to its amended 2016 list, Ohio assessed for RU based solely on the presence of bacteria. In the current listing cycle, the methodology includes the assessment of RU impairment in the

[20] Site specific data and discussion can be found at 2018 IR, Section F3.3.

Western basin of Lake Erie related to algae.[21] In its assessments prior to its amended 2016 list, Ohio EPA assessed three Lake Erie AUs-the Western Basin, Central Basin, and Lake Erie Islands Shorelines. For its 2016 IR Amendment, Ohio EPA added the Western, Central and Sandusky Basin Open Waters AUs for 303(d) assessment purposes. The Sandusky Basin Shoreline AU was added in the 2018 IR (Table F-18 and Figure F-7 from the 2018 IR below). Table F-18 below describes details of the map of the new AUs in Figure F-7. The Central Basin Shoreline and Open Water AUs extend eastward to the border of Pennsylvania.

Table F-18 — Proposed Ohio Lake Erie AUs.

AU Code	AU Name	Description
041202000201	Western Basin Shoreline (W1)	Lake Erie shoreline from the MI/OH state line to the west side of Catawba Island at depths ≤3m, including Maumee Bay
041202000301	Western Basin Open Waters (W2)	Lake Erie open water from the MI/OH state line to a line between the Marblehead Lighthouse and Pelee Point at depths >3m (U.S. waters only)
041202000100	Islands Shoreline (I1)	Lake Erie island shorelines from the west side of Catawba Island to the Marblehead Lighthouse at depths ≤3m and including, but not limited to the following Islands; West Sister, Bass and Kelleys
041202000202	Sandusky Basin Shoreline (S1)	Lake Erie shoreline from the Marblehead Lighthouse to the Black River at depths ≤3m, including Sandusky Bay
041202000302	Sandusky Basin Open Waters (S2)	Lake Erie open water from a line between the Marblehead Lighthouse and Pelee Point to the Lorain Ridge at depths >3m (U.S. waters only)
041202000203	Central Basin Shoreline (C1)	Lake Erie shoreline from the Black River to the OH/PA state line at depths ≤3m
041202000303	Central Basin Open Waters (C2)	Lake Erie open water from the Lorain Ridge to the OH/PA state line at depths >3m (U.S. waters only)

[21] 2018 IR, Section F.4.

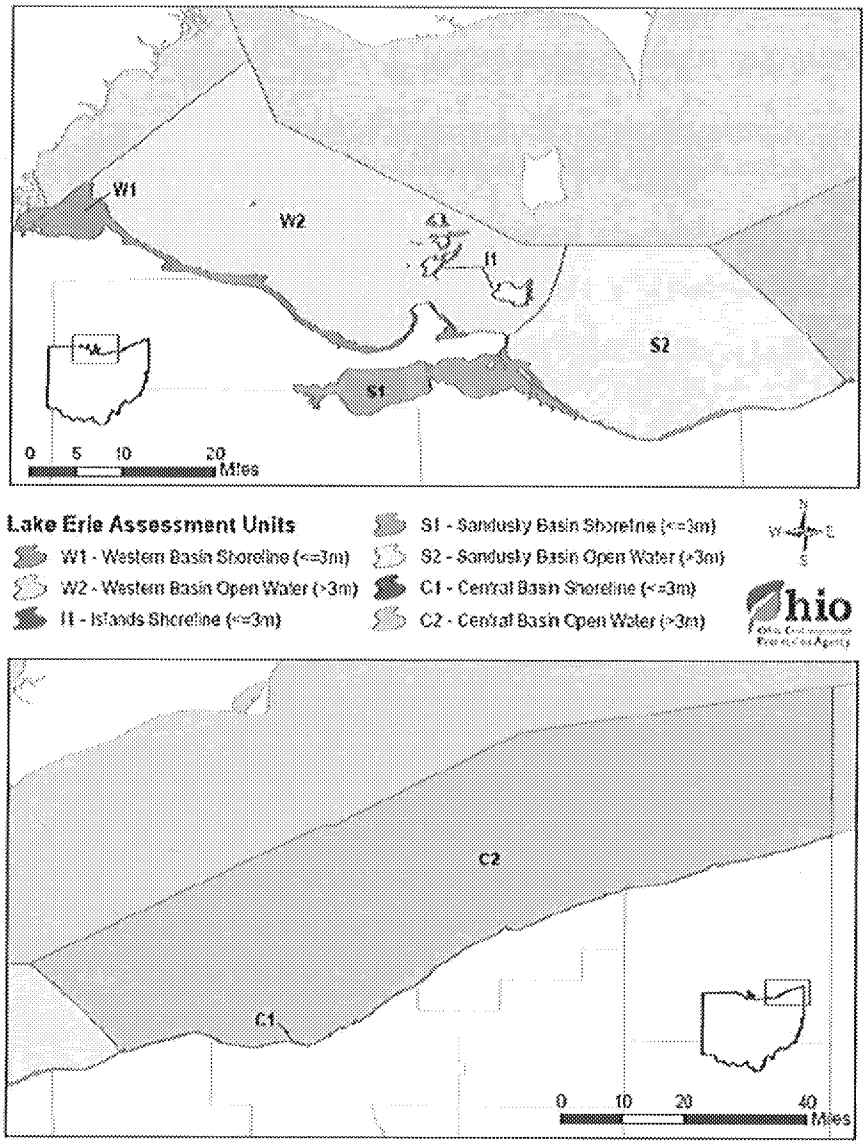

Figure F-7 — New Ohio Lake Erie AUs

Ohio included a table and map of all the sampling sites and sampling frequency for data available from entities that have Level 3 credible data or will be acceptable in the future to have Level 3 data.[22] Table F-19 in the 2018 IR also includes many types of data beyond phosphorus/nutrient and chlorophyll-a, such as phytoplankton, zooplankton, picoplankton, biovolume, species, DNA and taxa for a better understanding of the physical attributes and extent of the algal presence.

[22] 2018 IR, Figure F-8, p. F-30, Table F--19, p. F-31-33.

For the 2018 IR, Ohio EPA used its narrative standards to determine RU impairment due to algae. Ohio EPA narrative water quality standards found in OAC §3745-1-04 state that all surface waters be:

> *(D) Free from substances entering the waters as a result of human activity in concentrations that are toxic or harmful to human, animal or aquatic life or are rapidly lethal in the mixing zone.*
> *(E) Free from nutrients entering the water as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae.*

In order to have a quantitative and objective method for assessing attainment with these narrative water quality standards, metrics were developed by Ohio EPA in consultation with the Ohio State University Sea Grant Program, the University of Toledo, Bowling Green State University and NOAA. Satellite imagery from NOAA had been generated in the recent past (using the Moderate Resolution Imaging Spectroradiometer – MODIS), and values were determined based on targets developed under Annex 4 of the GLWQA.[23] The determination of attainment of the narrative water quality standard is based on two algal measurements:

- algal bloom not to exceed that which occurred in 2004 or 2012 (based on linkage with phosphorus loading); and
- algal cell count not to exceed 20,000 cells/ml (based on higher likelihood that cyanobacteria cell count would produce *Microcystis* blooms).

Related to quantifying the extent of the bloom, Ohio EPA stated:

> To account for the way that algal blooms shift in time and space in a large water body like the western basin, the method developed is as follows:
> • In each 10-day frame, an exceedance means that a bloom with greater than 20,000 cells/mL covers (is present in) more than 30 percent of the western basin open water unit area
> • If more than three 10-day frames have an exceedance in one year (July-Oct.), then that year exceeds the goal (is above the threshold target of the 2004 and 2012 blooms under Annex 4 of the GLWQA)
> • Because of the year-to-year variation, if any two or more years in a rolling six-year window exceeds the goal (is above the threshold target of the 2004 and 2012 blooms under Annex 4 of the GLWQA) then the unit is impaired.... The threshold of 30 percent coverage is based on an examination of the bloom coverage in Lake Erie's western basin since 2002 and which blooms were considered to meet the Annex 4 target severity index (the Target Bloom in Figure F-9). Severity Index (SI) is the measure of the peak bloom biomass over a 30day period (in each year, whichever 30-days captured/represents the most biomass in that year).[24]

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[23] Recommended Phosphorus Loading Targets for Lake Erie, Annex 4 Objectives and Targets Task Team Final Report to the Nutrients Annex Subcommittee (May 11, 2015, available at https://www.epa.gov/sites/production/files/2015-06/documents/report-recommended-phosphorus-loading-targets-lake-erie-201505.pdf.
[24] 2018 IR, pp. F-34, 35.

For quantification of the cell count, Ohio EPA stated[25]:

> Within each 10-day frame, an average percent coverage by a bloom at 20,000 cell/mL or greater was calculated for the western basin open water assessment unit (W2 in Figure F-7). In the western basin, blooms typically begin developing by July 22 and peak between August 10 and September 18 (Wynne and Stumpf, 2015). The 10-day time frames used in the assessment method are:
>
> July 1 – July 10 Aug. 30 – Sept. 8
> July 11 – July 20 Sept. 9 – Sept. 18
> July 21 – July 30 Sept. 19 – Sept. 28
> July 31 – Aug 9 Sept. 29 – Oct. 8
> Aug. 10 – Aug. 19 Oct. 9 – Oct. 18
> Aug. 20 – Aug. 29 Oct. 19 – Oct. 31

The results from the methodology yielded a finding of impairment as shown below in Table F-20 from the 2018 IR.

Table F-20 — The number of 10-day time frames exceeding the 30 percent coverage threshold (with 20,000 cells/mL or greater) in the western basin open water unit for each year beginning in 2012.

	≥30% coverage at ≥20,000 cell/mL	
Year	10-day frames exceeding	total frames
2012	2	12
2013	10	11
2014	6	12
2015	9	11
2016	5	10
2017	7	11

Section G of the 2018 IR: Evaluating Beneficial Use – Aquatic Life Use (ALU).

ALU scores overall are summarized below, using data from 2003-2016:

- WAU sites achieving full attainment increased from 59.3% to 61.8% for the HUC 12 assessments.
- Larger River Assessment Unit (LRAU) miles achieving full attainment was almost unchanged from 87.4% to 87.3%.
- LEAU sites in full attainment increased to 17.0% from 13.3% in the last listing cycle, but for the first time included the Sandusky Bay shoreline, defined as the area between the Central and Western Basin shorelines, as impaired for ALU.

Ohio also provided a breakdown of attainment in watersheds based on watershed size, subcategories of ALU such as Exceptional Warmwater Habitat (EWH) through Limited

[25] 2018 IR, p. F-35.

Resource Waters (LRW), and the top five prevalent causes of ALU impairment (siltation/sedimentation, habitat modification, nutrient enrichment, organic enrichment, and hydromodification).[26]

Lake Erie sampling included 131 fish community collections at 47 sites from 2011-2016. The current cycle impairment values showed that of the 47 sites, only nine are fully attaining the designated EWH ALU. This assessment includes the new assessment units for Lake Erie. Ohio compared recent data collected in 2011-2016 and other electrofishing results from the 1900s and early 2000s, and in general did not find a great difference in medians and ranges in the Index of Biological Integrity (IBI) and Modified Index of Well-Being (MIwb) indices. The IR stated that the largest changes were linked to Lake Erie Island shoreline sites, but that the results are not conclusive due to the small sample sizes. The IR observed that there appears to be a significant change in the proportion of exotic species to native species (i.e. changing the original biotic community).

A breakdown of results reflects the following site attainment status for each of the LEAUs (fish community assessments).

AUID	AU Name	# Sites	# Full	# Partial	# Non
041202000201	Lake Erie Western Basin Shoreline (including Maumee Bay)	9	3	0	6
041202000301	Lake Erie Western Basin Open Water	0	0	0	0
041202000101	Lake Erie Islands Shoreline	4	0	1	3
041202000202	Lake Erie Sandusky Basin shoreline	14	5	5	4
041202000302	Lake Erie Sandusky Basin open water	0	0	0	0
041202000203	Lake Erie Central Basin shoreline	20	1	5	14
041202000303	Lake Erie Central Basin open water	0	0	0	0

Section H of the 2018 IR: Evaluating Beneficial Use: Public Drinking Water Supply.

Attainment determinations for the PDWS Use are based on nitrate, pesticide, other contaminants, algal cyanotoxins, and *Cryptosporidium* indicators. Ohio EPA measures both ambient and treated water collected from 2010 through October 2017.

- For the 2018 IR, Ohio has assessed seven and listed six of the LEAUs of the Lake Erie Shoreline, Islands, and Open Waters assessment units for PDWS use impairment (the seventh AU is not used for public drinking water supply). The AUs are impaired for PDWS use due to microcystin levels measured above threshold values of 1 µg/L. Details of the water quality data and locations of the communities are in Table H-2 in the 2018 IR.[27]
- Western Basin Shoreline – two public water systems (PWS) had at least two raw water sample microcystin exceedances.
- Western Basin Open Waters – four PWS systems had at least two raw water sample microcystin exceedances.

[26] 2018 IR p. G-12.
[27] 2018 IR, pp. H-12 to H-17.

- Lake Erie Islands Shoreline – three PWS had at least two raw water sample microcystin exceedances.
- Sandusky Basin Shoreline – one PWS had a least two raw water sample microcystin exceedances.
- Sandusky Basin Open Waters – two PWS had a least two raw water sample microcystin exceedances.
- Central Basin Open Waters – four PWS had at least two raw water sample microcystin exceedances.

Outside of Lake Erie, new PDWS impairment determinations were included for other waterbodies due to microcystin, cylindrospermopsin, and saxitoxin exceedances (Table H-2).

Section I of the 2018 IR: Considerations for Future Lists.

Ohio updated information regarding the assessment of Lake Erie, including samples collected and a map of sampling sites from the University of Toledo and the Ohio State University/Stone Laboratory.[28] Future actions toward assessment and listing of LEAUs are in alignment with ecosystem objectives for Lake Erie as described in the GLWQA. The sampling of open waters is funded to supplement other existing data used for assessment and potential listing as well as to include four sites in Sandusky Bay for the next two years. Entities will work with Ohio EPA to ensure the data are credible Level 3, to be used in conjunction with satellite imagery from NOAA, to provide a comprehensive assessment method for algal blooms in the open waters for future 303(d) lists, especially to monitor and quantify areal extent and microcystin metrics. NOAA continues to collect data at seven sites in Ohio waters, and the Northeast Ohio Regional Sewer District collects data at eight sites in the Central Basin. Ohio EPA indicates that there will be ongoing collaboration amongst Ohio EPA and state, federal, and local partners and universities in sampling as well as refining assessment methodology.

[28] 2018 IR, p. I-20.

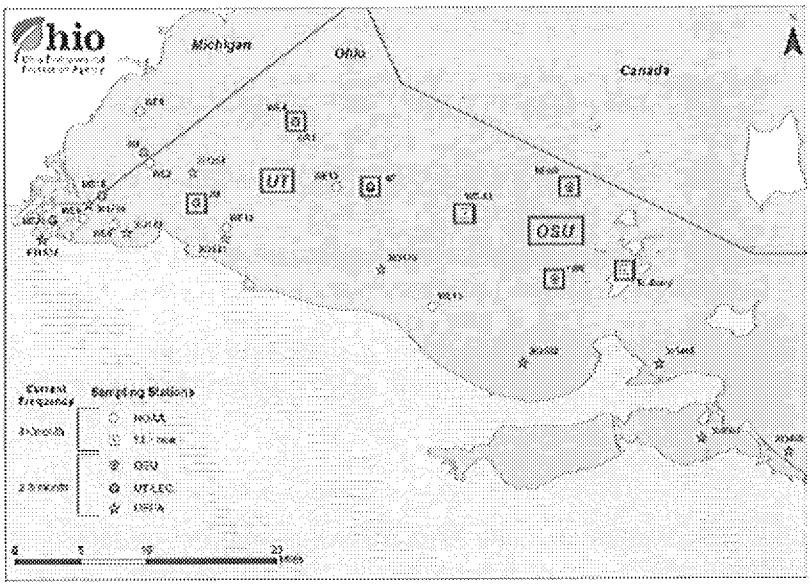

Figure J-1 — Supplemental weekly sampling locations for chlorophyll and microcystin; sampled by University of Toledo and the Ohio State University/Stone Laboratory (boxed sites) researchers in 2017.

Section J of the 2018 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 program and schedule for TMDL development and monitoring. Table J-1 below shows the attainment and listing categories. The 2018 IR includes a new listing category 5p, for protection/preservation of threatened waters, primarily for nutrients.

Table J-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[3] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[4]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

Priority Ranking and Targeting

Ohio has included a discussion of its prioritization process for TMDL development in Sections C and J of the IR, which uses a points-based system that considers the "presence and severity of Human Health impairment, Recreation Use impairment, Public Water Supply impairment and Aquatic Life Use impairment."[29]

Section J2 describes how Ohio increased the priority of the impaired AUs. Extra priority points are given for:

- social factors (high use recreational waters, drinking water supply for large populations, sustained involvement by local groups or government);
- value added (whether a TMDL offers the best way to achieve water quality);
- implemented projects/approved watershed plan;
- alternatives more timely than a TMDL;
- regulatory authority over sources; and,
- other factors (pending enforcement, Corps modeling of a reservoir, local or state strategy such as new rules for home sewage treatment systems).

EPA agrees that, as to the WQLSs included on the 2018 Section 303(d) list, OEPA has satisfied the requirement to submit a priority ranking consistent with EPA's regulations.

Figure J-2 below reflects changes from previous IRs with the addition of the "Recreation LEAUs" that apply to the Lake Erie algal impairments, in addition to the previous recreational use impairments due to excess bacteria impacting primary and secondary contact in WAUs and LWAUs.

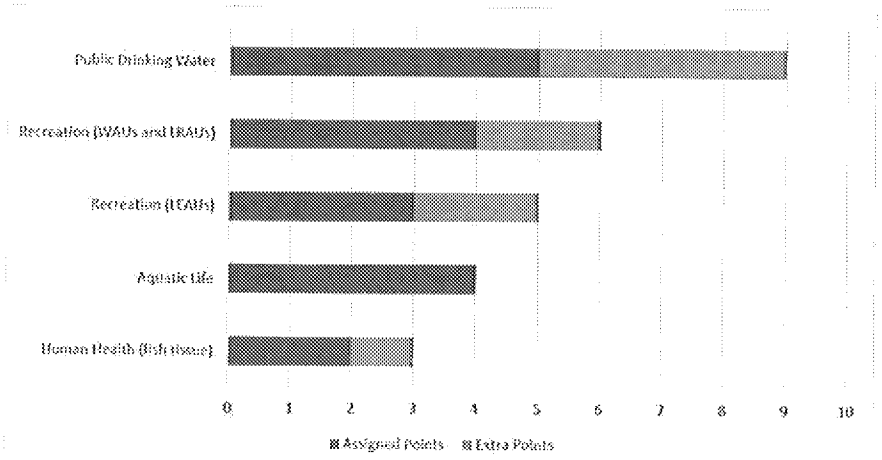

Figure J-2 — Priority points assigned based on use impairment or other factors (extra points).

[29] 2018 IR, p. C-29.

Ohio used a point system in Section J2 of the IR to assign priority to the Lake Erie Assessment Units. That section also discusses how Ohio is developing TMDLs for Lake Erie tributaries as well as many other actions for Lake Erie outlined in Section J3. Lake Erie impaired waters are assigned a low priority for Ohio EPA-initiated TMDLs. As Ohio acknowledges in Section J4, TMDLs are "need[ed]" (i.e. required) for the Lake Erie Assessment Units so long as they remain on the State's 303(d) list. However, states have "considerable flexibility" in deciding when to develop a TMDL based upon the circumstances, particularly for segments that have only recently been added to the list.[30] Furthermore, EPA has explained that "[i]n some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the applicable standard is met)."[31] And so, if efforts such as those described in Section J3 result in the attainment of water quality standards prior to the development of a TMDL, then Ohio may remove those impaired segments from its 303(d) list and a TMDL will no longer be required. But as Ohio EPA observes, where its current efforts to reduce nutrient pollution into Lake Erie, including TMDL development for the Lake's tributaries, are not sufficient to achieve standards, "Ohio will be working with U.S. EPA and other partners to determine next steps."[32] EPA expects that under those circumstances such "next steps" would include TMDL development for the Lake Erie Assessment Units directly.

Ohio EPA also received comments from the public that it should prioritize implementation of TMDLs for the Western Basin of Lake Erie, for either the waters of the Lake and/or the Western Lake Erie watersheds. In response, Ohio EPA described its plans for TMDL development in the near term, including its prioritization of TMDLs for the western basin tributaries, and indicated it will evaluate the need to update older TMDLs in its administrative planning process. The State also referenced the explanation in the IR regarding why a TMDL is not being pursued for the Lake immediately, and that it clearly indicates the western basin load reductions are a priority for the agency and the State. EPA finds these responses to be reasonable, and concludes that Ohio EPA has satisfied the requirement to submit a priority ranking for Lake Erie consistent with the regulations at 40 C.F.R. §130.7(b)(4).

Addition and Removal of Waters from the 303(d) List

Section J of the 2018 IR describes the delisting or addition of waters from the 2016 303(d) list. Table J-5 below shows both delisting and listing of new waters in Ohio's 2018 303(d) list. The new recreational use additions to the 303(d) list greatly increased from 68[33] to 261 in WAUs.

[30] EPA's Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act (July 29, 2005), p. 63.
[31] Ibid., p. 57.
[32] 2018 IR, p. J-12.
[33] Compared to Table J-5 in the 2016 IR.

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

	Number of AUs			
	Watershed	Lake Erie	Lake Erie	Total
Delistings (Remove from 303(d) list)				
Human Health (fish tissue)	15	0	0	15
Recreation	37	1	0	38
Aquatic Life	76	2	0	78
Public Drinking Water Supply	1	0	0	1
Total	130	3	0	132
New Listings (Add to 303(d) list)				
Human Health (fish tissue)	21	0	0	21
Recreation	261	3	0	264
Aquatic Life	31	0	0	31
Public Drinking Water Supply	11	0	2	13
Total	326	3	2	329

Ohio removed waters from its 303(d) list because of 1) a flaw in original listing; 2) new data showing that the waters are meeting the WQS; or 3) new AUs.[34] In evaluating the reasonableness of the State's decision to remove these waters, EPA has evaluated the State's delisting rationale, and information made available to the public during the public notice and comment period, and concludes that the State has demonstrated good cause for removing these waters.

Short term schedule

The 2018 IR included Ohio's short-term schedule for TMDL development for all waters on the State's Category 5 list in Table J-13 of Section J.[35] The TMDLs are expected to be completed in 2019.

EPA reviewed the State's identification of WQLSs targeted for TMDL development and concludes that the State has specifically identified waters targeted for TMDL development in the next two years as required by 40 C.F.R. §130.7(b)(4).

Long term schedule

The 2018 IR discussed Ohio's long-term schedule for TMDL development for all waters on the State's Category 5 list of impaired waters. Because Ohio has had some delay in its submittal of TMDLs due to the court decision referenced above, Ohio is committing staff resources to reduce the resultant backlog of TMDLs, and less frequent waterbody field monitoring events are planned for the near future, to allow the TMDL report backlog to be reduced.

[34] 2018 IR, Tables J-5, J-6, J-7, J-8, J-9 and J-10, pp. J-21-25.
[35] 2018 IR, Section J, Table J-13, p. J-33.

Section L of the 2018 IR: Summary Tables of Waterbody Conditions; Lists of Prioritized Impaired Waters; and Monitoring and TMDL Schedules

This Section includes the waters included on Ohio's 2018 impaired waters list. The most significant change in the amended 2016 IR was the addition of the last three AUs in the table below for the open waters of Lake Erie. These AUs are included in the 2018 IR. The 2018 IR has a total of seven Lake Erie AUs due to the addition of the Sandusky Shoreline, which was previously part of the Western Basin Shoreline AU.

Section L3, Status of Lake Erie Assessment Units							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recreation	Aquatic Life	PWS Supply	Priority Points
041202000101	Lake Erie Islands Shoreline (≤3m)	4.99	5	5	5	5	14
041202000201	Lake Erie Western Basin Shoreline (≤3m)	47.88	5	5	5	5	17
041202000202	Lake Erie Sandusky Basin Shoreline (≤3m)	68.01	5	5	5	5	16
041202000203	Lake Erie Central Basin Shoreline (≤3m)	13.39	5	5	5	0	9
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
041202000302	Lake Erie Sandusky Basin Open Water (>3m)	361.71	3i	3	3	5	5
041202000303	Lake Erie Central Basin Open Water (>3m)	2544.98	3i	3	3	5	5

Conclusion

After full review and evaluation of the information presented by the State in its 2018 submittal, EPA is approving the waters identified in Section L4 of Ohio's 2018 IR as impaired waters still requiring TMDLs. EPA is taking action on the list of Category 5 waters for which available data and/or information indicate that at least one designated use is not being supported or is threatened, and for which a TMDL is still required. Although the information was considered in EPA's review, EPA is not taking any action to approve or disapprove waters identified in Ohio's 2018 IR in categories 1, 2, 3, and 4 in this decision, which does not affect EPA's approval of Ohio's 2018 list of impaired waters still requiring TMDLs.

References

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USEPA. 2005. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C. https://www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf

USEPA. 2006. *Guidance for 2008 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act.* U.S. Environmental Protection Agency, Office of Water, Washington, D.C. https://www.epa.gov/sites/production/files/2015-10/documents/2006_10_27_tmdl_2008_ir_memorandum.pdf

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Message

From: Chruscicki, Jean [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=51F931ADDB274EBCAD5499FA89ED015F-JCHRUSCI]
Sent: 6/13/2018 8:03:56 PM
To: Melinda.Harris@epa.ohio.gov
Subject: RE: Question p G15 IR re exotic fish

Thanks for your phone reply regarding section J, I am glad it is a typo and not a missing table or section.

From: Melinda.Harris@epa.ohio.gov [mailto:Melinda.Harris@epa.ohio.gov]
Sent: Tuesday, June 12, 2018 10:02 AM
To: Chruscicki, Jean <chruscicki.jean@epa.gov>; cathy.alexander@epa.ohio.gov
Subject: RE: Question p G15 IR re exotic fish

Jean,

In this case, exotic means coming from outside of the native community.

Please let us know if you need anything else.

Have a great day,
Melinda

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

From: Chruscicki, Jean <chruscicki.jean@epa.gov>
Sent: Friday, June 08, 2018 4:19 PM
To: Alexander, Cathy <cathy.alexander@epa.ohio.gov>; Harris, Melinda <Melinda.Harris@epa.ohio.gov>
Subject: Question p G15 IR re exotic fish

Page G 15 below - I am not sure if you mean there are more exotic fish, and whether that is good or bad. Does exotic mean special and good habitat for them, or coming from outside of the community and taking over the current community? Apologies if this is a dumb question, I have been looking at this too long.
Thanks,
Jean

One Lake Erie IBI component metric which did seem to reflect a significant change across the two timespans was the proportion of exotic species by numerical abundance in each sampling pass.

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Sent: 6/8/2018 8:18:36 PM
To: cathy.alexander@epa.ohio.gov; Melinda.Harris@epa.ohio.gov
Subject: Question p G15 IR re exotic fish

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Sent: 6/26/2018 4:00:41 PM
To: Melinda.Harris@epa.ohio.gov; cathy.alexander@epa.ohio.gov
Subject: comment Table J-15

Last week I think I mentioned to Melinda about there not being a table J-15 but it was a typo (not a missing table) and you meant J-13. I have found in response to comments in Section D a few places where you refer the commenter to Table J-15. My suggestion is simply to add an error page or "errata" where you state each page where there is a J-15 reference. I did not go through everything yet to find each page, (I can help later) but be sure you go through D and J as a start.
Thanks,
Jean

From: Chruscicki, Jean
Sent: Wednesday, June 13, 2018 3:04 PM
To: 'Melinda.Harris@epa.ohio.gov' <Melinda.Harris@epa.ohio.gov>
Subject: RE: Question p G15 IR re exotic fish

Thanks for your phone reply regarding section J, I am glad it is a typo and not a missing table or section.

From: Melinda.Harris@epa.ohio.gov [mailto:Melinda.Harris@epa.ohio.gov]
Sent: Tuesday, June 12, 2018 10:02 AM
To: Chruscicki, Jean <chruscicki.jean@epa.gov>; cathy.alexander@epa.ohio.gov
Subject: RE: Question p G15 IR re exotic fish

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Please let us know if you need anything else.

Have a great day,
Melinda

Melinda Harris
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Ohio Environmental Protection Agency
50 W. Town Street, Suite 700
Columbus, Ohio 43215
(614) 728-1357

Ohio Environmental Protection Agency

From: Chruscicki, Jean <chruscicki.jean@epa.gov>
Sent: Friday, June 08, 2018 4:19 PM
To: Alexander, Cathy <cathy.alexander@epa.ohio.gov>; Harris, Melinda <Melinda.Harris@epa.ohio.gov>
Subject: Question p G15 IR re exotic fish

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From: Chruscicki, Jean [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=51F931ADDB274EBCAD5499FA89ED015F-JCHRUSCI]
Sent: 7/13/2018 10:06:50 PM
To: cathy.alexander@epa.ohio.gov
CC: Melinda.Harris@epa.ohio.gov
Subject: RE: 303(d) approval letter

OK thanks for letting me know.

From: cathy.alexander@epa.ohio.gov [mailto:cathy.alexander@epa.ohio.gov]
Sent: Friday, July 13, 2018 3:18 PM
To: Chruscicki, Jean <chruscicki.jean@epa.gov>
Cc: Melinda.Harris@epa.ohio.gov
Subject: RE: 303(d) approval letter

Jean,
In the version of the report that was public noticed, there was a table J-15. So the response to comments does refer the commenter to the correct table based on the draft report. And we advise the reader that page number references to the draft report may not correspond to the same page numbers in the final report for instance, so I don't think we would normally provide an errata sheet for a reference in the response to comments because it often happens that changes get made between the draft and final report. Does that make sense?
If you saw any references to tables within the rest of the report that did not get updated please let me know.
Thanks and have a good weekend!
Cathy

From: Chruscicki, Jean <chruscicki.jean@epa.gov>
Sent: Thursday, July 12, 2018 10:49 AM
To: Alexander, Cathy <cathy.alexander@epa.ohio.gov>
Subject: RE: 303(d) approval letter

Hi, Cathy,
Were you able to do the final edits of the 2018 IR before posting the final? (the J-15 really being J-13, etc.?) Or any other edits? Otherwise I think we need an errata sheet posted too.
Thanks,
Jean

From: cathy.alexander@epa.ohio.gov [mailto:cathy.alexander@epa.ohio.gov]
Sent: Monday, July 09, 2018 12:13 PM
To: Swenson, Peter <swenson.peter@epa.gov>; Chruscicki, Jean <chruscicki.jean@epa.gov>
Subject: RE: 303(d) approval letter

Thank you!
Cathy

From: Swenson, Peter <swenson.peter@epa.gov>
Sent: Monday, July 09, 2018 12:18 PM
To: Kavalec, Tiffani <Tiffani.Kavalec@epa.ohio.gov>; Alexander, Cathy <cathy.alexander@epa.ohio.gov>
Cc: Chruscicki, Jean <chruscicki.jean@epa.gov>; Hall, Brian <brian.hall@epa.ohio.gov>
Subject: 303(d) approval letter

Hello Tiffani and Cathy

Attached is USEPA's approval of Ohio EPA's 2018 303(d) list. A hard copy will be coming to you by mail.

Please let me know if you have any questions.

Thank-you

Peter Swenson (WW-16J)
Chief, Watersheds and Wetlands Branch
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604
312-886-0236
swenson.peter@epa.gov

Did You Know: Children of parents who talk to their teens about drugs are
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Message

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Sent: 7/12/2018 2:49:01 PM
To: cathy.alexander@epa.ohio.gov
Subject: RE: 303(d) approval letter

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Sent: Monday, July 09, 2018 12:13 PM
To: Swenson, Peter <swenson.peter@epa.gov>; Chruscicki, Jean <chruscicki.jean@epa.gov>
Subject: RE: 303(d) approval letter

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Cathy

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Sent: Monday, July 09, 2018 12:18 PM
To: Kavalec, Tiffani <Tiffani.Kavalec@epa.ohio.gov>; Alexander, Cathy <cathy.alexander@epa.ohio.gov>
Cc: Chruscicki, Jean <chruscicki.jean@epa.gov>; Hall, Brian <brian.hall@epa.ohio.gov>
Subject: 303(d) approval letter

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Thank-you

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JOHN R. KASICH
GOVERNOR
STATE OF OHIO

Executive Order 2018-09K

Taking Steps to Protect Lake Erie

WHEREAS, The Ohio Environmental Protection Agency ("OEPA") designated the open waters of the Western Basin of Lake Erie as Impaired in the 2018 Ohio Integrated Water Quality Monitoring and Assessment Report" pursuant to Section 303(d) of the Federal Water Pollution Control Act; and

WHEREAS, the Great Lakes Water Quality Agreement (GLWQA) Annex 4 has established the Total Phosphorus (TP) target load for the Maumee River at Waterville to be 860 metric tons (MT); and

WHEREAS, the 2017 Watershed Monitoring Report based on monitoring data provided by USGS indicates a Maumee River 2017 Total Phosphorus load of 1800 MT or 113% above the Annex 4 target, exceeding the Annex 4 target three of the last four years; and

WHEREAS, the OEPA through water quality monitoring data has identified specific watersheds within the Maumee River Basin which exceed by two to three times the Annex 4 TP target; and

WHEREAS, the State of Ohio recognizes that a "nutrient is a nutrient" regardless of source and has adopted the Ohio Domestic Action Plan required by the GLWQA as the implementation plan for meeting the Annex 4 nutrient reduction goals, recommends a combination of voluntary, incentive and regulatory actions will be necessary to achieve the Annex 4 goals; and

WHEREAS, the Director of the Ohio Department of Agriculture ("ODA") is empowered by Section 939.02 of the Revised Code to adopt administrative rules that establish technically feasible and economically reasonably standards to achieve a level of management and conservation practices in farming operations that will abate wind or water erosion of the soil and abate the degradation of the waters of the state by residual farm products, manure, or soil sediment, including attached substances, and establish criteria for determination of the acceptability of such management and conservation practices; and

WHEREAS, to implement the standards necessary to achieve the management and conservation practices established above, the Director of ODA is authorized pursuant to Section 901:13-1-20 of the Ohio Administrative Code ("OAC") to designate a watershed in distress, though such designation must be consented to by the Ohio Soil and Water Conservation Commission ("the Commission"); and

WHEREAS, in so designating a watershed in distress, the Director of ODA can "set requirements for the storage, handling and land application of manure; and/or the control of the erosion of sediment and substances attached thereto; and associated nutrient management plans for land and operations within the designated watershed boundaries[.]"

NOW THEREFORE, I, John R. Kasich, Governor of the State of Ohio, by virtue of the authority vested in me by the Constitution and laws of the State of Ohio, do hereby order and direct that:

1. The Director of ODA consider whether it is appropriate to seek the consent of the Ohio Soil and Water Conservation Commission to designate the following Hydrologic Unit Code (HUC) watersheds or portions of watersheds in the Maumee River Basin as watersheds in distress due to increased nutrient levels resulting from phosphorus attached to soil sediment:

    a. Platter Creek Watershed (HUC 041000050206);
    b. Little Flat Rock Creek Watershed (HUC 041000071207);
    c. Little Auglaize River Watershed (HUC 0410000706-707-708);
    d. Eagle Creek Watershed (HUC 041000080301-02);
    e. Auglaize River (HUC 04100007);
    f. Blanchard River (HUC 04100008);
    g. St. Mary's (HUC 04100004);
    h. Ottawa River (HUC 0410000703-704-705).

2. If the Ohio Soil and Water Conservation Commission consents to the designations contemplated above, ODA, the Ohio Department of Natural Resources ("ODNR"), and OEPA should recommend a rule package that establishes the following for watersheds so designated due to increased nutrient levels resulting from phosphorus attached to soil sediment:

    a. Nutrient management requirements for all nutrient sources;
    b. Development of associated management plans for agricultural land and operations within the designated watershed boundaries;
    c. Requirements for the storage, handling, land application, and control of residual farm products, manure and erosion of sediment and substances attached thereto within the designated watershed boundaries.

ED_002091_00000886-00002

I signed this order on _____, 2018, in Columbus, Ohio and it will not expire unless it is rescinded.

_____
John R. Kasich, Governor

ATTEST:

_____
Jon Husted, Secretary of State

ED_002091_00000886-00003

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

INTRODUCTION AND SUMMARY

Defendants oppose Plaintiffs' Motion for Leave to File Supplemental Complaint, Doc. 36, because both of Plaintiffs' proposed supplemental counts fail to state a claim upon which relief may be granted. First, both counts seek to challenge EPA's approval of Ohio's 2016 list of impaired waters, but EPA's July 9, 2018, approval of Ohio's 2018 list supersedes the 2016 list and moots Plaintiffs' claims. Second, Plaintiffs' proposed supplemental count one, a claim under the Administrative Procedure Act ("APA"), fails to state a claim because Plaintiffs fail to identify a final agency action. Although EPA's approval of Ohio's 2016 list is a final agency action as to the listing of impaired waters, Plaintiffs are not challenging that decision. Instead, Plaintiffs argue that Ohio decided it would never submit a total maximum daily load ("TMDL") for western Lake Erie and argue that EPA approved that purported "no TMDL" decision. In fact, Ohio made no such decision, nor did EPA. Third, Plaintiffs' proposed supplemental count two, pled in the alternative as a violation of a nondiscretionary duty, fails to state a claim because it, too, rests of the false premise that

Ohio decided it would never submit a TMDL for western Lake Erie. Because Ohio has not "constructively submitted" no TMDL for western Lake Erie, any statutory duty to review that "constructive submission," should such a duty exist, has not been triggered.

EPA further cross-moves for summary judgment on the existing Complaint, which challenges an action – EPA's May 19, 2017, approval of Ohio's 2016 Section 303(d) List absent the inclusion of the open waters of Lake Erie – that has long since been reversed through subsequent action by EPA and the State and is therefore completely moot.

BACKGROUND

A. Statutory and Regulatory Background

As part of the Clean Water Act's ("CWA") cooperative state/federal framework for addressing water quality, each state must identify waters within its boundaries for which existing pollution controls are not stringent enough to meet applicable water quality standards. 33 U.S.C. § 1313(d)(1). Such waters are known as "water quality limited segments" pursuant to 40 C.F.R. § 130.2(j) or colloquially as "impaired

waters." Every two years, a state must submit a list of water quality limited segments still requiring TMDLs. 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(d)(1). Because the list is required by Section 303(d) of the CWA, 33 U.S.C. § 1313(d), it is commonly referred to as the "Section 303(d) list."

Each state must establish a priority ranking for the water quality limited segments on its Section 303(d) list, taking into account the severity of pollution and the uses to be made of those waters. 33 U.S.C. § 1313(d)(1)(A). States must also identify among those waters which ones are targeted for TMDLs within the next two years. 40 C.F.R. § 130.7(b), (d). States are required to establish TMDLs for each water quality limited segment on their Section 303(d) lists, in accordance with the priority ranking. 33 U.S.C. § 1313(d)(1)(C); 40 C.F.R. § 130.7(c)(1). TMDLs are plans that set the quantity of a pollutant that may be introduced into a receiving water without exceeding applicable water quality standards, taking into account seasonal variations and an adequate margin of safety. 33 U.S.C. § 1313(d)(1)(C). Calculations to establish TMDLs are subject to public review. 40 C.F.R. §

130.7(c)(1)(ii).

Ohio, like many states, combines its Section 303(d) list with a water quality report and submits both together as an "integrated report." In *Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017), the court erroneously stated that states identify their impaired waters *and* establish their TMDLs by submitting these integrated reports. 266 F. Supp. 3d at 176.[1] That misreads the statute, regulations, and EPA's guidance. Section 303(d) lists and integrated reports on the one hand, and TMDLs on the other, are distinct and very different documents and actions. Section 1313(d)(1)(A) requires states to "identify" impaired waters; section 1313(d)(1)(C) then requires states to "establish" for those identified waters a TMDL.

EPA regulations carry forward this distinction. In 40 C.F.R. § 130.7, subsection (b) addresses the "identification and priority setting for water quality-limited segments still requiring TMDLs," *i.e.*, the Section 303(d) list, while subsection (c) addresses the TMDLs

[1] *See also* April 11, 2018, Order, Doc. 29 at 8.

themselves. Thus, while an integrated report typically contains the Section 303(d) list, including a priority ranking of water quality limited segments still requiring TMDLs and the state's schedule for which TMDLs will be developed over the next two years, the TMDLs themselves are not part of the integrated report (or the Section 303(d) list), nor are they typically submitted with that report.

The timing provisions for Section 303(d) lists and for TMDLs are also distinct. The statute sets a deadline for the initial list of "waters identified" and the initial "loads established" based on when EPA first identifies relevant pollutants under Section 304(a)(2)(D) of the Act, but otherwise Section 303(d) lists and TMDLs are due "from time to time" under the statute. 33 U.S.C. § 1313(d)(2). EPA regulations require states to submit Section 303(d) lists every two years, but there is no similar regulatory deadline for states to submit additional TMDLs. 40 C.F.R. § 130.7(d)(1). Instead, TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." *Id.* There is no statutory or regulatory timeframe, deadline, or other restriction on

the timing for states to submit TMDLs, or for states and EPA to determine schedules.

Therefore, as explained by longstanding EPA guidance, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, at 63 (July 29, 2005) ("2006 Assessment Guidance"), available at https://www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf.[2] This guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57. EPA has also explained that "[i]n some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the

[2] The 2006 Assessment Guidance focuses on how to assess, categorize, and report on water quality attainment and supporting data and information. 2006 Assessment Guidance at 6. It does not address how to develop or submit TMDLs.

applicable standard is met)." *Id.*

Once a state submits a Section 303(d) list, or a TMDL, EPA must approve or disapprove the submission within 30 days. 33 U.S.C. § 1313(d)(2). If EPA disapproves a Section 303(d) list, EPA must identify the water quality limited segments that should be on the list, and must do so within 30 days after the date of disapproval. *Id.* EPA must then "promptly issue a public notice" and take comment on the water quality limited segments so identified. 40 C.F.R. § 130.7(d)(2). Finally, after considering the comments received, EPA must then make any appropriate revisions to the list. Similarly, if EPA disapproves a state TMDL, EPA must establish its own TMDL within 30 days after EPA's disapproval. *Id.*

If EPA approves a Section 303(d) list or disapproves a list and identifies waters for the state or approves or disapproves a TMDL that has been publicly noticed, those actions are final agency actions that an interested party may challenge under the Administrative Procedure Act. If EPA fails to act, an interested party can sue EPA for its failure to perform "any act or duty under this chapter which is not

discretionary with [EPA]." 33 U.S.C. § 1365(a)(2). However, no such action may be commenced "prior to sixty days after the plaintiff has given notice of such action to the Administrator [of EPA]." *Id.* § 1365(b)(2). EPA's regulations specify the form and content of the required notice. *See, e.g.*, 40 C.F.R. § 135.2(a)(3) (notice must be accomplished by certified mail and sent to specific recipients); 40 C.F.R. § 135.3(b) (notice must identify the statutory provision which requires the nondiscretionary action and describe with "reasonable specificity" the action taken or not taken).

B. Factual Background

Ohio submitted its 2016 integrated report (including its 2016 Section 303(d) list) on October 20, 2016. EPA approved Ohio's 2016 Section 303(d) list on May 19, 2017, but withdrew that approval on January 12, 2018. Ohio supplemented its 2016 Section 303(d) list on May 4, 2018, and EPA approved that amendment on May 10, 2018.

On June 1, 2018, Ohio submitted its 2018 integrated report (and 2018 Section 303(d) list), and on July 9, 2018, EPA approved Ohio's 2018 Section 303(d) list. In both the 2016 Section 303(d) list (as

amended and approved in May 2018) and the 2018 Section 303(d) list, Ohio listed as impaired three assessment units for the open waters of Lake Erie: the Western Basin, the Sandusky Bay area, and the Central Basin. These open water assessment units are in addition to several shoreline assessment units, including public drinking water supply intake zones, that are also identified in both reports as impaired.

ARGUMENT

Although leave to supplement a pleading "shall be freely given when justice so requires," a motion to supplement under Fed. R. Civ. P 15 should be denied if the amendment would be futile, *i.e.*, if the amendment "could not withstand a Rule 12(b)(6) motion to dismiss." *Riverview Health Institute LLC v. Medical Mutual of Ohio*, 601 F.3d 505, 520 (6th Cir. 2010) (internal citations and quotations omitted). Because neither of the proposed additional counts state a claim on which relief may be granted, the amendment would be futile and should be denied.

I. Both of Plaintiffs' Proposed New Counts Are Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Both of Plaintiffs' proposed counts fail to state a claim because

they challenge EPA's approval of Ohio's 2016 Section 303(d) list, but that list (and EPA's approval thereof) has been superseded by the 2018 list (and EPA's approval thereof). In *Blue Water Baltimore*, 266 F. Supp. 3d at 180-181, the court found that EPA's approval of a state's 2014 303(d) list superseded its approval of the preceding 2012 303(d) list, thus mooting plaintiffs' challenge to EPA's approval of the 2012 list. This Court should do the same, and hold that Ohio's 2018 Section 303(d) list, once approved by EPA, supersedes Ohio's 2016 list and moots Plaintiffs' challenges to EPA's approval of the 2016 list.

II. Plaintiffs' Proposed Count One Does Not Challenge a Final Agency Action Reviewable Under the APA.

As this Court has explained, to be "final," an agency action must mark the consummation of the agency's decisionmaking process and must determine rights or obligations from which legal consequences will flow. April 11, 2018, Order, Doc. 29, at 20-21.

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What Ohio EPA actually said is worth quoting in full:

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2016 Integrated Report Amendment at 9 (emphasis added).

This is not a situation where the Court must resolve an ambiguity or draw an inference. The only support offered for the key assertion underlying Plaintiffs' position in fact says the opposite of what Plaintiffs claim. Ohio has neither abandoned its obligation to produce a TMDL for western Lake Erie, nor has Ohio refused to develop a TMDL. Without this factual predicate of an express refusal to develop a TMDL, there can be no EPA action approving the alleged state refusal, as there is no refusal to approve or disapprove.

Second, even if the Court were to ignore Ohio's recognition that it might in the future develop a TMDL, and find Plaintiffs' assertion that

the lack of a current TMDL submission necessarily constitutes a refusal to do so, Plaintiffs' proposed count one is still futile because there was no final agency action regarding the purported "no TMDL" statement.

In its approval letter, EPA noted that the amended Section 303(d) list "discusses how Ohio will continue to address nutrient loadings to Lake Erie." Letter from Cathy Stepp, Regional Administrator, to Tiffani Kavalec, Chief, Division of Surface Water, Ohio EPA, May 10, 2018, at 1-2. But EPA's letter goes on to state that EPA finds that Ohio EPA's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking" under 40 C.F.R. § 130.7(b)(4). *Id.* at 2.

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statute "provides no specific mechanism for reviewing this prioritization." *Sierra Club v. McLerran*, No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015). EPA's acknowledgement that Ohio did prioritize the impaired waters of Lake Erie (which Plaintiffs do not challenge) does not itself represent either the consummation of EPA's decisionmaking on whether Ohio has abandoned its obligation to produce a TMDL or represent a conclusion that determines rights or obligations or has legal consequences. In fact, Plaintiffs themselves note that EPA did not "even mention[] the State of Ohio's failure to comply with its TMDL responsibilities." Pl. Mem. at 2. Contrary to Plaintiffs' assertions, EPA's lack of reference to the absence of a submission that Ohio did not yet have any obligation to provide is not surprising. Instead, EPA simply recognized what Ohio EPA did: the state included the segments on its list of impaired waters impaired "still requiring TMDLs", 40 C.F.R. § 130.7(b)(2), and assigned a prioritization to the open waters of western Lake Erie.

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final agency action. The fact is that Ohio was not obligated to submit a TMDL simultaneously with its submission of its Section 303(d) list and thus EPA had no need to approve or reject that non-submission.

Because Plaintiffs cannot support their assertion that Ohio decided it will not develop any TMDL for western Lake Erie, and because EPA has not taken any final agency action regarding Ohio's statement that a TMDL "will ultimately be required," Plaintiffs' proposed count one fails to state a claim and allowing Plaintiffs to supplement the complaint would be futile.

III. Plaintiffs' Proposed Count Two Does Not Identify A Nondiscretionary Duty.

Plaintiffs' proposed count two asserts that EPA violated a nondiscretionary duty to act within 30 days because Ohio EPA allegedly decided "not to undertake development of a TMDL for western Lake Erie." Proposed Supplemental Compl. ¶ 103.

Plaintiffs' motion to add their proposed count two should be denied for their failure to follow the required process. As EPA has previously explained, such a claim requires 60-day statutory notice before filing suit, 33 U.S.C. § 1365(b)(2): this requirement cannot be

waived. Plaintiffs did not provide the requisite notice.

Even if Plaintiff had somehow satisfied that requirement, Plaintiffs' proposed count two still fails to state a claim. In their motion, Plaintiffs explain that they seek to include their proposed count two "as a protective measure" in the event that there is no final agency action "regarding Ohio EPA's decision not to submit a TMDL." Pl. Mem. at 11 n.1. Plaintiffs' proposed count two assumes no final agency action by EPA and is therefore based on the same faulty reading of Ohio's amended 2016 Section 303(d) list by assuming that a TMDL must be submitted with a 303(d) list.

Plaintiffs argue that some courts have found that a state's decision not to submit a TMDL is a "constructive submission" of "no TMDL," thereby triggering EPA's nondiscretionary duty to approve or disapprove of that "constructive submission." *See, e.g.*, Proposed Supplemental Compl. ¶ 104. For example, in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984), the court found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure may amount to the 'constructive submission' by that state of no TMDL's

[sic]." *Id.* The long passage of time – six years, in that case – "raises the possibility that the states have determined that TMDL's for Lake Michigan are unnecessary." *Id.* at 997.

Like *Scott*, most courts that have applied the constructive submission theory have looked at a state's entire TMDL program. *See, e.g., Ohio Valley Envir. Coal. v. Pruitt,* No. 17-1430, 2018 WL 3039954 (4th Cir., June 20, 2018) (in light of West Virginia's good faith efforts, "we cannot conclude that West Virginia has 'clearly and unambiguously' refused to submit TMDLs"). Plaintiffs do not assert that Ohio has failed to submit any TMDLs, but instead point to the only court decision that has considered whether a state could trigger a constructive submission by refusing to submit a single, particular TMDL: *McLerran*. That decision held that "a state's failure to prepare a particular TMDL [can] ripen into a constructive submission." 2015 WL 1188522 at *7. However, as noted above, *McLerran* found that the State of Washington had not constructively submitted no TMDL, because there were "information gaps . . . such that [the state] could not confidently issue a TMDL at any point in the near future." *Id.* at *8. In particular, the

court noted that the state "lacked sufficient scientific data and had not satisfied certain pre-submission requirements, *i.e.*, public notice and consultation." *Id.* In contrast, if a TMDL were "essentially complete and ready for submission, a last-minute pivot to an illusory alternative may indicate a decision to abandon the TMDL." *Id.*

Here, Ohio has only recently listed western Lake Erie as impaired, and Plaintiffs do not, and cannot, contend that Ohio has already developed the scientific data necessary for a TMDL, much less that Ohio has completed the required public notice requirements. Thus, even if the Court were to accept the constructive submission theory and the *McLerran* court's extension of that theory to a single TMDL, Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.

IV. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

As noted in Defendants' May 11, 2018, Status Report, Doc. 30 at 2, EPA's May 10, 2018, action approving Ohio's Section 2016 303(d) list, as amended, moots Plaintiffs' claims as pled in Plaintiffs' original complaint, to the extent the Court has jurisdiction over those claims.

See April 11, 2018, Order (Doc. 29) at 24 n.15 (citing *Anacostia Riverkeeper, Inc. v. Jackson*, 713 F. Supp.2d 50, 51 n.1 (D.D.C. 2010)). If the Court denies Plaintiffs' motion to supplement the complaint, nothing is left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should deny Plaintiffs' motion to file a supplemental complaint because neither of Plaintiffs' proposed supplemental counts state a claim upon which relief may be granted, and should grant Defendants' cross motion for summary judgment and terminate the case because EPA's approval of Ohio's amended 2016 Section 303(d) list moots Plaintiffs' original claims.

Respectfully submitted this 10th day of July 2018.

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United States Department of Justice
Environment & Natural Resources Division

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Attorneys for Defendants

CERTIFICATE OF SERVICE

I hereby certify that on July 10, 2018, I electronically filed the foregoing MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
Daniel R. Dertke

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

INTRODUCTION AND SUMMARY

Defendants oppose Plaintiffs' Motion for Leave to File Supplemental Complaint, Doc. 36, because both of Plaintiffs' proposed supplemental counts fail to state a claim upon which relief may be granted. First, both counts seek to challenge EPA's approval of Ohio's 2016 list of impaired waters, but EPA's July 9, 2018, approval of Ohio's 2018 list supersedes the 2016 list and moots Plaintiffs' claims. Second, Plaintiffs' proposed supplemental count one, a claim under the Administrative Procedure Act ("APA"), fails to state a claim because Plaintiffs fail to identify a final agency action. Although EPA's approval of Ohio's 2016 list is a final agency action as to the listing of impaired waters, Plaintiffs are not challenging that decision. Instead, Plaintiffs argue that Ohio decided it would never submit a total maximum daily load ("TMDL") for western Lake Erie and argue that EPA approved that purported "no TMDL" decision. In fact, Ohio made no such decision, nor did EPA. Third, Plaintiffs' proposed supplemental count two, pled in the alternative as a violation of a nondiscretionary duty, fails to state a claim because it, too, rests of the false premise that

Ohio decided it would never submit a TMDL for western Lake Erie. Because Ohio has not "constructively submitted" no TMDL for western Lake Erie, any statutory duty to review that "constructive submission," should such a duty exist, has not been triggered.

EPA further cross-moves for summary judgment on the existing Complaint, which challenges an action – EPA's May 19, 2017, approval of Ohio's 2016 Section 303(d) List absent the inclusion of the open waters of Lake Erie – that has long since been reversed through subsequent action by EPA and the State and is therefore completely moot.

BACKGROUND

A. Statutory and Regulatory Background

As part of the Clean Water Act's ("CWA") cooperative state/federal framework for addressing water quality, each state must identify waters within its boundaries for which existing pollution controls are not stringent enough to meet applicable water quality standards. 33 U.S.C. § 1313(d)(1). Such waters are known as "water quality limited segments" pursuant to 40 C.F.R. § 130.2(j) or colloquially as "impaired

waters." Every two years, a state must submit a list of water quality limited segments still requiring TMDLs. 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(d)(1). Because the list is required by Section 303(d) of the CWA, 33 U.S.C. § 1313(d), it is commonly referred to as the "Section 303(d) list."

Each state must establish a priority ranking for the water quality limited segments on its Section 303(d) list, taking into account the severity of pollution and the uses to be made of those waters. 33 U.S.C. § 1313(d)(1)(A). States must also identify among those waters which ones are targeted for TMDLs within the next two years. 40 C.F.R. § 130.7(b), (d). States are required to establish TMDLs for each water quality limited segment on their Section 303(d) lists, in accordance with the priority ranking. 33 U.S.C. § 1313(d)(1)(C); 40 C.F.R. § 130.7(c)(1). TMDLs are plans that set the quantity of a pollutant that may be introduced into a receiving water without exceeding applicable water quality standards, taking into account seasonal variations and an adequate margin of safety. 33 U.S.C. § 1313(d)(1)(C). Calculations to establish TMDLs are subject to public review. 40 C.F.R. §

130.7(c)(1)(ii).

Ohio, like many states, combines its Section 303(d) list with a water quality report and submits both together as an "integrated report." In *Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017), the court erroneously stated that states identify their impaired waters *and* establish their TMDLs by submitting these integrated reports. 266 F. Supp. 3d at 176.[1] That misreads the statute, regulations, and EPA's guidance. Section 303(d) lists and integrated reports on the one hand, and TMDLs on the other, are distinct and very different documents and actions. Section 1313(d)(1)(A) requires states to "identify" impaired waters; section 1313(d)(1)(C) then requires states to "establish" for those identified waters a TMDL.

EPA regulations carry forward this distinction. In 40 C.F.R. § 130.7, subsection (b) addresses the "identification and priority setting for water quality-limited segments still requiring TMDLs," *i.e.*, the Section 303(d) list, while subsection (c) addresses the TMDLs

[1] *See also* April 11, 2018, Order, Doc. 29 at 8.

themselves. Thus, while an integrated report typically contains the Section 303(d) list, including a priority ranking of water quality limited segments still requiring TMDLs and the state's schedule for which TMDLs will be developed over the next two years, the TMDLs themselves are not part of the integrated report (or the Section 303(d) list), nor are they typically submitted with that report.

The timing provisions for Section 303(d) lists and for TMDLs are also distinct. The statute sets a deadline for the initial list of "waters identified" and the initial "loads established" based on when EPA first identifies relevant pollutants under Section 304(a)(2)(D) of the Act, but otherwise Section 303(d) lists and TMDLs are due "from time to time" under the statute. 33 U.S.C. § 1313(d)(2). EPA regulations require states to submit Section 303(d) lists every two years, but there is no similar regulatory deadline for states to submit additional TMDLs. 40 C.F.R. § 130.7(d)(1). Instead, TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." *Id.* There is no statutory or regulatory timeframe, deadline, or other restriction on

the timing for states to submit TMDLs, or for states and EPA to determine schedules.

Therefore, as explained by longstanding EPA guidance, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, at 63 (July 29, 2005) ("2006 Assessment Guidance"), available at https://www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf.[2] This guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57. EPA has also explained that "[i]n some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the

[2] The 2006 Assessment Guidance focuses on how to assess, categorize, and report on water quality attainment and supporting data and information. 2006 Assessment Guidance at 6. It does not address how to develop or submit TMDLs.

applicable standard is met)." *Id.*

Once a state submits a Section 303(d) list, or a TMDL, EPA must approve or disapprove the submission within 30 days. 33 U.S.C. § 1313(d)(2). If EPA disapproves a Section 303(d) list, EPA must identify the water quality limited segments that should be on the list, and must do so within 30 days after the date of disapproval. *Id.* EPA must then "promptly issue a public notice" and take comment on the water quality limited segments so identified. 40 C.F.R. § 130.7(d)(2). Finally, after considering the comments received, EPA must then make any appropriate revisions to the list. Similarly, if EPA disapproves a state TMDL, EPA must establish its own TMDL within 30 days after EPA's disapproval. *Id.*

If EPA approves a Section 303(d) list or disapproves a list and identifies waters for the state or approves or disapproves a TMDL that has been publicly noticed, those actions are final agency actions that an interested party may challenge under the Administrative Procedure Act. If EPA fails to act, an interested party can sue EPA for its failure to perform "any act or duty under this chapter which is not

discretionary with [EPA]." 33 U.S.C. § 1365(a)(2). However, no such action may be commenced "prior to sixty days after the plaintiff has given notice of such action to the Administrator [of EPA]." *Id.* § 1365(b)(2). EPA's regulations specify the form and content of the required notice. *See, e.g.*, 40 C.F.R. § 135.2(a)(3) (notice must be accomplished by certified mail and sent to specific recipients); 40 C.F.R. § 135.3(b) (notice must identify the statutory provision which requires the nondiscretionary action and describe with "reasonable specificity" the action taken or not taken).

B. Factual Background

Ohio submitted its 2016 integrated report (including its 2016 Section 303(d) list) on October 20, 2016. EPA approved Ohio's 2016 Section 303(d) list on May 19, 2017, but withdrew that approval on January 12, 2018. Ohio supplemented its 2016 Section 303(d) list on May 4, 2018, and EPA approved that amendment on May 10, 2018.

On June 1, 2018, Ohio submitted its 2018 integrated report (and 2018 Section 303(d) list), and on July 9, 2018, EPA approved Ohio's 2018 Section 303(d) list. In both the 2016 Section 303(d) list (as

amended and approved in May 2018) and the 2018 Section 303(d) list, Ohio listed as impaired three assessment units for the open waters of Lake Erie: the Western Basin, the Sandusky Bay area, and the Central Basin. These open water assessment units are in addition to several shoreline assessment units, including public drinking water supply intake zones, that are also identified in both reports as impaired.

ARGUMENT

Although leave to supplement a pleading "shall be freely given when justice so requires," a motion to supplement under Fed. R. Civ. P 15 should be denied if the amendment would be futile, *i.e.*, if the amendment "could not withstand a Rule 12(b)(6) motion to dismiss." *Riverview Health Institute LLC v. Medical Mutual of Ohio*, 601 F.3d 505, 520 (6th Cir. 2010) (internal citations and quotations omitted). Because neither of the proposed additional counts state a claim on which relief may be granted, the amendment would be futile and should be denied.

I. Both of Plaintiffs' Proposed New Counts Are Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Both of Plaintiffs' proposed counts fail to state a claim because

they challenge EPA's approval of Ohio's 2016 Section 303(d) list, but that list (and EPA's approval thereof) has been superseded by the 2018 list (and EPA's approval thereof). In *Blue Water Baltimore*, 266 F. Supp. 3d at 180-181, the court found that EPA's approval of a state's 2014 303(d) list superseded its approval of the preceding 2012 303(d) list, thus mooting plaintiffs' challenge to EPA's approval of the 2012 list. This Court should do the same, and hold that Ohio's 2018 Section 303(d) list, once approved by EPA, supersedes Ohio's 2016 list and moots Plaintiffs' challenges to EPA's approval of the 2016 list.

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final agency action. The fact is that Ohio was not obligated to submit a TMDL simultaneously with its submission of its Section 303(d) list and thus EPA had no need to approve or reject that non-submission.

Because Plaintiffs cannot support their assertion that Ohio decided it will not develop any TMDL for western Lake Erie, and because EPA has not taken any final agency action regarding Ohio's statement that a TMDL "will ultimately be required," Plaintiffs' proposed count one fails to state a claim and allowing Plaintiffs to supplement the complaint would be futile.

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waived. Plaintiffs did not provide the requisite notice.

Even if Plaintiff had somehow satisfied that requirement, Plaintiffs' proposed count two still fails to state a claim. In their motion, Plaintiffs explain that they seek to include their proposed count two "as a protective measure" in the event that there is no final agency action "regarding Ohio EPA's decision not to submit a TMDL." Pl. Mem. at 11 n.1. Plaintiffs' proposed count two assumes no final agency action by EPA and is therefore based on the same faulty reading of Ohio's amended 2016 Section 303(d) list by assuming that a TMDL must be submitted with a 303(d) list.

Plaintiffs argue that some courts have found that a state's decision not to submit a TMDL is a "constructive submission" of "no TMDL," thereby triggering EPA's nondiscretionary duty to approve or disapprove of that "constructive submission." *See, e.g.*, Proposed Supplemental Compl. ¶ 104. For example, in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984), the court found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure may amount to the 'constructive submission' by that state of no TMDL's

[sic]." *Id.* The long passage of time – six years, in that case – "raises the possibility that the states have determined that TMDL's for Lake Michigan are unnecessary." *Id.* at 997.

Like *Scott*, most courts that have applied the constructive submission theory have looked at a state's entire TMDL program. *See, e.g., Ohio Valley Envir. Coal. v. Pruitt,* No. 17-1430, 2018 WL 3039954 (4th Cir., June 20, 2018) (in light of West Virginia's good faith efforts, "we cannot conclude that West Virginia has 'clearly and unambiguously' refused to submit TMDLs"). Plaintiffs do not assert that Ohio has failed to submit any TMDLs, but instead point to the only court decision that has considered whether a state could trigger a constructive submission by refusing to submit a single, particular TMDL: *McLerran*. That decision held that "a state's failure to prepare a particular TMDL [can] ripen into a constructive submission." 2015 WL 1188522 at *7. However, as noted above, *McLerran* found that the State of Washington had not constructively submitted no TMDL, because there were "information gaps . . . such that [the state] could not confidently issue a TMDL at any point in the near future." *Id.* at *8. In particular, the

court noted that the state "lacked sufficient scientific data and had not satisfied certain pre-submission requirements, *i.e.*, public notice and consultation." *Id.* In contrast, if a TMDL were "essentially complete and ready for submission, a last-minute pivot to an illusory alternative may indicate a decision to abandon the TMDL." *Id.*

Here, Ohio has only recently listed western Lake Erie as impaired, and Plaintiffs do not, and cannot, contend that Ohio has already developed the scientific data necessary for a TMDL, much less that Ohio has completed the required public notice requirements. Thus, even if the Court were to accept the constructive submission theory and the *McLerran* court's extension of that theory to a single TMDL, Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.

IV. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

As noted in Defendants' May 11, 2018, Status Report, Doc. 30 at 2, EPA's May 10, 2018, action approving Ohio's Section 2016 303(d) list, as amended, moots Plaintiffs' claims as pled in Plaintiffs' original complaint, to the extent the Court has jurisdiction over those claims.

See April 11, 2018, Order (Doc. 29) at 24 n.15 (citing *Anacostia Riverkeeper, Inc. v. Jackson*, 713 F. Supp.2d 50, 51 n.1 (D.D.C. 2010)). If the Court denies Plaintiffs' motion to supplement the complaint, nothing is left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should deny Plaintiffs' motion to file a supplemental complaint because neither of Plaintiffs' proposed supplemental counts state a claim upon which relief may be granted, and should grant Defendants' cross motion for summary judgment and terminate the case because EPA's approval of Ohio's amended 2016 Section 303(d) list moots Plaintiffs' original claims.

Respectfully submitted this 10th day of July 2018.

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CERTIFICATE OF SERVICE

I hereby certify that on July 10, 2018, I electronically filed the foregoing MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
Daniel R. Dertke

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

TABLE OF CONTENTS

TABLE OF AUTHORITIES ii

INTRODUCTION AND SUMMARY 1

BACKGROUND 2

ARGUMENT 5

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie 5

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act On Ohio's Plans To Address Nutrient Pollution in Lake Erie 12

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List 13

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie 16

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment 19

CONCLUSION 20

TABLE OF AUTHORITIES

CASES

Blue Water Baltimore v. Pruitt,
266 F. Supp. 3d 174, 180-81 (D.D.C. 2017),
judgment amended, 293 F. Supp. 3d 1 (D.D.C. 2017) 14

Ohio Valley Envtl. Coalition, Inc. v. Pruitt,
893 F.3d 225 (4th Cir. 2018) 5, 6, 7

San Francisco Baykeeper v. Whitman,
297 F.3d 877 (9th Cir. 2002) 6, 11

Scott v. Hammond,
741 F.2d 992 (7th Cir. 1984) 6, 7, 11, 12

Sierra Club v. McLerran,
No. 11-cv-1759, 2015 WL 1188522
(W.D. Wash., March 16, 2015) 7, 8, 9, 10, 17, 18

STATUTES

33 U.S.C. § 1313(d)(2) 3, 6

33 U.S.C. § 1314(a)(2)(D) 3

CODE OF FEDERAL REGULATIONS

40 C.F.R. § 130.7(b)(4) 4, 17

40 C.F.R. § 130.7(d)(1) 3

FEDERAL REGISTER

57 Fed. Reg. 33,040 (July 24, 1992) 5

LEGISLATIVE HISTORY

H. R. Rep. No. 92-911 (1972) 4

INTRODUCTION AND SUMMARY

The two motions before the Court essentially ask whether Ohio has made a "constructive submission" of no TMDL for nutrient pollution in the open waters of western Lake Erie. Plaintiffs' two new proposed claims assert that Ohio has not yet begun a TMDL for the lake's open waters, but Plaintiffs have not and cannot credibly assert that Ohio has clearly and unambiguously refused to ***ever*** prepare such a TMDL, and that makes all the difference. Ohio has not refused to prepare a TMDL for the western basin of Lake Erie and indeed expressly recognizes that a TMDL is needed and may be developed in the future. Therefore, even under the most expansive expressions of the so-called constructive submission theory articulated in *McLerran* and the other cases Plaintiffs cite, Plaintiffs' proposed Count Two fails to assert the facts necessary to state a claim that Ohio has constructively submitted no TMDL.

Plaintiffs also assert that when EPA approved Ohio's 2016 Section 303(d) list of impaired waters, EPA also approved certain statements Ohio made in its 2016 Integrated Report. Although EPA certainly

acknowledged Ohio's statements regarding the State's plans to address nutrient pollution in the lake's open waters, EPA neither approved nor disapproved them. Instead, EPA followed its regulations, which require EPA to approve or disapprove of the actual list of impaired waters still requiring TMDLs and the inclusion of priority rankings, *i.e.*, Ohio's Section 303(d) list. EPA has no formal role in reviewing the other parts of a state's Integrated Report. Plaintiffs' proposed Count One therefore fails to state a claim because Plaintiffs cannot point to any judicially reviewable final agency action regarding Ohio's plans to reduce nutrient pollution.

Finally, even if the Court finds that EPA did take final agency action regarding Ohio's plans, EPA's approval of Ohio's 2018 Section 303(d) list supersedes its approval of Ohio's 2016 list, which moots Plaintiffs' claim.

BACKGROUND

As we explained in our opening memorandum, ECF No. 39, the CWA sets a deadline for states to submit their initial TMDLs and Section 303(d) lists based on when EPA first identifies relevant

pollutants under 33 U.S.C. § 1314(a)(2)(D). After that, the statute requires states to submit subsequent Section 303(d) lists and TMDLs "from time to time." 33 U.S.C. § 1313(d)(2). While EPA's regulations specify that states must submit Section 303(d) lists every two years, *see* 40 C.F.R. § 130.7(d)(1), there is no similar regulatory requirement for TMDLs. Nor is there any requirement for states to submit additional TMDLs with their Section 303(d) list or as part of an integrated report. Instead, EPA's regulations simply provide that TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." 40 C.F.R. § 130.7(d)(1). Thus, there is no firm statutory or regulatory timeframe, deadline, or other restriction on the timing for states to submit TMDLs.

Nor is there any requirement for a state to begin work on a TMDL as soon as a water quality limited segment is listed as impaired. Plaintiffs argue that because Ohio has not yet started work on a nutrient TMDL, Ohio is not complying with a statutory requirement "to promulgate a [TMDL]." Pl. Combined Memo (ECF No. 40) at 1; *see also*

id. at 3 (asserting Ohio's "refusal to begin the TMDL process" is "illegal"). But in assembling their Section 303(d) lists, states must identify "waters targeted for TMDL development in the next two years," which allows waters to remain on a state's list for *more* than 2 years before waters are "targeted for TMDLs development." 40 C.F.R. § 130.7(b)(4). And as explained by longstanding EPA guidance interpreting the statutory and regulatory framework, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* at 63 (July 29, 2005) ("2006 Assessment Guidance") (relevant excerpts attached as Exhibit 1).

There is good reason for this flexibility because, as Congress understood when it enacted the TMDL program into law, "it is extremely difficult to apportion the discharge load from all point sources along a waterway or section of a waterway." H. R. Rep. No. 92-911, at 105-06 (1972). This is especially true of "'complex' TMDLs that may cover a large watershed or address particularly challenging pollution

problems," as opposed to comparatively "routine or 'simple' TMDLs that may be developed as part of an NPDES permit reissuance." Surface Water Toxics Control Program and Water Quality Planning and Management Program, 57 Fed. Reg. 33,040, 33,044 (July 24, 1992). For those TMDLs that require "complex analysis," it is appropriate to "allow time to collect necessary information and complete the analysis." 2006 Assessment Guidance at 63; *see also Ohio Valley Envtl. Coalition, Inc. v. Pruitt*, 893 F.3d 225, 231 n.4 (4th Cir. 2018) ("TMDLs may require substantial time and resources to develop."). The same guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57.

ARGUMENT

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie.

Plaintiffs repeatedly argue that Ohio has refused to begin the TMDL process for the open waters of western Lake Erie. *See, e.g.*, Pl. Combined Memo at 2, 3, 4, 5, 6. But, as explained below, the relevant legal question is whether Ohio has "'clearly and unambiguously'"

indicate[d] that it will not 'submit any TMDLs and has no plans to remedy this situation.'" *Ohio Valley Envir. Coal.,* 893 F.3d at 230 (quoting *S.F. Baykeeper v. Whitman*, 297 F.3d 877, 882 (9th Cir. 2002)). Plaintiffs have not and cannot point to any statement, action, or inaction by Ohio that clearly and unambiguously shows that Ohio will never prepare a TMDL for nutrient pollution in the open waters of western Lake Erie.

Plaintiffs rely on the constructive submission theory, which began in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984). In *Scott*, the State of Illinois had failed to submit any TMDLs, not even the initial ones for which the CWA does impose a deadline. However, the CWA does not provide a cause of action to sue a state if a state fails to submit a TMDL, so the plaintiffs in *Scott* sued EPA. EPA argued that once a state submits a TMDL, EPA must approve or disapprove the submission within 30 days, under 33 U.S.C. § 1313(d)(2), but if a state does not submit anything, EPA has no statutory duty to act. 741 F.2d. at 997-98. The Seventh Circuit found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure

. . . raises the possibility that the states have determined that [TMDLs] . . . are unnecessary." *Id.* at 997.

Almost every court which has adopted the legal fiction of a constructive submission has examined whether a state has abdicated its TMDL program statewide. *See Ohio Valley Envir. Coal.,* 893 F.3d at 229-30 (collecting cases). In a recent decision, the Fourth Circuit Court of Appeals reviewed the constructive submission caselaw and observed that courts "have declined to find a 'constructive submission' of no TMDLs where a state (1) has produced at least some TMDLs and (2) has a credible plan in place to produce others." *Id.* Plaintiffs do not, and cannot, allege that Ohio has failed either of those prongs, let alone both of them.

Plaintiffs instead argue that Ohio has constructively refused to submit a particular TMDL. Only one court, *Sierra Club v. McLerran*, No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015), has indicated that a state like Ohio, with an otherwise robust TMDL program, can nonetheless trigger a constructive submission. No court in this Circuit has adopted the constructive submission theory, much

less *McLerran*'s unprecedented extension of it, and the Court should not do so now. But even if the Court were to adopt the theory, and to take the additional step of following *McLerran*, not even that case supports Plaintiffs' attempt to state a constructive submission claim.

In *McLerran*, the court considered a citizen suit to compel EPA to disapprove the State of Washington's alleged constructive submission of no TMDLs for PCBs in the Spokane River. Although the court went beyond the constructive submission theory as articulated by the Fourth and Seventh Circuits, and other courts, to conclude there could be a constructive submission of no TMDL when a state "clearly and unambiguously indicate[s] that it will not produce a particular TMDL," the court actually held that such a situation had not occurred, even though the Spokane River was first listed for PCBs in 1996. *Id.* at *2, 7-9. In the court's view, where "information gaps persisted such that [the state] could not confidently issue a TMDL at any point in the near future, adopting an alternative may, under some circumstances, represent a reasonable interim measure rather than an abandonment of any future plans to prepare a TMDL." *Id.* at *8.

Assuming for the sake of argument that the Court agrees with *McLerran*'s view of the constructive submission theory, Plaintiffs have not alleged the specific facts necessary to meet *McLerran*'s standard. Ohio's 2018 Integrated Report explains "why a TMDL is not being pursued *immediately*," Ohio 2018 Integrated Water Quality Monitoring and Assessment Report ("2018 Integrated Report") (relevant excerpts attached as Exhibit 2) at D-31 (emphasis added). Ohio also lists most of the lake's assessment units as "Impaired, needs TMDL." *Id.* at J-16. As in *McLerran*, the State has not "abandon[ed] any future plans" to produce a TMDL for the open waters and Plaintiffs have alleged no specific facts to the contrary.

Plaintiffs also claim that Ohio is merely giving "lip service to the idea that it may establish a TMDL at some undetermined future time," Pl. Combined Memo at 1, but Plaintiffs have absolutely no support for that statement, and certainly nothing to show that the State has "clearly and unambiguously *abandoned* its obligation to produce a TMDL." *McLerran*, 2015 WL 1188522, at *7 (emphasis in original). Ohio's 2018 Integrated Report explains in detail the efforts Ohio is

making to address nutrients in Lake Erie. 2018 Integrated Report at J-10. These efforts include the Great Lakes Water Quality Agreement, the Lake Erie Collaborative Agreement, Ohio's Domestic Action Plan for Lake Erie, TMDLs for 22 of the 32 watersheds that feed into the lake, and numerous other nutrient reduction efforts. *Id.* at J-10 to J-15. Plaintiffs have identified nothing in the Clean Water Act that would strip Ohio of its "considerable flexibility" to pursue these nutrient pollution control efforts before developing a TMDL for the western basin of Lake Erie.

Plaintiffs dismiss these efforts out of hand, as simply a means of indefinitely delaying a TMDL, again relying on *McLerran*. Pl. Combined Memo at 1. But *McLerran* cannot save Plaintiffs' constructive submission claim, for two reasons. First, as just explained, the court in *McLerran* found that the State of Washington's exploration of an alternative to a TMDL did *not* amount to a constructive submission of no TMDL. Second, the waterbody in *McLerran* had been on the state's Section 303(d) list for 19 years. 2015 WL 1188522 *10. Here, in contrast, the open waters were first listed this year. While

Plaintiffs may argue that the lake's open waters should have been listed in 2016, they cannot dispute that the obligation to develop a TMDL cannot precede a waterbody's listing as impaired.

If Plaintiffs are allowed to state a claim for a constructive submission by alleging that Ohio has not begun work on a TMDL less than a year after the lake's open waters were listed, the constructive submission theory would be stretched far beyond what any judicial decision, including *McLerran*, has held. It would amount to a rule that a state must begin developing a TMDL as soon as a waterbody is listed. That would upend the states' statutory prioritization process and would go beyond anything that the CWA, EPA's regulations, or the caselaw requires. *Cf. San Francisco Baykeeper v. Whitman*, 297 F.3d 877, 885 (9th Cir. 2002) (Section 303(d) contains no "requirement of simultaneous submission of the list of polluted waters with the TMDL to correct each polluted water"). Such a holding would also effectively place Ohio's water quality program under a proxy conservatorship, something that no court has endorsed, which is precisely why the constructive submission theory has always been predicated on a state's "fail[ure]

over a long period of time to submit" TMDLs required by law. *Scott*, 741 F.2d at 996 (emphasis added).

Instead, Plaintiffs' motion to add their proposed Count Two should be denied because Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.[1]

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

In order for Plaintiffs' proposed Count One to state a claim, Plaintiffs must allege a judicially reviewable final agency action. Plaintiffs argue that the statements Ohio made in its 2016 Integrated Report regarding the State's plans to address nutrient pollution in Lake

[1] Plaintiffs' proposed Count Two suffers from the additional flaw that it only asserts that Ohio's 2016 section 303(d) list is a constructive submission of no TMDL. First Suppl. Compl. ¶¶ 103-104; Pl. Combined Memo at 2, 4, 5. In Argument II we explain why EPA's approval of the 2016 list is not a final agency action with respect to Ohio's nutrient pollution reduction plans and why EPA's approval of Ohio's 2016 list is moot, but a constructive submission argument depends on Ohio's intent, and that should be evaluated based on Ohio's most current statements. In other words, proposed Count Two also fails to state a claim because it fails to assert Ohio's *present* intentions regarding a TMDL for the open waters of western Lake Erie.

Erie amount to a constructive submission for EPA to approve or disapprove, separate and apart from Ohio's 2016 Section 303(d) list of impaired waters. Pl. Combined Memo at 9. Plaintiffs also argue that EPA in fact approved those statements when EPA approved the 2016 list. *Id.*

Plaintiffs' argument presents two problems. First, EPA's approval of Ohio's 2016 list is moot, so if EPA took any reviewable final agency action regarding a constructive submission (which it has not), that final agency action could only be EPA's approval of the 2018 list. Second, even if EPA's approval of the 2016 list is not moot, Ohio's statements regarding its plans to address nutrient pollution in Lake Erie are not a constructive submission of no TMDL, and EPA did not take any final agency action regarding Ohio's statements.

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Like Count Two, Plaintiffs' proposed Count One challenges EPA's approval of Ohio's 2016 Section 303(d) list. Plaintiffs argue that even though EPA has now approved a 2018 list, EPA's approval of the 2016 list is not moot because it is an action that is capable of repetition yet

evading review. Pl. Combined Memo at 7-8. Plaintiffs downplay the mootness argument as a "flurry of procedural claims that amount to nothing," *id.* at 6, but mootness is an essential question of subject matter jurisdiction that a court cannot simply waive aside.

Plaintiffs' challenge to EPA's approval of the 2016 list is moot. *See Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174, 180-81 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017). The plaintiffs in *Blue Water* sought to challenge "the reclassifications in [a] 2012" report, but EPA addressed those reclassifications in "both the 2012 and 2014" reports. 266 F. Supp. 3d at 180-81; *see also id.* (the 2014 report "reiterated the rationale stated in the 2012 [report] regarding the reclassification and de-listings at issue"). The court held that "a decision may be superseded by a subsequent decision based on the same rationale because the subsequent decision replaces the prior decision, rendering it void." *Id.* Just as the 2014 report in *Blue Water* "replace[d] the previous list," *id.*, Ohio's 2018 list replaced its 2016 list, so the 2016 list has "no further legal effect." *Id.*[2] The Court cannot

[2] Plaintiffs add in a footnote that the Court could allow them to amend

order any effective relief with respect to the 2016 list.

Plaintiffs assert that they satisfy the capable of repetition yet evading review exception to mootness. They argue that any legal defect in EPA's approval of the 2016 list is capable of repetition because the approval of the 2018 list "merely duplicates" EPA's prior approval, and that it evades review because it is too short in its duration to litigate. Pl. Combined Memo at 6, 8.

But any reading of Ohio's 2016 submission and EPA's 2016 approval to suggest that Ohio constructively submitted no TMDL by expressly disclaiming any responsibility to develop one, is resoundingly refuted by the 2018 Integrated Report and EPA's 2018 approval. The sole support for Plaintiffs' constructive submission claim – statements taken out of context from Ohio's 2016 Integrated Report and misconstrued as definitive statements that Ohio will never develop a TMDL for the western basin of Lake Erie – are *not* repeated in the 2018

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proposed Count One to address EPA's approval of the 2018 list, as the *Blue Water* court did, Pl. Combined Memo at 9 n.2. EPA agrees that this would resolve any mootness concerns, but that amendment would be futile. As we explain below, when EPA approved Ohio's 2018 list EPA took no action on Ohio's future TMDL plans, so Plaintiffs fail to identify a reviewable final agency action regarding either approval.

Integrated Report. Indeed, as noted *supra* at 9, the 2018 Integrated Report classifies all of the Lake Erie assessment units as "Impaired, needs TMDL." 2018 Integrated Report at J-16. Ohio also wrote that where the nutrient reductions from TMDLs in tributaries to Lake Erie "are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps." *Id.* at J-12. And EPA stated in its 2018 Approval that it "expects that under those circumstances [*i.e.*, the inadequacy of Ohio's current nutrient pollution reduction plans] such 'next steps' *would* include TMDL development for the Lake Erie Assessment Units directly." 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) ("EPA 2018 Approval") (ECF No. 40-1, attached as Exhibit A to Pl. Combined Memo), at 18 (emphasis added); *see also* 2018 Integrated Report at D-31 (recognizing that if the water quality in the western basin fails to improve, "a TMDL may ultimately be required").

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

Even if EPA's approval of Ohio's 2016 list were not moot, EPA's

statements regarding Ohio's plans do not amount to final agency action on whether Ohio constructively submitted no TMDL. Instead, EPA's approval is final agency action on exactly what it purports to be: the State's section 303(d) list of impaired waters, no more, no less.

Plaintiffs point out that EPA made a finding that Ohio's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking." Pl. Combined Memo at 10. As we noted in our opening memo, EPA simply confirms that the state has included a priority ranking that "tak[es] into account the severity of the pollution and uses to be made of such waters." 40 C.F.R. § 130.7(b)(4). EPA does not actually approve the ranking, much less Ohio's "discussion of its prioritization." *See* 2006 Assessment Guidance at 63 ("EPA will review the priority ranking but will not take action to approve or disapprove it."); *McLerran*, 2015 WL 1188522 at *6 (there is "no specific mechanism for reviewing [a state's] prioritization").

Plaintiffs also point to EPA's "blanket determination" that Ohio's 2016 list met the statutory and regulatory requirements. Pl. Combined Memo at 10. Plaintiffs argue that *McLerran* is analogous and refutes

Ohio's "flawed" approach. *id.* at 11, but Plaintiffs skip an essential step: in *McLerran* there was no question that EPA had taken final agency action on whether the state had made a constructive submission. The court in *McLerran* reviewed a separate approval document, issued outside the regular Section 303(d) review process and in response to a specific request to determine whether a state had abandoned a specific TMDL, in which EPA made the explicit conclusion that the state's strategy and task force were "an acceptable alternative to a TMDL." 2015 WL 1188522 at *4. This is materially different than the general statement at issue here, in the context of an Integrated Report. Unlike in *McLerran*, there is no final agency action on whether Ohio has abandoned a TMDL for the open waters of western Lake Erie, and without a final agency action, Count One fails to state a claim.

Plaintiffs raise the possibility of supplementing their complaint with yet a different count, addressing EPA's approval of Ohio's 2018 list, Pl. Combined Memo at 9 n.2, but that would also be futile. *See supra* n.2. In EPA's approval of Ohio's 2018 list, EPA noted Ohio's acknowledgment that TMDLs are required for any assessment units

that are listed as impaired. EPA 2018 Approval at 18. EPA's approval also explains that removing a segment from the Section 303(d) list may be warranted in some cases. For example, a TMDL would not be required if Ohio's efforts "result in the attainment of water quality standards prior to the development of a TMDL." *Id.* However, the substance of EPA's action was, like in 2016, an approval of Ohio's actual Section 303(d) list of impaired waters and its inclusion of a priority ranking of those waters, not an approval of the State's nutrient pollution reduction efforts as an alternative to a TMDL. *Id.* at 20.

Plaintiffs' proposed Count One therefore fails to state a claim, whether Plaintiffs plead Count One as a challenge to EPA's approval of Ohio's 2016 list or as a challenge to EPA's approval of Ohio's 2018 list.

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

Because Plaintiffs' two new proposed claims both fail to state a claim, and because EPA's approval of Ohio's 2016 Section 303(d) list, as amended, mooted Plaintiffs' claim that Ohio failed to list the open waters of western Lake Erie as impaired, there is nothing left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should grant Defendants' cross motion for summary judgment.

Respectfully submitted this 6th day of August 2018.

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CERTIFICATE OF SERVICE

I hereby certify that on August 6, 2018, I electronically filed the foregoing REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
Daniel R. Dertke

Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act

July 29, 2005

Watershed Branch
Assessment and Watershed Protection Division
Office of Wetland, Oceans and Watersheds
Office of Water
United States Environmental Protection Agency

This document provides EPA's guidance for preparing the 2006 Integrated Report. The Integrated Report is intended to satisfy the listing requirements of sections 305(b) and 314 of the Clean Water Act (CWA). This guidance document discusses existing requirements of the CWA and EPA's implementing regulations. Those statutory and regulatory provisions contain legally binding requirements. This document describes those requirements; it does not substitute for them. The recommendations in this document are not binding; indeed, there may be other approaches that would be appropriate in particular circumstances. When EPA makes a decision on a state's section 303(d) list, it will make each decision on a case-by-case basis and will be guided by the applicable requirements of the CWA and implementing regulations, taking into account comments and information presented at that time by interested persons regarding the appropriateness of applying these recommendations to the particular situation.

CONTENTS

Section Page

ABBREVIATIONS AND ACRONYMS v

I. INTRODUCTION 6

II REPORTING REQUIREMENTS UNDER THE CLEAN WATER ACT SECTIONS 303(D), 305(B), 314 AND CORRESPONDING REGULATIONS 9

III. RECOMMENDED ORGANIZATION OF AN INTEGRATED REPORT 13
EXECUTIVE SUMMARY 14
PART A. INTRODUCTION 14
PART B. BACKGROUND INFORMATION 14
PART C SURFACE WATER MONITORING AND ASSESSMENT. 17
PART D. GROUND WATER MONITORING AND ASSESSMENT 25
PART E. PUBLIC PARTICIPATION 25

IV. ISSUES CONCERNING THE DEVELOPMENT AND USE OF AN ASSESSMENT METHODOLOGY 29

V. FIVE-PART CATEGORIZATION OF WATERS 46

VI. REPORTING RESULTS 65

GLOSSARY 66

APPENDIX: DATA ELEMENTS FOR 2006 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT AND DOCUMENTATION FOR DEFINING AND LINKING SEGMENTS TO THE NATIONAL HYDROGRAPHY DATASET
. 70

TABLES

Table		Page
2-1	SUMMARY OF STATE REPORTING REQUIREMENTS UNDER CWA SECTIONS 303(D), 305(B) AND 314 AND CORRESPONDING REGULATIONS	11
3-1	ATLAS	15
3-2	SIZE OF SURFACE WATERS ASSIGNED TO REPORTING CATEGORIES	19
3-3	ATTAINMENT RESULTS CALCULATED USING PROBABILISTIC MONITORING DESIGNS	20
3-4	SEGMENT/POLLUTANT COMBINATIONS REMOVED FROM STATE'S YEAR 2004 SECTION 303(D) LIST	21
3-5	TMDL DEVELOPMENT STATUS	21
3-6	INDIVIDUAL DESIGNATED USE SUPPORT SUMMARY	22
3-7	SIZE OF WATERS IMPAIRED BY CAUSES	22
3-8	SIZE OF WATERS IMPAIRED BY SOURCES	23
3-9	TROPHIC STATUS OF SIGNIFICANT PUBLICLY OWNED LAKES	24
3-10	TRENDS IN LAKE WATER QUALITY	24
3-11	SUMMARY OF WATER QUALITY REPORTING ELEMENTS OF AN INTEGRATED REPORT	27
5-1	RECOMMENDED WATER QUALITY INDICATORS FOR GENERAL DESIGNATED USE CATEGORIES	52
5-2	DOCUMENTATION OF "GOOD CAUSE" TO MOVE SEGMENTS FROM CATEGORY 5.	58

FIGURES

Figure		Page
4-1	USING MULTIPLE TYPES OF DATA TO ASSESS ATTAINMENT	45

EXHIBITS

Exhibit		Page
3-1	RECOMMENDED ORGANIZATION FOR YEAR 2006 INTEGRATED REPORT SUBMITTALS	13
5-1	2006 INTEGRATED REPORTING GUIDANCE: SEGMENT CATEGORIZATION GUIDE	48

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ABBREVIATIONS AND ACRONYMS

ADB	Assessment Database
AU	Assessment Unit
CALM	Consolidated Assessment and Listing Methodology
CPP	Continuing Planning Process
CFR	Code of Federal Regulations
CWA	Clean Water Act
DQO	Data Quality Objectives
DU	Designated Use
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
FGDC	Federal Geographic Data Committee
GPRA	Government Performance Report Act
IR	Integrated Report
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NSSP	National Shellfish Sanitation Program
OW	Office of Water
PPG	Performance Partnership Grant
PWS	Public Water Supply
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RIT	Reach Indexing Tool
SDWA	Safe Drinking Water Act
STORET	STORage and RETrieval
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WQC	Water Quality Criteria
WQS	Water Quality Standard

I. INTRODUCTION

The *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* was developed specifically for the 2006 reporting cycle. The objective of this document is to provide to states, territories, authorized tribes, and interstate commissions[1] a recommended reporting format and a suggested content to be used in developing a single document that integrates the reporting requirements of the Clean Water Act (CWA) section 303(d) and section 305(b). This guidance for developing the Integrated Report (IR) supports the Environmental Protection Agency's (EPA) strategy for achieving a broad-scale, national inventory of water quality conditions. Use of the IR format will serve to report on water quality standards (WQS) attainment status of assessed waters, document availability of data and information for each segment, identify trends in water quality conditions, and provide information to managers in setting priorities for future actions to protect and restore the health of our nation's aquatic resources.

EPA has established a goal that all fifty-six states and territories utilize the integrated reporting format by 2008. EPA continues to promote this comprehensive assessment approach in order to enhance the states' ability to track both programmatic and environmental goals of the CWA, and ideally, to increase the pace of achieving these important environmental goals. This document includes recommendations designed to allow states and other interested stakeholders to track the progress of interim management actions by employing the multi-category reporting framework. By issuing this guidance well in advance of the April 1, 2006 deadline for submission of CWA section 303(d) lists and section 305(b) reports, EPA intends to encourage the broadest possible adoption of the integrated reporting approach.

EPA continues to advocate the use of the five-part categorization format for sorting waters (see box below for brief description and Section V). While this document is more comprehensive than previous Integrated Report Guidance, there are clarifications to the previous (2004) Integrated Report Guidance. Specifically, this guidance provides:

- increased emphasis on the use of the Assessment Database (ADB) or compatible electronic data format (the ADB is being modified to accommodate the recent format, content, and multi-category listing option that the guidance suggests),
- greater clarity on the content and the format of those components of the IR that are recommended and required under CWA sections 303(d), 305(b), and 314,
- greater clarity on issues associated with data solicitation, collection, consideration, and interpretation of water quality standards,
- additional information on the option to report water quality status of individual segments in more than one category (e.g., to show that some designated uses of a water are being attained and some designated uses are not),[2] and
- additional clarity and flexibility on undertaking and reporting alternatives to total maximum daily loads (TMDLs) for attaining water quality standards (e.g., utilization of reporting "Category 4b").

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[1] In the remainder of this document, unless specified otherwise, *states* also refers to authorized tribes, territories and interstates commissions.

[2] In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality, although note that states determine their section 303(d) list (i.e., Category 5) consistent with 40 CFR 130.7 (b)(3).

It is important to note that certain components of the recommended format and content for the 2006 IR document are based on requirements of the CWA and EPA's implementing regulations (e.g., the submission of an approvable section 303(d) list), whereas other components are based on Agency recommendations. In section II of this guidance, those components *required* by the CWA sections 303(d), 305(b), 314, and the corresponding regulations are identified.

In addition to identifying the required components in the 2006 IR submission, this guidance will indicate the components of the 2006 IR document for which EPA recommends states provide an opportunity for *public review and comment* (e.g., the list of impaired waters requiring TMDLs and the assessment methodology used by the state to develop their IR document).

Five Reporting Categories

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Integrated Monitoring and Assessment

The Clean Water Act requires states to provide every two years an assessment of the quality of all their waters (section 305(b)) and a list of those that are impaired or threatened (section 303(d)). To efficiently meet this charge, EPA recommends that states, tribes, and other water quality monitoring collaborators use a combination of monitoring and assessment techniques to:

1. increase the percentage and types of waters assessed;
2. reliably estimate the overall condition of all waters within a state; assess changes over time; and measure progress toward the "fishable-swimmable" goal of the Clean Water Act (section 305(b));
3. comprehensively identify all impaired and threatened waters to support section 303(d) listing requirements; and
4. prioritize site-specific assessments needed to confirm the location of both high quality and impaired waters, and support control, restoration, and prevention actions.

EPA has strongly encouraged states to use integrated monitoring and assessment techniques. These include probability-based assessments and other predictive tools, as well as site-specific assessments. The use of probability assessments can eliminate the risk of generating a biased picture of water quality conditions state-wide and provide a cost-effective bench mark of state water quality program effectiveness. The probability-based assessment results can also help a state decide if it should target certain waters for further assessment or if limited resources for water quality assessment could be used more effectively in other ways. States currently using broad-scale probability-based assessment to complement their site-specific assessment include VA, SC, KY, and IN, among others.

V. FIVE-PART CATEGORIZATION OF WATERS

Use of the Integrated Report format and the use of the five-part categorization scheme envisions that each state provides a comprehensive description of the water quality standards attainment status of all segments within a state. In this guidance, the term "segment" is synonymous with the term "assessment unit" (AU) used in previous IR Guidance. Fundamental to this accounting is the use of a consistent and rational segmentation and geo-referencing approach for all segments including rivers, streams, lakes, wetlands, estuaries, and coastal waters. There is no single approach to the development of a segmentation scheme. However, it is important that the selected segmentation approach be consistent with the state's water quality standards and be capable of providing a spatial scale that is adequate to characterize the WQS attainment status of the segment. The IRG provides some recommendations on how states may develop a segmentation scheme for monitoring, assessing and categorizing water quality conditions. Additionally, the IRG provides recommendations for assigning individual segments to the five-category system.

A. Recommendations for Segmenting Waters

EPA recommends that states consider using the National Hydrography Dataset (NHD)[15] coding scheme to georeference their segments, where segments may comprise part of an NHD reach, an individual NHD reach, or a collection of NHD reaches or parts of reaches. Alternatively, if a state has already developed a comparable Geographic Information System (GIS) framework, EPA requests that states provide any relevant information necessary to allow consistent georeferencing. Additionally, this information should be included in the state's ADB submission. States generally partition waters to represent homogeneity in physical, biological or chemical conditions. This segmentation may reflect an *a priori* knowledge of factors such as flow, channel morphology, substrate, riparian condition, adjoining land uses, confluence with other waterbodies, and potential sources of pollutant loadings (both point and nonpoint). While there is no single default dimension for a segment size, states have utilized these or similar principles when they defined the segments used in their water quality standards. Other factors may include the following:

- The expected natural variability of the measured criteria associated with the WQSs.
- The type of water (e.g., a small stream, a wide river, a tidal and stratified estuary, and coastal shoreline).
- Time of travel of a parcel of water in the waterbody or segment or the magnitude of any tidal excursions.
- The amount of and type of data and information necessary to provide a reasonably accurate characterization of the criteria (or core indicators) associated with the designated uses in the segment or waterbody.
- Any expected changes in significant influences in the watershed (land use, point or nonpoint sources of pollutants).
- Any site-specific concerns such as patchy or unique habitat distribution patterns or biological population distributions.

[15] By making this recommendation, EPA is not equating availability of geographical information on a water segment in the NHD with the legal definition of water of the U.S. under CWA.

Using NHD or other comparable GIS framework, a state should assign a discrete "address" or geo-location to each segment, and document the process used for defining water segments in their methodologies. The physical boundaries (beginning and end points) of a segment should be defined in such a manner that a scientifically valid assessment of each and every segment can be made. The individual size of a segment will vary based upon methodologies. Segments should, however, be larger than a sampling station but small enough to represent a relatively homogenous parcel of water (with regard to hydrology, land use influences, point and nonpoint source loadings, etc.).

B. How should segments be assigned to EPA's five reporting categories?

EPA continues to advocate the use of the five category approach for classifying the WQS attainment status for each segment. In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality. A segment is considered impaired when WQS[16] are not being supported and/or met, and is considered threatened when WQS are not expected to be fully supported and/or met in the next listing cycle. In classifying the status of water quality in 2006, states have the option to report each segment in one or more categories. EPA recommends that states use the following five reporting categories to classify segments as meeting or not meeting applicable WQS:

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Exhibit 5-1 provides an example of how to consider designated uses in the categorization process. EPA believes that the placement of segments into the five reporting categories best allows states to document attainment of applicable WQSs, and to develop monitoring strategies that effectively respond to the needs identified in the assessment, while ensuring that the attainment status of each water quality standard applicable to a particular segment is addressed.

[16] Water quality standards include designated use(s), criteria, and the antidegradation policy. Water quality criteria are important elements of water quality standards and attainment of criteria should also be evaluated in making listing decisions (See 40 CFR 130.7 (b)(3)). Failure to meet WQC warrant listing of waters under section 303(d). EPA has not developed guidance at this time on determining attainment status for antidegradation policies. EPA recognizes that such policies, while an important part of WQS, may not lend themselves to "attainment" determinations on a segment specific basis.

Exhibit 5-1. 2006 Integrated Reporting Guidance: Segment Categorization Guide

The following schematic describes a process states might consider using for determining the placement of segments into the Integrated Report (IR) Categories. The process begins with the assessment of the water quality standard attainment status (designated use(s), criteria) of each segment, and concludes with the placement of each segment into one or more of the five IR Categories. The assessment of the water quality standards attainment status should be consistent with the state's assessment and listing methodology and must ensure that segments not meeting or not expected to meet applicable water quality standards are identified. While the schematic focuses on the assessment of designated uses (DU) for each segment, as previously stated all components of the water quality standard are considered in the categorization of a segment.

Step-by-step process to categorize a segment

1. For each segment, assemble and consider all existing and readily available data and/or information to determine the support status for each individual designated use.
2. Based on the data and information available, make support decisions for each DU in the segment and assign the appropriate symbol (✔+, ✔-, ?, T, 4a, 4b, 4c – See *Symbols and Definitions*).
3. Using the results of Step 2, place the segment into the appropriate category or categories.

Symbols and Definitions:

✔+ = The existing data and information shows that a use ***is supported***.

✔- = The existing data and information shows that a use ***is not supported.***

? = There is insufficient existing data and information to make a use support determination, consistent with the state's assessment and listing methodology.

T = A use in this segment is currently being supported, but is **THREATENED** and it is projected not to be supporting by the next scheduled list submission date.

4a = A TMDL to address a specific segment/pollutant combination has been approved or established by EPA.

4b = A use impairment caused by a pollutant is being addressed by the state through other pollution control requirements.

4c = A use is impaired, but the impairment is not caused by a pollutant.

In the following schematic, each box represents one (1) segment. Each segment may contain one or more DUs. After compiling and considering all existing and readily available data and information for each DU in a specific segment, support decisions are made. Placement of the segment into the appropriate category or categories is based on the sufficiency of the data and information, and the analysis of whether the data demonstrates that the DU is supported.

SEGMENT #1 (1 DU) → **ASSESSMENT**

DU1 → ✔+

SEGMENT #2 (2 DUs) → **ASSESSMENT**

DU1, DU2 → T, ✔-

SEGMENT #3 (3 DUs) → **ASSESSMENT**

DU1, DU2, DU3 → ✔+, ✔+, ?

SEGMENT #4 (4 DUs) → **ASSESSMENT**

DU1, DU2, DU3, DU4 → ✔-, 4a, ?, ✔+

SEGMENT CATEGORIZATION

	DU1	DU2	DU3	DU4	Single Category	Multi-Category
SEGMENT 1	✔+				C1	C1
SEGMENT 2	T	✔-			C5	C5
SEGMENT 3	✔+	✔+	?		C2	C2 & C3
SEGMENT 4	✔-	4a	?	✔+	C5	C5, C4a, C3 & C2

Additional examples are provided below to further illustrate the process of segment classification into multiple categories.

	DU1	DU2	DU3	DU4	Single-Category	Multi-Category
SEGMENT A	✔+	✔+	✔+	✔+	C1	C1
SEGMENT B	✔-	✔-	✔-	✔-	C5	C5
SEGMENT C	✔-	✔-	✔-	T	C5	C5
SEGMENT D	?	?	?	?	C3	C3
SEGMENT E	4b	✔-	✔-	✔-	C5	C4b, C5
SEGMENT F	✔+	✔+	✔-	✔-	C5	C2 & C5
SEGMENT G	✔+	✔+	?	?	C2	C2 &C3
SEGMENT H	?	?	?	✔-	C5	C3 & C5
SEGMENT I	✔+	✔+	✔+	4c	C4c	C2, C4c
SEGMENT J	?	?	4c	T	C5	C3, C4c, & C5
SEGMENT K	✔+	?	?	✔-	C5	C2, C3, & C5
SEGMENT L	✔+	✔+	?	T	C5	C2, C3 & C5
SEGMENT M	✔+	?	4b	✔-	C5	C2, C3, C4b & C5

States have the option to place segments into more than one of the five categories when appropriate. The placement of segments into more than one category will allow states to:

1. Demonstrate progress in the efforts to develop TMDLs,
2. Track progress as segments incrementally attain some, but not all water quality standards, and
3. Identify those segments where there is a need to obtain additional data and information for purposes of determining attainment status of some water quality standards.

While EPA recommends that states adopt and utilize the IR format for reporting the status of their water quality in 2006, states may choose to submit separate 303(d) and 305(b) reports. Furthermore, even if a state chooses to use the IR format, it may choose to place each segment into only one category and rely on the reporting capability of ADB to provide detail on the support status of all individual uses. More detailed guidance for determining the appropriate categorization of segments is provided below. It is important to note that states must consider all existing and readily available data and information in developing their section 303(d) lists, and may choose to assess a segment and assign the segment to a category using data and information other than monitored data (e.g., land use, pollutant loading coefficients, remote sensing data, modeling, etc.).

C. May a state use subcategories or additional categories in its Integrated Report?

Yes, in order to refine their classifications, states may choose to establish new or additional subcategories in addition to the proposed five major categories. For example, a state may decide to divide Category 3 into two subcategories in order to distinguish between those segments for which no data and/or information exist from those segments for which some data and/or information exist, but the data are insufficient to make a determination whether the segment is attaining applicable standards. A state may also choose to use subcategories for segments placed into Category 3 when establishing monitoring priorities. For example, the state may place its segments into different subcategories depending on whether the segment is high, medium, or low priority for follow-up monitoring based on information from probability-based monitoring, landscape or water quality models, land use data, or limited site-specific monitoring.

D. Which segments should states include in Category 1?

Segments may be placed into Category 1 if all designated uses are supported, and no use is threatened. When a segment meets the Category 1 requirements, the state has concluded, consistent with their water quality standards (and their assessment methodology) that sufficient data and information exist to determine that ***all applicable water quality standards are being attained,*** thereby making the use of Category 2 unnecessary for this segment, (see Category 2 discussion below). By placing a segment into Category 1, the state is also concluding that there are adequate data and there is sufficient information to make a determination for any water quality standard, making the use of Category 3 unnecessary for this segment (see Category 3 discussion below).

1. *In order to place a segment in Category 1, must states have specific data and information regarding the status of each water quality standard?*[17]

No. States may describe in either their assessment methodology or in their water quality standards a subset or hierarchy of indicators (as described in the CALM guidance and *Elements of a State Water Monitoring and Assessment Program*) that serve to characterize whether conditions in a segment are capable of meeting all applicable water quality standards.

Because limited resources affect the design of water quality monitoring programs, the state should use a tiered approach to monitoring that includes a core set of baseline indicators selected to represent each applicable designated use, plus supplemental indicators selected according to site-specific or project-specific decision criteria. Using this tiered approach, the state should be able to make the best use of its resources to meet water quality decision needs, including assessing water quality standards attainment and designated use support, identifying needed changes to water quality standards, describing causes and sources of impairments, developing water quality-based source controls, and assessing whether water quality standards are attained. Where the assessment of the supplemental indicators applicable to every designated use in a segment documents that all uses are supported and no use is threatened, that segment should be placed into Category 1.

The monitoring strategy should define a core set of indicators (e.g., water quality parameters) for each water resource type that include physical/habitat, chemical/toxicological, and biological/ecological endpoints as appropriate, that reflect designated uses, and that can be used routinely to assess attainment with applicable water quality standards throughout the state. This core set of indicators is monitored to provide Statewide or basin/watershed level information on the fundamental attributes of the aquatic environment and to assess water quality standards attainment/impairment status. Previously, chemical and physical indicators were emphasized; however, biological monitoring and assessment should assume a prominent role in state monitoring as well.

The monitoring strategy should also describe the process the state uses for identifying supplemental indicators to monitor. Supplemental indicators are often key to identifying causes and sources of impairments and targeting appropriate source controls. These supplemental indicators may include each water quality criteria in the state's water quality standards, any pollutants controlled by the National Pollutant Discharge Elimination System (NPDES), and any other constituents or indicators of concern.

Table 5-1 presents examples of recommended core and supplemental water quality indicators. The Consolidated Assessment and Listing Methodology provides additional information on considerations for selection of supplemental indicators (see http://www.epa.gov/owow/monitoring/calm.html, Chapter 10).

[17] Part D(1) of Section V has been adapted from Section II (Part D) of *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

Table 5-1. Recommended Water Quality Indicators for General Designated Use Categories

	Aquatic Life & Wildlife	Recreation	Drinking Water	Fish/Shellfish Consumption
Recommended Core Indicators	*Condition of biological communities (EPA recommends the use of at least two assemblages) *Dissolved oxygen *Temperature *Conductivity *pH *Habitat assessment *Flow *Nutrients *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Eutrophic condition Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Pathogen indicators (E. coli, enterococci) *Nuisance plant Growth *Flow *Nutrients *Chlorophyll *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Secchi depth Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Trace metals *Pathogens *Nitrates *Salinity *Sediments/TDS *Flow *Landscape conditions (e.g., % cover of land uses)	*Pathogens *Mercury *Chlordane *DDT *PCBs *Landscape conditions (e.g., % cover of land uses)
Supplemental Indicators	*Ambient toxicity *Sediment toxicity *Other chemicals of concern in water column or sediment *Health of organisms	*Other chemicals of concern in water column or sediment *Hazardous chemicals *Aesthetics	*Volatile organic compounds (VOCs) (in reservoirs) *Hydrophyllic pesticides *Nutrients *Other chemicals of concern in water column or sediment *Algae	*Other chemicals of concern in water column or sediment

Source: *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

2. Should states use biosurvey data to list a segment as in attainment for aquatic life use support?

EPA encourages the use of biosurvey data in concert with other specified and supplemental indicators for making an aquatic life use attainment determination. Properly developed biosurvey data can provide direct evidence of aquatic life use support. States may develop, consistent with their assessment methodology and water quality standards, their own bioassessment approach to assessing aquatic life use support. CALM and the 2003 *Elements of a State Water Monitoring and Assessment Program,* recommend the use of at least two assemblages (e.g., fish and macroinvertebrates) in such assessments (See Table 5-1 taken from *Elements of a State Water Monitoring and Assessment Program*).

3. What data should states have to determine that a segment is meeting a "fish consumption" use?

Assessment determinations regarding fish/shellfish consumption uses should be based on parameter-specific data for two groups of pollutants: (1) human pathogens, or indicators thereof, and (2) chemicals with high bioaccumulation potential. Among the bioaccumulative pollutants, EPA recommends mercury, chlordane, Dichloro-diphenyl-trichloroethane (DDT), and polychlorinated biphenyls (PCBs) as core indicators.

E. Which segments should states include in Category 2?

Segments should be placed in Category 2 if the state determines that available data and/or information indicate that some, but not all of the designated uses are supported. If the state has chosen to use the multi-category approach, segments reported in Category 2 may also be reported in Categories 3, 4, or 5 depending upon the results of the analysis of all available data and information on the other uses in the segment. However, if a single-category approach is used, Category 5 takes precedence over all other categories.

F. Which segments should states include in Category 3?

Segments should be placed in Category 3 when there is insufficient available data and/or information to make a use support determination. Category 3 is consistent with and responds to one of the recommendations in the National Research Council's (NRC) report, Assessing the TMDL Approach to Water Quality Management (2001), in which the authors suggested that a category be created for those segments where there existed insufficient data and/or information to assess the use. The state should identify those segments that are higher and lower priority for followup monitoring, and may do so using predicative tools such as probability surveys or landscape models. Category 3 provides states with the flexibility to monitor these segments in a manner consistent with their overall monitoring strategy and schedule.

G. Which segments should states include in Category 4?

Segments may be placed in Category 4 if available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed. States may place segments that meet this definition in one of the following three subcategories:

- a state developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination (Category 4a);

- other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time (Category 4b);
- the non-attainment of any applicable water quality standard for the segment is the result of pollution and is not caused by a pollutant (Category 4c).

1. Which segments should states include in Category 4a?

Segments should be placed in Category 4a when a TMDL to address a specific segment/pollutant combination has been approved or established by EPA. Once the TMDL has been approved or established, the state should implement the TMDL as soon as practicable. Additionally, EPA encourages states to provide monitoring schedules for these segments to ensure that sufficient data and information are obtained to document progress of the implementation actions towards meeting the applicable water quality standards. Segments in this category may also be included in other categories, as appropriate (See Exhibit 5-1).

2. Which segments should states include in Category 4b?

EPA regulations recognize that alternative pollution control requirements may obviate the need for a TMDL. Segments are not required to be included on the section 303(d) list if technology-based effluent limitations required by the Act, more stringent effluent limitations required by state, local, or federal authority, or "[o]ther pollution control requirements (e.g., best management practices) required by local, State or Federal authority" are stringent enough to implement applicable water quality standards (see 40 CFR 130.7(b)(1)) within a reasonable period of time. This guidance acknowledges that the most effective method for achieving water quality standards for some water quality impaired segments may be through controls developed and implemented without TMDLs (referred to as a "4b alternative"). The discussion below focuses on the use of "other pollution control requirements" as a basis for the conclusion that a segment does not need a TMDL.

a. What demonstration does EPA expect a state to make to support a successful Category 4b proposal?

EPA will evaluate on a case-by-case basis a state's decisions to exclude certain segment/pollutant combinations from Category 5 (the section 303(d) list) based on the 4b alternative. States should provide in their submission the rationale which supports their conclusion that there are "other pollution control requirements" sufficiently stringent to achieve applicable water quality standards within a reasonable period of time.

Specifically, this rationale should include: (1) a statement of the problem causing the impairment, (2) a description of the proposed implementation strategy and supporting pollution controls necessary to achieve water quality standards, including the identification of point and nonpoint source loadings that when implemented assure the attainment of all applicable water quality standards, (3) an estimate or projection of the time when water quality standards will be met, (4) a reasonable schedule for implementing the necessary pollution controls, (5) a description of, and schedule for, monitoring milestones for tracking and reporting progress to EPA on the implementation of the pollution controls, and (6) a commitment to revise as necessary the implementation strategy and corresponding pollution controls if progress towards meeting water quality standards is not being shown. EPA acknowledges that the level of rigor necessary to support the state's rationale will vary depending on the complexity of the

water impairments and corresponding implementation strategies. Note that a state could pursue water quality trading under 4b, so long as it follows the principles described in the Agency's relevant guidance.

If the Agency determines that the controls are not, in fact, "requirements," or that they will not result in attainment of applicable water quality standards within a reasonable time, then EPA may disapprove the state's failure to include the segment at issue on the section 303(d) list (i.e., Category 5) and add the segment to the list. In subsequent list submissions, EPA may determine that a segment that has been placed into Category 4b must go back into Category 5, if the circumstances have changed such that the state can no longer support its original 4b demonstration.

b. What constitutes acceptable "pollution control requirements" to support Category 4b alternatives?

Because of the case-specific nature of water quality impairments and controls designed to address such impairments, EPA cannot identify classes of controls that will always be adequate to support a conclusion that a segment is not required to be included in Category 5. In evaluating whether a particular set of pollution controls are in fact "requirements" as specified in EPA's regulation, the Agency will consider a number of factors including: (1) authority (local, state, federal) under which the controls are required and will be implemented with respect to sources contributing to the water quality impairment (examples may include: self-executing state or local regulations, permits, and contracts and grant/funding agreements that require implementation of necessary controls), (2) existing commitments made by the sources to implementation of the controls (including an analysis of the amount of actual implementation that has already occurred), (3) the availability of dedicated funding for the implementation of the controls, and (4) other relevant factors as determined by EPA depending on case-specific circumstances.

Since the overriding objective of the 4b alternative is to promote implementation activities designed to achieve water quality standards in a reasonable period of time, for all of the factors listed above, EPA will evaluate each 4b alternative on a case-by-case basis, including in particular the existence of identifiable consequences for the failure to implement the proposed pollution controls. Depending on the specific situation, "other pollution control requirements" may be requirements other than those based on statutory or regulatory provisions, as long as some combination of the factors listed above are present and will lead to achievement of WQSs within a reasonable period of time. For example, established plans of government agencies that require for attainment of WQS with a reasonable period of time may qualify even when their components include incentive-based actions by private parties. States may also choose to rely on controls that have already been implemented where there is sufficient certainty that implementation will continue until WQS are achieved and will not be reversed. Because the controls are already in place and achieving progress, EPA may consider such controls to be requirements even if their implementation did not occur pursuant to binding legal authority.

c. What constitutes a reasonable period of time for purposes of 4b?

EPA expects that segments impaired by a pollutant but not listed under section 303(d) based on the implementation of existing control requirements will attain WQSs within a reasonable period of time. What constitutes a "reasonable time" will vary depending on factors such as the initial severity of the impairment, the cause of the impairment (e.g., point source discharges, in place sediment fluxes, atmospheric deposition, nonpoint source runoff), riparian condition, channel condition, the nature and behavior of the specific pollutant (e.g., conservative, reactive), the size and complexity of the segment (a

simple first-order stream, a large thermally-stratified lake, a density-stratified estuary, and tidally-influenced coastal segment), the nature of the control action, cost, public interest, etc. States should consider such factors and provide, as stated in Section IV.G.2.A. above, a time estimate by which the controls will result in WQS attainment, including an explanation of the basis for their conclusion. EPA will evaluate on a case-specific basis whether the estimated time for WQS attainment is reasonable.

d. What are some examples to illustrate how the preceding guidance would be applied?

EPA will evaluate on a case-specific basis each set of controls a state uses to support a decision to include a segment in Category 4b. The following circumstances are examples of controls which may be sufficient to support such a decision, depending on the facts of the specific case:

- A waterbody is impaired solely by point sources. Each point source has an NPDES permit containing limits sufficient to implement WQS in that waterbody by the end of the permit terms.
- A waterbody is impaired by nonpoint source sediment input. The state has adopted regulations requiring sources to implement certain best management practices (BMPs), and can enforce the regulatory requirements under state law. The state demonstrates that implementation of BMPs by these sources will result in meeting WQS in the waterbody in a reasonable time.
- A waterbody is impaired by nonpoint sources and the state has entered into contracts for source remediation. Implementation of the contract terms will result in attainment of WQS in the waterbody in a reasonable time. While the state cannot obtain specific performance as a contract remedy, it can file a claim for significant monetary damages if the terms are not met.
- A waterbody is impaired by nonpoint sources which have already implemented some or all of certain measures that will result in attainment of WQS in that waterbody in a reasonable time. The controls are unlikely to be removed or reversed (e.g., watershed restoration measures pursuant to 319 grant).
- A waterbody is impaired by nonpoint sources within federal lands where a forest management plan has been developed and is being implemented. In this case, certain elements are included in the forest management plan emphasizing BMP certification programs, require adaptive adjustments of practices, and specify monitoring options needed to demonstrate compliance with state water quality standards.

3. Which segments should states include in Category 4c?

Segments should be placed in Category 4c when the states demonstrates that the failure to meet an applicable water quality standard is not caused by a pollutant, but instead is caused by other types of pollution. Segments placed in Category 4c do not require the development of a TMDL. Pollution, as defined by the CWA is "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water" (section 502(19)). In some cases, the pollution is caused by the presence of a pollutant and a TMDL is required. In other cases, pollution does not result from a pollutant and a TMDL is not required. States should schedule these segments for monitoring to confirm that there continues to be no pollutant associated with the failure to meet the water quality standard and to support water quality management actions necessary to address the cause(s) of the impairment. Examples of circumstances where an impaired segment may be placed in Category 4c include segments impaired solely due to lack of adequate flow or to stream channelization.

EPA encourages the state to collect or assemble additional data and/or information to verify the initial placement of the segment, and to re-categorize the segment based on the assessment of the additional data and/or information where appropriate.

H. Which segments should states include in Category 5?

This category constitutes the section 303(d) list that EPA will review and approve or disapprove pursuant to 40 CFR 130.7. States must include on their section 303(d) list those waters required to be listed by the Clean Water Act and EPA's implementing regulations. Segments must be placed in Category 5 when, based on existing and readily available data and/or information, technology-based effluent limitations required by the Act, more stringent effluent limitations, and other pollution control requirements are not sufficient to implement an applicable water quality standard and a TMDL is needed. 40 CFR 130.7(b)(1).

A segment that is included in Category 5 may also be included in other categories where appropriate. For example, the segment may be attaining some applicable standards, in which case it may also be included in Category 2. As the state develops and EPA approves TMDLs for the pollutants identified as causing a Category 5 segment to exceed an applicable standard, the segment can be placed in Category 4a, but must also remain in Category 5 if it is exceeding any applicable standard and a TMDL needs to be developed for the pollutant causing that exceedance. However, note that Category 5 takes precedence if the state chooses to list a segment in only one category.

1. Is Category 5 of the Integrated Report for 2006 a new section 303(d) list, and must the state account for all segments previously listed as needing a TMDL in the 2004 list?

The section 303(d) list (segments in Category 5) once approved (or, if necessary, established by EPA following disapproval of a state's list) is a new list that replaces the previous list. The time frame for establishing TMDLs should be 8 to 13 years from the date of the original listing. For example, a segment originally included on the 1998 section 303(d) list, and still identified on the 2006 submission as requiring a TMDL, should be addressed by 2011.

Segments included on previous 303(d) lists or previously placed in Category 5 should be accounted for in subsequent submissions. However, the fact that a segment was previously included in Category 5 (or on the 303(d) list) does not necessarily mean that it must remain in Category 5 until a TMDL is established. In some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the applicable standard is met). Alternatively, the state may determine that other required control measures are sufficient to implement the applicable standard, and therefore may move the segment to Category 4b. The state may also determine based on the assessment of new data and information that pollutants do not cause or contribute to the impairment of the segment and therefore may move the segment to Category 4c. The state may also demonstrate that the original Category 5 listing was erroneous (i.e., not consistent with its assessment methodology or WQSs).

EPA may request, as discussed below, that the state demonstrate good cause for not including individual segments (including previously listed segments) in Category 5 (40 CFR 130.7(b)(6)(iv)). EPA may request this demonstration if the state does not develop an adequate record supporting the basis for

the decision or does not specifically explain its decision to move segments previously listed in Category 5 to other categories.

2. *What constitutes good cause for not including in the current submission segments that were previously included in Category 5 (the section 303(d) List)?*

To provide interested stakeholders with a more complete understanding of the changes that may have occurred from one IR cycle (or 303(d) submission) to the next, and to help expedite EPA's review and approval/disapproval action for those segments in Category 5, EPA recommends that states submit with their IR (or their 303(d) list) a table documenting changes in segment placement or categorization from the 2004 IR, and a brief summary of the basis for those changes. Table 5-2 provides an example of how states might do this.

Table 5-2. Documentation of "Good Cause" to Move Segments from Category 5.

Segment previously in Category 5	New placement in 2006	Explanation for change
Segment 214	Category 4a	TMDL completed and approved by EPA for Chromium.
Segment 266	Category 4c	The analysis of new data concluded that the aquatic life use impairment is solely due to low river flow.
Segment 321	Category 4b	The state has proposed an alternative approach to attain WQS by implementing required controls via NPDES permits.
Segment 349	Category 1	The assessment of new data documents that applicable WQS are now being attained.
Segment 350	Category 3	Previous listing in Category 5 was inconsistent with assessment methodology. Available data insufficient to determine attainment status.

In addition, EPA may request that states provide "good cause" for not including on the 2006 section 303(d) list (Category 5) submission segments that were previously included on the list. If EPA makes such a request, the state must explain its basis for not including the segment on the list. Consistent with 40 CFR 130.7(b), "good cause" for not including segments in Category 5 may be based on the following determinations:

- The assessment and interpretation of more recent or more accurate data in the record demonstrate that the applicable WQS(s) is being met.
- The results of more sophisticated water quality modeling demonstrate that the applicable WQS(s) is being met.
- Flaws in the original analysis of data and information led to the segment being incorrectly listed.
- A demonstration pursuant to 40 CFR 130.7(b)(1)(ii) that there are effluent limitations required by state or local authorities that are more stringent than technology-based effluent limitations, required by the CWA, and that these more stringent effluent limitations will result in the attainment of WQSs for the pollutant causing the impairment.

- A demonstration pursuant to 40 CFR 130.7(b)(1)(iii) that there are other pollution control requirements required by state, local, or federal authority that will result in attainment of WQSs for a specific pollutant(s) within a reasonable time (i.e., 4b).
- Documentation that the state included on a previous section 303(d) list an impaired segment that was not required to be listed by EPA regulations, e.g., segments where there is no pollutant associated with the impairment.
- Approval or establishment by EPA of a TMDL since the last section 303(d) list.
- A state inappropriately listed a segment that is within Indian country, as defined in 18 U.S.C. section 1151.
- Other relevant information that supports the decision not to include the segment on the section 303(d) list.

EPA has the authority to disapprove a submission if EPA identifies existing and readily available information that shows a segment is required by the CWA and EPA regulations be included in Category 5 (the section 303(d) list). In that situation, EPA will partially disapprove the state's list and identify additional segments for inclusion in Category 5.

3. Can previously listed segments (without new data or information) be delisted solely because they have not yet been assessed with a new methodology?

No. EPA does not believe it would be appropriate to remove segments previously listed in Category 5 (without new data or information) ***solely*** because they have not yet been assessed with a new methodology. However, there are some situations where a segment may be removed from Category 5 without relying on data and information collected after the date of the previous list. For example, if the state evaluates the pre-existing data and information using a new or revised methodology that accurately reflect the applicable WQS, and the results of that evaluation provide a "good cause" basis for not including the segment on the 2006 section 303(d) list, the segment would no longer need to be included in Category 5. However, the delisting should only occur if it is determined that the basis for the decision is consistent with the state's applicable WQSs and is reasonable.

4. Must Category 5 include threatened segments?

Yes, states must include threatened segments in Category 5 where appropriate (40 CFR 130.7(b)). The definition of "water quality limited segment" in EPA's regulations implementing CWA section 303(d) includes waters not expected to meet applicable water quality standards, which EPA refers to as "threatened" waters. 40 CFR 130.2(j). EPA recommends that states consider as threatened those segments that are currently attaining WQS, but are projected as the result of applying a valid statistical methodology to exceed WQS by the next listing cycle (every two years). For example, segments should be listed if the analysis of existing data and information demonstrates a declining trend in the segment's WQS, and the projected trend will result in a failure to meet that standard by the date of the next list (i.e., 2008 for purposes of the 2006 assessment cycle). The state assessment and listing methodology should describe how the state identifies threatened segments.

5. *Must Category 5 include an impaired segment if the specific pollutant causing the impairment has not been identified?*

Yes, if a designated use is not supported and the segment is impaired or threatened, the fact that the specific pollutant is not known does not provide a basis for excluding the segment from Category 5. These segments must be listed unless the state can demonstrate that no pollutant(s) causes or contribute to the impairment. Prior to establishing a TMDL for such segments the pollutant causing the impairment must be identified.

If the assessment of the new data and information demonstrates that the use impairment is not associated with a pollutant and is attributable only to other types of pollution (e.g., flow or habitat alteration) the segment may be placed into Category 4c. EPA has developed guidance to assist states in identifying the causes of a biological impairment. This document, "Stressor Identification Guidance," was released in December 2000 (EPA 822-B-00-025). This document is also available on the Internet at: http://www.epa.gov/ost/waterscience/biocriteria/stressors/stressorid.pdf.

6. *When should Category 5 include segments covered by fish and shellfish consumption advisories?*

EPA generally believes that fish and shellfish consumption advisories and certain shellfish growing area classifications based on segment specific information demonstrate impairment of CWA section 101(a) "fishable" uses. This applies to fish and shellfish consumption advisories and certain shellfish area classifications for all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. Furthermore, advisories based on the results from probability surveys or other predictive tools having a high degree of confidence (i.e., 95%) may also form the basis of listing segments as impaired. States, on their own prerogative, may choose to place segments into Category 5 (or on the section 303(d) list) using probability surveys when fish and shellfish consumption advisories and certain shellfish area classifications constitute potential risks to human health.

For purposes of determining whether a segment is impaired and should be included on section 303(d) lists states are required to consider all existing and readily available data and information (see 40 CFR 130.7). This should include physical, chemical and biological data, including data on pathogens (such as bacteria and phytotoxins) as well as fish and shellfish tissue concentration data, where such data are existing and readily available. States collect several types of monitoring data to help determine if segments are attaining or maintaining applicable water quality standards. If a state does not consider particular existing and readily available data and information in deciding which segments are impaired and must be placed on the section 303(d) list, they must provide an explanation to EPA of why they did not use such data and information.

While numeric human health criteria for ambient water column concentrations of pollutants are a basis for determining impairment, the attainment of such criteria does not always mean that designated uses are being protected. Segment-specific factors sometimes cause pollutants, including pathogens, to accumulate in fish and shellfish tissue at higher levels than predicted by the methodology used to derive the numeric human health criteria. Examples of such factors include water temperature, nutrient levels, food web structure, the concentration of dissolved organic carbon in the ambient water, and accumulations in the sediment. Hence, a segment can be meeting numeric ambient water quality criteria, but not attaining the designated uses because fish or shellfish tissue concentrations exceed levels that are protective of human health. In instances where tissue concentrations indicate an impairment of the

designated use, even though ambient water column concentrations of pollutants do not indicate an exceedance, EPA recommends states translate the applicable narrative criteria on a site- specific basis or adopt site specific numeric criteria to account for higher than expected exposures from contaminated fish or shellfish tissue and protect designated uses.

Applicable shellfish growing area classifications should be used as part of determinations of attainment of water quality standards and listing of impaired segments. Shellfish growing area classifications are developed by the National Shellfish Sanitation Program (NSSP) using water column and tissue data (where available), and information from sanitary surveys of the contributing watershed, to protect public health. The states review these NSSP classifications every three years. There are certain NSSP classifications and data that do not necessarily indicate WQS violation. These include: "Prohibited" classifications set as a precautionary measure due to the proximity of wastewater treatment discharges, or absence of a required sanitary survey; shellfish tissue pathogen data (which can fluctuate based on short-term conditions not representative of general water quality); or short-term actions to place growing areas in the closed status.

When deciding whether to identify a segment as impaired, states need to determine whether there are impairments of designated uses and narrative criteria, as well as the numeric criteria. Although the CWA does not explicitly direct the use of fish and shellfish consumption advisories or NSSP classifications to determine attainment of water quality standards, states are required to consider all existing and readily available data and information to identify impaired segments on their section 303(d) lists. For purposes of determining whether a segment is impaired and should be included on a section 303(d) list, EPA considers a fish or shellfish consumption advisory, a NSSP classification, and the supporting data, to be existing and readily available data and information that demonstrates non-attainment of a section 101(a) "fishable" use when:

- the advisory is based on fish and shellfish tissue data,
- a lower than "Approved" NSSP classification is based on water column and shellfish tissue data (and this is not a precautionary "Prohibited" classification or the state water quality standard does not identify lower than "Approved" as attainment of the standard),
- the data are collected from the specific segment in question, and
- the risk assessment parameters (e.g., toxicity, risk level, exposure duration and consumption rate) of the advisory or classification are cumulatively equal to or less protective than those in the state's water quality standards.

This applies to all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. However, for fish/shellfish advisories for "dioxin and dioxin-like compounds", due to unique risk characterization issues, listing decisions should be made on a case-by-case basis.

EPA acknowledges that in some cases, fish and shellfish consumption advisories may not demonstrate that a section 101(a) "fishable" use is not being attained in an individual segment. For example, a state may have issued a statewide or regional warning regarding fish tissue contaminated with a bioaccumulative pollutant, based on data from a subset of segments. A state may use a higher fish consumption value in determining the need for an advisory compared to the value used in establishing water quality criteria for the protection of human health. As noted above, a state may also classify shellfish growing areas "Prohibited" as a precautionary measure due to the proximity of wastewater treatment discharges or where a required sanitary survey has not been conducted. In such instances, these

segments need not be listed as impaired under section 303(d) unless there are segment specific data (and the data were not considered during the development or review of a non-precautionary NSSP classification), showing non-attainment of section 101(a) uses.

Some fish and shellfish consumption advisories and NSSP classifications are based on Food and Drug Administration (FDA) action levels as opposed to EPA's risk-based methodology for the protection of human health. FDA action levels are established to protect consumers of interstate shipped, commercially marketed fish and shellfish rather than fish and shellfish caught and consumed within the state. FDA action levels also include non-risk based factors (e.g., economic impacts) in their derivation, while water quality criteria must protect the designated uses without regard to economic impacts.

Where tissue contamination that triggers an advisory based on FDA action levels indicates an exceedance of state human health criteria, the advisory is an indication that section 101(a) "fishable" uses are not attained, and therefore, these segments should be placed into Category 5 or included on the 303(d) list.

7. How should Category 5 handle segments for which WQS are being revised or where temporary variances are in place?

The attainment decision must be based on the applicable WQS. In the case of a standard that is being revised, that standard is not applicable until it has been approved by EPA. 40 CFR 131.21. Therefore states must include in Category 5 segments that do not meet an applicable WQS at the time of listing, even if the new standard is in the process of being revised to be less stringent, until such time as EPA approves the revised standard. However, these segments would not have to be considered a high priority for TMDL scheduling. If EPA approves a revised standard in the future, the segment may be removed from the section 303(d) list at that time provided the segment does not meet the listing requirements with respect to the new standard. With respect to variances, which are temporary and usually apply to a particular discharger, but may also apply to a segment, the applicable WQS typically is the underlying standard, and therefore the segment should be placed in Category 5 if it does not support one or more of the designated uses in the underlying standard.

8. Must Category 5 include a segment where the criterion has been exceeded, but the exceedance is the result of background or natural conditions?

In some cases, a segment may exhibit water quality characteristics or chemical concentrations approaching or exceeding those levels established in the state's water quality standards due solely to non-anthropogenic causes. If the state's water quality standards include a specific exclusion for exceedances caused by "natural conditions", these segments would not be considered impaired (i.e., they could be excluded from Categories 4 and 5). These segments should instead be placed into Categories 1 through 3 as appropriate. For such segments, these background or natural conditions can be defined by assessing the results of water quality monitoring efforts, by the use of predictive models, or a characterization based on data from a watershed with similar hydrologic, land use, and pollutant loading characteristics.

9. What additional information is needed for segments in Category 5?

Identification of Pollutants

Section 130.7(b)(4) requires states to identify, for each segment included on the section 303(d) list (Category 5), the "pollutants causing or expected to cause violations of the applicable water quality standards." For the 2006 listing cycle, segments identified as impaired or threatened based on biological criteria should be included in Category 5 unless the state demonstrates that a pollutant is not causing the impairment, or inclusion in Categories 4a or 4b is warranted. States must identify all pollutants that are known to be causing the impairment of a segment.

Prioritization and TMDL Schedule

Section 303(d)(1) requires states to "establish a priority ranking" for the segments it identifies on the list, taking into account the severity of the pollution and the uses to be made of such segments, and to establish TMDLs "in accordance with the priority ranking." Consistent with section 130.7(b)(4) each state shall also submit biennially a priority ranking including waters targeted for TMDL development in the next two years. Each listed pollutant-segment combination (i.e., those in Category 5) must receive a clear priority ranking, which EPA recommends be either in the form of a scheduled TMDL completion date or a ranking such as high, medium, or low. States have considerable flexibility in deciding how best to apply these factors in prioritizing their list of waters needing TMDLs. For example, a waterbody with a severe water quality problem may be given a high priority for TMDL development in light of the severity of the concern. Conversely, a severe water quality problem may require complex analysis before developing a TMDL, and the state may therefore choose to give it a lower priority to allow time to collect necessary information and complete the analysis. Thus, the most severe water quality problems or the most toxic pollutants need not always be given the highest priority for TMDL development, if circumstances warrant a lower priority. EPA will review the priority ranking but will not take action to approve or disapprove it.

Federal regulations provide that "schedules for submissions of TMDLs shall be determined by the Regional Administrator and the State" (40 CFR 130.7(d)(1)). Factors such as the state's use of a rotating basin approach or commitments specified in court orders or consent decrees may be considered when states develop priorities and schedules. EPA recommends that states develop a schedule for establishing TMDLs as expeditiously as practicable and that the schedule (1) identifies which TMDLs will be established in each year of the upcoming integrated reporting cycle and (2) estimates the approximate number of TMDLs to be established for each year thereafter. EPA encourages the states to ensure that the schedule provides that all TMDLs for every pollutant-segment combination listed on previous section 303(d) lists be established in a time frame that is no longer than 8 to 13 years from the time the pollutant-segment combination is first identified in Category 5. EPA will not take any action on the schedule. The schedule is intended to help the public and EPA to understand the state's priorities and assist in work planning.

In developing their schedules, states will need to decide which TMDLs are higher priority than others. States need not specifically identify each TMDL as high, medium or low priority. Instead, the schedule itself can reflect the state's priority ranking. The CWA does not prescribe a particular method of expressing a priority ranking, and EPA believes a TMDL schedule is a reasonable, efficient way to demonstrate priority ranking. In some circumstances, the order in which TMDLs are established might be

subject to some modifications as the schedule is implemented, based on logistical efficiencies or data availability.

Ohio Environmental Protection Agency

Ohio 2018 Integrated Water Quality Monitoring and Assessment Report

Lake Erie

Division of Surface Water
Final Report

June 2018

Table of Contents

Section A: An Overview of Water Quality in Ohio A-1

Section B: Ohio's Water Resources
B1: Facts and Figures B-1
B2: 2020 Water Quality Goals B-8

Section C: Managing Water Quality
C1: Program Summary – Surface Water C-1
C2: Program Summary – Environmental and Financial Assistance C-19
C3: Program Summary – Drinking and Ground Waters C-20
C4: Program Summary – Environmental Services C-23
C5: Cooperation among State Agencies and Departments C-23
C6: Funding Sources for Pollution Controls C-24
C7: New 303(d) Vision Implementation in Ohio C-28

Section D: Framework for Reporting and Evaluation
D1: Assessment Units D-2
D2: Evaluation of the Ohio River D-6
D3: Evaluation of Lake Erie D-6
D4: Ohio's Water Quality Standards and Use Designations D-7
D5: Sources of Existing and Readily Available Data D-8
D6: Public Involvement in Compiling Ohio's Section 303(d) List of Impaired Waters D-12
D6.1: Solicitation for External Water Quality Data, 2018 Integrated Report Project (May 23, 2017) D-12
D6.1.1: Web Page with Instructions for Submitting Level 3 Credible Data D-13
D6.2: Web Page Announcing 2018 Integrated Report Preparation D-17
D6.3: Notice of Availability and Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-18
D6.3.1: Response to Comments Received regarding the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-19
D6.3.2: Comments Received during the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-36

Section E: Evaluating Beneficial Use: Human Health (Fish Contaminants)
E1: Background E-1
E2: Rationale and Evaluation Method E-1
E3: Results E-6
E4: Supplemental Information E-25
E4.1: Calculation of Fish Concentrations from Water Quality Standards Inputs E-25
E4.2: What's the difference between the Fish Consumption Advisory decision and the impairment decision? E-29

Section F: Evaluating Beneficial Use: Recreation
F1: Background (Bacteria) F-1
F2: Evaluation Method (Bacteria) F-2
F3: Results (Bacteria) F-8
F3.1: Lake Erie Public Beaches F-8
F3.2: Rivers and Streams F-17
F3.3: Inland Lakes F-22
F4: Recreation Assessment for Algae in Western Lake Erie F-27
F4.1: Background F-27
F4.2: Rationale and Evaluation Method F-27

F4.3: Results F-36

Section G: Evaluating Beneficial Use: Aquatic Life
G1: Background and Rationale G-1
G1.1: Background G-1
G1.2: General Determination of Attainment Status G-2
G2: Evaluation Method G-3
G2.1: Rivers and Streams: Large River Assessment Units (LRAUs) G-3
G2.2: Rivers and Streams: Watershed Assessment Units (WAUs) G-3
G2.3: Lake Erie Shoreline and Islands: Lake Erie Assessment Units (LEAUs) G-6
G3: Results G-7
G3.1: LRAUs G-8
G3.2: WAUs G-10
G3.3: LEAUs G-14

Section H: Evaluating Beneficial Use: Public Drinking Water Supply
H1: Background H-1
H2: Evaluation Method H-1
H2.1 Beneficial Use Designation H-1
H2.2 Water Quality Standards H-3
H2.3 Attainment Determination H-4
H2.4 Data Sources and Requirements H-5
H2.5 Ohio River Assessments H-6
H3: Results H-6
H4: Supplemental Information H-8

Section I: Considerations for Future Lists
I1: Wetlands I-1
I1.1 Documented High-Quality Wetlands I-2
I1.2 Significant Wetland Areas I-2
I1.3 Next Steps I-3
I2: Mercury Reduction at Ohio EPA I-11
I2.1: Ohio Law I-11
I2.2: Ohio Projects I-11
I2.3: Ohio Resources I-12
I2.4: Federal Rules I-12
I3: Inland Lakes and Reservoirs I-12
I3.1: Background of Ohio's Inland Lake Water Quality Monitoring Program I-13
I3.2: Status of Inland Lakes Program I-13
I3.2.1: Lake sampling – Lake Habitat Aquatic Life Use Assessment I-14
I3.2.2: Water Quality Standards for the Protection of Aquatic Life in Lakes I-14
I3.3: Preview of Future Listings I-15
I3.3.1: Methodology Preview: Lake Habitat Use Assessment I-16
I3.3.2: Results I-16
I4: Future Lake Erie Monitoring and Assessment I-19

Section J: Addressing Waters Not Meeting Water Quality Goals
J1: Ohio's 303(d) Listing Framework J-1
J2: Prioritizing the Impaired Waters: the 303(d) List J-3
J3: Addressing Nutrients in Lake Erie J-10
J4: Summary of Results J-16
J5: Changes for the 2018 303(d) List J-20
J6: Schedule for TMDL Work J-26
J6.1: Ohio TMDL Status J-26

J6.2: Long-Term Schedules for Monitoring and TMDLs J-26
J6.3: Short-Term Schedule for TMDL Development J-26

Section K: Maps
Ohio 8-Digit Hydrologic Units
Section 303(d) Human Health (Fish Tissue) Use Categories Watershed Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Large River Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Lake Erie Assessment Units
Section 303(d) Recreation Use Categories Watershed Assessment Units
Recreation Use Index Scores Watershed Assessment Units
Section 303(d) Recreation Use Categories Large River Assessment Units
Recreation Use Index Scores Large River Assessment Units
Section 303(d) Recreation Use Categories Lake Erie Assessment Units
Section 303(d) Aquatic Life Use Categories Watershed Assessment Units
Aquatic Life Use Index Scores Watershed Assessment Units
Section 303(d) Aquatic Life Use Categories Large River Assessment Units
Aquatic Life Use Index Scores Large River Assessment Units
Section 303(d) Aquatic Life Use Categories Lake Erie Assessment Units
Aquatic Life Use Index Scores Lake Erie Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Watershed Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Large River Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Lake Erie Assessment Units
Ohio Total Maximum Daily Load Program Progress

Section L: Summary Tables of Waterbody Conditions; List of Prioritized Impaired Waters; and Category 4B Demonstrations
L1: Status of Watershed Assessment Units L-2
L2: Status of Large River Assessment Units L-42
L3: Status of Lake Erie Assessment Units L-43
L4: Section 303(d) List of Prioritized Impaired Waters (Category 5) L-44
L5: Category 4B Demonstrations Contained in Approved Ohio TMDLs to Date L-85
L5.1: Projects included in the 2012 Integrated Report L-85
L5.2: Projects included in the 2014 Integrated Report L-97

Section M: An Overview of Ground Water Quality in Ohio
M1: Introduction M-1
M2: Ohio's Ground Water Programs M-2
M3: Ohio's Major Aquifers M-4
M4: Site-Specific Ground Water Contamination Summary M-8
M5: Major Sources of Ground Water Contamination M-10
M6: Summary of Ground Water Quality by Aquifer M-15
M7: Conclusions and Future Directions for Ground Water Protection M-40

Section N: References

List of Tables and Figures

Tables

B-1. Ohio's water resource statistics B-1
B-2. List of Ohio's principal streams and large rivers B-4
B-3. 2020 goals for four beneficial uses, Lake Erie and the Ohio River B-9
C-1. OWDA loans administered during calendar years 2015-2016 ..... C-26
D-1. Ohio water quality standards in the 2018 IR D-8
D-2. Data types used in the 2018 IR D-10
D-3. Descriptions of data used in the 2018 IR from sources other than Ohio EPA D-11
E-1. Comparison between fish concentration values and FCA program values E-3
E-2. Example data for calculating a weighted average fish tissue value E-4
E-3. A summary of changes in attainment from 2016 to 2018 IR E-6
E-4. Waters not supporting the human health use because levels of PCBs or mercury in fish tissue exceed the threshold level upon which the WQS criterion is based. These waters are category 5. ..... E-7
E-5. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based. These waters are category 1 ..... E-9
E-6. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based and which were categorized as impaired in the 2016 IR. These waters have become category 1 with the current assessment E-11
E-7. Waters with contaminants other than PCBs and mercury that affect fish tissue (included on the 303(d) list). These waters are category 5 ..... E-11
E-8. Waters for which the existing unimpaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 1h E-11
E-9. Waters for which the existing impaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 5h E-14
E-10. Waters with current fish tissue data where inadequate samples exist to determine impairment status. These waters are category 3i E-20
E-11. Large rivers and their impairment status E-22
E-12. Inland lakes and their impairment status E-23
E-13. Lake Erie assessment units and their impairment status E-25
F-1. Summary of the RU assessment methods F-2
F-2. Determining assessment status of Lake Erie shoreline AUs F-5
F-3. Determining assessment status of WAUs and LRAUs F-7
F-4. Recreation index score matrix F-8
F-5. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the western basin (Sandusky Bay and west) F-11
F-6. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the central basin (east of cedar point) F-12
F-7. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the central basin shoreline AU F-14
F-8. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the western basin shoreline AU F-14
F-9. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the islands shoreline AU. F-15

F-10. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the Sandusky basin shoreline AU. F-15
F-11. Aggregated exceedance frequencies at 65 Lake Erie public beaches from 2013-2017 (pooled by Lake Erie shoreline AU to report use support). F-17
F-12. Annual Ohio EPA *E. coli* sampling effort and RU assessment (using Ohio EPA data) in Ohio streams, rivers and inland lakes, 2011-2017 recreation seasons F-18
F-13. Overall differences in the assessment of RU attainment, 2010-2018 ..... F-18
F-14. Summary assessment status of the RU in Ohio's WAUs by assessment cycle F-20
F-15. Summary assessment status of the RU in Ohio's LRAUs F-21
F-16. Summary assessment status of the RU for inland lakes, 2013-2017 ..... F-22
F-17. Swimming advisory posting at Ohio's inland lake public beaches (2013-2017). F-25
F-18. Proposed Ohio Lake Erie AUs F-28
F-19. Data collected in Ohio waters of Lake Erie that is credible data level 3 or could likely be approved as level 3 with review and coordination F-31
F-20. The number of 10-day time frames exceeding the 30 percent coverage threshold (with 20,000 cells/mL) or greater) in the western basin open water unit for each year beginning in 2012 ..... F-36
G-1. Summary of aquatic life use assessment for Ohio's WAUs, LRAUs and LEAUs: 2002-2018 Integrated Report cycles G-9
G-2. Breakdown by size category of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-3. Breakdown by designated or recommended aquatic life use of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-4. Prevalence of the top five causes of aquatic life use impairment in WAUs and LRAUs based on biological and water quality survey data collected from 2003-2016 ..... G-12
H-1. PDWS attainment determination. H-4
H-2. Waters designated as impaired for (not supporting) the PDWS beneficial use. H-12
H-3. Summary of PDWS assessment results for the nitrate, pesticide and algae indicators H-18
I-1. List of high-quality wetland areas I-3
I-2. List of significant wetland areas I-8
I-3. Proposed lake habitat use criteria I-15
I-4. Summary of the lake habitat use assessment for lakes sampled in 2015-2016 using the draft assessment methodology described in this section I-17
J-1. Category definitions for the 2018 Integrated Report and 303(d) list J-2
J-2. Potential listing opportunities in Ohio's listing framework. J-3
J-3. Priority points for impaired AUs. J-5
J-4. Summary of results for each beneficial use J-16
J-5. Number of AUs removed from or added to the 303(d) list J-20
J-6. Summary of reasons for changes to the 2018 303(d) list J-20
J-7. Removals from the 303(d) list because of a flaw in the original listing J-21
J-8. Removals from the 303(d) list because of new data J-21
J-9. Addition to the 303(d) list because of flaw in original listing J-23
J-10. Additions to the 303(d) list because of new data J-23
J-11. Ohio TMDLs approved by U.S. EPA at the 11-digit hydrologic unit scale J-27
J-12. Ohio TMDLs approved by U.S. EPA at the 12-digit hydrologic unit scale J-31
J-13. Short-term schedule for TMDL development J-33
M-1. Summary of Ohio's Ground water protection programs. M-3
M-2. Ground water contamination summary M-8
M-3. Major sources of potential ground water contamination M-14

M-4. Counts of public water systems where 2007-2017 decadal mean values of compliance data occur in the Watch List and Impaired Category M-17
M-5. Counts of wells where 2007-2017 decadal mean values of AGWQMP data occur in the Watch List and Impaired Category (maximum values used for nitrate). M-27

Figures

B-1. Map of Ohio's principal streams and large rivers. B-2
B-2. Ohio Scenic River System B-3
C-1. Ohio Lake Erie AOCs and major Lake Erie tributaries C-7
D-1. Ohio's large rivers (rivers with drainages greater than 500 mi^2) and their watersheds D-3
D-2. Ohio's 12-digit WAUs and 8-digit hydrologic units D-4
D-3. Ohio's Lake Erie assessment units – western basin, islands, Sandusky basin and central basin shorelines and open water areas D-5
E-1. Illustration of the relationship among the WQS values, the values that trigger issuance of fish consumption advisories (FCAs) and the resulting decision regarding waterbody impairment associated with an FCA. E-2
E-2. Flowchart for the categorization of fish tissue data for the IR E-6
F-1. Lake Erie public beaches sampled under Ohio's bathing beach monitoring program. F-3
F-2. Erie and Sandusky County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-3. Cuyahoga and Loraine County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-4. Example of bacteria sampling locations, upper Walhonding River study area (2010) F-6
F-5. Frequency of advisory postings at Ohio's Lake Erie public beaches F-16
F-6. Histogram of RU index scores for Ohio's WAUs F-19
F-7. New Ohio Lake Erie AUs F-29
F-8. Monitoring locations in the western basin of Lake Erie in 2017 ..... F-30
F-9. Bloom severity observed and projected (with 40 percent TP reduction) since 2002 ..... F-35
G-1. Flowchart for determining if WAU score can be derived based on available sampling locations. G-5
G-2. Percent attainment status and goal progress ("100 percent by 2020") for monitored miles of Ohio's LRAUs (23 rivers/38 AUs/1247.54 miles total) G-10
G-3. Average full attainment watershed score for Ohio's HUC11 WAUs (IR cycles 2002-2010) and HUC12 WAUs (IR cycles 2010-2018). G-13
G-4. Breakdown by designated or recommended aquatic life use of sites in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 (n= 3,911 sites) G-13
G-5. Status and trend of aquatic life use "80 percent by 2020" goal for wading and principal stream and river sites in Ohio based on the last five IR cycles. G-14
G-6. Average IBI scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-16
G-7. Average MIwb scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-17
H-1. Ohio WAUs, LRAUs and LEAUs that contain at least one active surface water drinking water intake. H-2
H-2. AUs with nitrate indicator results H-9
H-3. AUs with pesticide indicator results H-10
H-4. AUs with algal toxin indicator results H-11
I-1. Supplemental weekly sampling locations for chlorophyll and microcystin; sampled by University of Toledo and the Ohio State University/Stone Laboratory (boxed sites) researchers in 2017 ..... I-20
J-1. Listing by smaller AUs and individual beneficial uses J-3
J-2. Priority points assigned based on use impairment or other factors (extra points). J-4

J-3. Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey. J-7
J-4. Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey. J-9
J-5. Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009. J-10
J-6. Key steps in the state TMDL and binational Annex 4 processes. J-13
J-7. Summary of 2018 IR results for watershed AUs by beneficial use. J-17
J-8. Summary of 2018 IR results for large river AUs by beneficial use. J-18
J-9. Summary of 2018 results by AU type. J-19
J-10. Summary of reasons for changes to the 2016 303(d) list. J-21
M-1. Aquifer types in Ohio modified from ODNR glacial and bedrock aquifer maps. M-4
M-2. Iron distribution in AGWQMP wells, overlain on major aquifers. M-5
M-3. Manganese distribution in AGWQMP wells, overlain on major aquifers. M-6
M-4. Distribution of public water systems on impaired list for arsenic for both treated and raw waters. M-34
M-5. Distribution of public water systems in impaired category and on the watch list for sulfate in raw water. M-35
M-6. Distribution of public water systems on fluoride MCL watch list for treated and raw water. M-36
M-7. Distribution of public water systems with maximum nitrate in treated and raw water greater than the MCL. M-37

List of Acronyms and Abbreviations

AmphIBI	amphibian index of biotic integrity
AMP	Atrazine monitoring program
AOC	Area of Concern (as identified under the Great Lakes Water Quality Agreement)
ARRA	American Recovery and Reinvestment Act of 2009
AU	assessment unit
BAV	beach action value
BEACH	Beaches Environmental Assessment and Coastal Health (Act)
BMP	best management practice
BNR	biological nutrient removal
BUI	Beneficial Use Impairment (as described in the Great Lakes Water Quality Agreement)
CABB	Center for Applied Bioassessment and Biocriteria
CAFO	Concentrated Animal Feeding Operations
CDBG	Community Development Block Grant
CDC	Center for Disease Control
cfu	colony forming unit
Corps	U.S. Army Corps of Engineers
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSO	combined sewer overflow
CSP	Conservation Stewardship Program
CWH	coldwater habitat
CWA	Clean Water Act
DDAGW	Division of Drinking and Ground Waters
DDT	dichlorodiphenyltrichloroethane
DEFA	Division of Environmental and Financial Assistance
DES	Division of Environmental Services
DLG	digital line graph
DRG	digital raster graphic
DSW	Division of Surface Water
EAG	External Advisory Group
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
EWH	exceptional warmwater habitat
FCA	fish consumption advisory
FFY	federal fiscal year
FSA	Farm Service Agency
FWPCA	Federal Water Pollution Control Act
GIS	Geographic Information System
GLLA	Great Lakes Legacy Act
GLRC	Great Lakes Regional Collaboration
GLRI	Great Lakes Restoration Initiative
GLSM	Grand Lake St. Marys
GLWQA	Great Lakes Water Quality Agreement
GRP	Grassland Reserve Program
GRTS	Generalized Random Tessellation Stratified (survey design)
HAB	harmful algal bloom
HSD	honest significant difference
HUC	hydrologic unit code

IBI	index of biotic integrity
ICI	invertebrate community index
IDP	indirect discharge permit
IR	Integrated Report
kg	kilogram
L	liter
LA	load allocation
LAMP	lakewide action and management plan
LCI	Lake Condition Index
LDI	Landscape Development Intensity
LEAU	Lake Erie assessment unit
LEC	(Ohio) Lake Erie Commission
LENT	Lake Erie nutrient targets
LEPF	(Ohio) Lake Erie Protection Fund
LH	lake habitat
LHD	local health district
LRAU	large river assessment unit
LRW	limited resource water
LTCP	long-term control plan
MBI	Midwest Biodiversity Institute
MF	membrane filter
mg	milligram
mi^2	square miles
mL	milliliter
MIwb	modified index of well-being
MOR	monthly operating data
MPN	most probable number
MRBI	Mississippi River Basin Initiative
MS4	municipal separate storm sewer systems
MWH	modified warmwater habitat
NARS	National Aquatic Resource Survey
NCCA	National Coastal Condition Assessment
NCWQR	National Center for Water Quality Research
NEORSD	Northeast Ohio Regional Sewer District
ng	nanogram
NHD	National Hydrography Dataset
NLCD	National Land Cover Dataset
NOAA	National Oceanic and Atmospheric Administration
NOI	notice of intent
NPDES	National Pollutant Discharge Elimination System
NPS	nonpoint source
NRCS	Natural Resources Conservation Service
NSMP	Nonpoint Source Management Plan
NSSP	National Shellfish Sanitation Program
NWI	National Wetland Inventory
NWQI	National Water Quality Initiative
OAC	Ohio Administrative Code
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
OMZA	outside mixing zone average

ORC	Ohio Revised Code
ORSANCO	Ohio River Valley Water Sanitation Commission
OSIP	Ohio Statewide Imagery Program
OTMP	Ohio Tributary Monitoring Program
OWDA	Ohio Water Development Authority
OWRC	Ohio Water Resources Council
PAHs	polyaromatic hydrocarbons
PHA	public health advisory
ppb	parts per billion
PCB	polychlorinated biphenyls
PCR	primary contact recreation
PDWS	public drinking water supply
POTW	publicly owned treatment works
PS	point source
PTI	permit to install
PTO	permit to operate
PWS	public water supply
QA	quality assurance
QC	quality control
QDC	qualified data collector
QSC	Quicksilver Caucus
RAP	Remedial Action Plan
RAS	return activated sludge
RF3	Reach File Version 3
RM	river mile
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SFY	state fiscal year (July 1 to June 30)
SIU	significant industrial user
sq mi	square miles
SSM	single-sample maximum
STORET	STOrage and RETtrieval (a U.S. EPA water quality database)
STV	statistical threshold value
SWIF	Surface Water Improvement Fund
SWIMS	Surface Water Information Management System
TDS	total dissolve solids
TMDL	total maximum daily load
TNTC	too numerous to count
TOC	total organic carbon
µg	microgram
USDA	United States Department of Agriculture
U.S. EPA	United States Environmental Protection Agency
USC	United States Code
USGS	U.S. Geological Survey
UV	ultraviolet
VIBI	vegetation index of biotic integrity
VIBI-FQ	VIBI – floristic quality
WAS	waste activated sludge
WAUs	watershed assessment unit
WBLE	western basin of Lake Erie

WEG	(Ohio EPA's) wetland ecology group
WHIP	Wildlife Habitat Incentives Program
WHO	World Health Organization
WLA	wasteload allocation
WPCLF	Water Pollution Control Loan Fund
WQ	water quality
WQC	Water Quality Certification (Section 401)
WQM	Water Quality Management (plan)
WQPSD	Water Quality Permit Support Document
WQS	water quality standards
WRP	Wetlands Reserve Program
WRRSP	Water Resource Restoration Sponsor Program
WSRLA	Water Supply Revolving Loan Account
WWH	warmwater habitat
WWTP	wastewater treatment plant

Executive Summary

The *Ohio Integrated Water Quality Monitoring and Assessment Report* summarizes water quality conditions in the State of Ohio. This report satisfies Ohio's water quality reporting requirements under Sections 303(d), 305(b) and 314 of the federal Clean Water Act. This report was last updated in 2016. **Analysis and listing changes are based on data collected during 2015 and 2016 for aquatic life and human health (fish tissue) uses; recreation and public drinking water supplies uses consisted of data from 2016 and 2017**.

Using methods devised to determine the suitability of waters for four specific uses—aquatic life (fish and aquatic insects), recreation (such as boating and swimming), human health (related to fish tissue contamination) and public drinking water supplies—available data were compared with water quality goals. The results indicate which waters are meeting goals and which are not. Waters not meeting the goals for one or more of the four types of uses are referred to as *impaired.* The waters found to be impaired are prioritized and scheduled for further study and restoration.

This report describes the methods used to judge impairment of each type of use and have evolved in each reporting cycle as the Agency gains access to more data and develops better ways to interpret them.

Results are reported for 1,538 watershed units, 38 large river units (in Ohio's 23 rivers that drain more than 500 square miles) and seven Lake Erie units. Additional information on streams draining between 20 and 500 square miles is also presented as this subset of waterbodies is used to calculate and track progress of Ohio's 80 percent full attainment by 2020 goal for wading and principal streams and rivers.

The percent of monitored miles of Ohio's large rivers in full attainment stayed steady compared to the same statistic reported in the 2016 IR. The 100 percent full attainment by 2020 aquatic life goal statistic for Ohio's largest rivers now stands at 87.5 percent, compared to 87.4 percent from the 2016 report. Conversely, smaller streams continue to improve with the percent of assessed sites in full aquatic life use attainment increasing from 66.1 percent to 69.3 percent. The top reasons for aquatic life impairment continue to be sediment, nutrients, habitat modification, hydromodification and organic enrichment.

For the human health use (fish tissue), polychlorinated biphenyl (PCB) contamination in fish is the cause of most of the human health impairments in Ohio. Mercury is the second leading cause.

The chemicals of concern causing impairment of the public drinking water supply use include nitrate, atrazine and cyanotoxin (due to certain algae). The primary source of the chemicals is nonpoint source runoff from agricultural land use. Additional sources of nitrate include home and commercial fertilizer application, failing septic systems, unsewered areas and wastewater treatment plant discharges. Of the 119 public drinking water supply assessment units, 37 are now listed as impaired by algae, with another 17 on the watch list for algae.

The recreation (bacteria) use analysis focuses on the number of bacteria in the water. For Lake Erie public beaches, the frequency of swimming advisories varies widely, ranging from 1.2 percent to more than 50 percent. Generally, beaches located near population centers have the most problems. Results are also reported for streams and inland lakes.

The recreation use has also been assessed for algae impacts in the western basin of Lake Erie. The western basin shoreline, the islands shoreline and the western basin open water assessment units are all listed as impaired by algae.

Of the 6,316 possible category assignments, the 2018 303(d) list includes changes in 209, with 69 delistings and 135 new listings. Most 303(d) removals and new listings are due to new data.

Changes since the 2016 Integrated Report

Changes made between the 2016 Integrated Report and the 2018 Integrated Report are as follows:

- This report contains revised assessment units for the entire Ohio portion of Lake Erie in Section D1.
- This report also discusses future methodology development for recreation assessment of Lake Erie based on algae blooms in Section I.
- The methodology for evaluating the recreation (bacteria) use has been updated to include the revised *E. coli* water quality criteria, effective January 2016, in Section F1.
- A new subcategory, 5p, was added to track which impairments are based on threatened status, primarily for nutrients.

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

D7. Public Comments and Responses to Comments on Draft Report

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

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

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

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

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

Comments Related to Specific Watersheds

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Addressing Waters Not Meeting Water Quality Goals

The federal Clean Water Act (CWA) requires that states identify waters not meeting water quality goals and then prioritize them for action to restore their beneficial uses[1]. The resulting list of prioritized impaired waters is known as the 303(d) list. Ohio's 2018 303(d) list is presented in Section L4 of this report.

Ohio made substantial changes to its listing process in 2010 (see Sections A and J in the *2010 Integrated Report* [Ohio EPA, 2010]); Ohio's *2012 Integrated Report* and 303(d) list (Ohio EPA, 2012) contained relatively few changes compared to the major adjustments made in 2010. A significant change to the 2014 report included the addition of a new indicator (algae) to the public drinking water supply (PDWS) use. The 2016 report contained changes in how the information was organized and what data sets were used (for instance, 2015 data was included for both recreation and PDWS uses) and was amended to include new open water assessment units for Lake Erie and a new recreation assessment methodology based upon algae. In 2018, the most significant changes are to the recreation use assessments and how Lake Erie Assessment Unit are defined (increased from six to seven units). The assessment based on bacteria has been updated to comply with the new *E. coli* WQS which include a 90-day geometric mean and statistical threshold value (see Sections F1-F3). In addition, an assessment method for recreation based on algae for the western basin of Lake Erie has been added in Section F4.

This section outlines the listing framework, lays out the prioritizing and delisting processes and results and reports on the status of Ohio total maximum daily load (TMDL) efforts including schedules for future TMDLs in Ohio.

J1. Ohio's 303(d) Listing Framework

The process of listing involves assigning a condition status (a category) for each of four beneficial uses for each assessment unit (AU). Data requirements, descriptions of available data, assessment methodologies and results were discussed and reported by individual beneficial use in Sections E, F, G and H.

In 2010, Ohio modified the five-category listing structure suggested by U.S. EPA to accommodate listing by beneficial use and introduced subcategories to give more information about the status of each water. In 2012, one additional subcategory - t - was added to aid reporting the status of AUs relative to approved TMDLs and data availability. In 2014, the "t" subcategory was altered slightly and a new category - d - was added to better reflect circumstances encountered as Ohio EPA revisits watersheds having approved TMDLs. In 2016, a new subcategory in Category 5 (5-alternative or 5-alt) was added to report on alternative restoration approaches for CWA 303(d) listed waters. Such waters will still require TMDLs until water quality standards are achieved. Ohio does not have any AUs listed under 5-alt in this report but anticipates using this subcategory in the future. In 2018, a new subcategory "p" is added under Category 5 to track which impairments are based on threatened status, primarily for nutrients. Table J-1 summarizes the categories and subcategories used in this report.

Also, in 2010, Ohio began listing by beneficial use within each AU and reporting on a smaller AU size. Watershed AUs shifted from an average size of 130 square miles to 27 square miles. Under the old system, an impairment of one beneficial use caused the AU to be Category 5 (impaired) regardless of the status of other uses.

[1] Beneficial uses include aquatic life, human health (fish contaminants), recreation and public [drinking] water supply.

Table J-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[2]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[3] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[4]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

Figure J-1 illustrates the significance of these changes in the listing procedures. A = aquatic life use; R = recreation use; H = human health use; and P = public water supply use. The numbers refer to the categories described in Table J-1 above. In the example, an AU listed in 2008 as impaired (category 5) appeared on the 2010 303(d) list as five units with four uses each; thus, reporting one piece of information changed to reporting 20 pieces of information. Whereas the 2008 list indicated only that the unit was impaired, the new listing indicates all the following information:

- Aquatic life use is impaired (5) in one unit, not impaired (1) in one and unknown (3) in one. A TMDL to address impairments has been completed in one unit (4A) and the impairment in the remaining unit is being addressed in some other way (4B, for example, a discharge permit).
- Recreation use is impaired (5) in three units, unknown (3) in one and a TMDL to address the impairment in one unit has been completed (4A).
- Human health results based on fish tissue analysis indicate that four of the five units are impaired (5) and one is unknown (3).
- Public drinking water supplies exist in only two of the five units and one of those is impaired (5). The status of the other is unknown (3).

[2] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[3] HUC means hydrologic unit code.
[4] Ohio currently has no waters that are listed under this subcategory.

For the aquatic life use, Ohio EPA continues the transition that began in 2010 of translating data evaluated at the 11-digit hydrologic unit size to the smaller 12-digit size. We expect that the few remaining relic categories will be dealt with as those areas are monitored again.

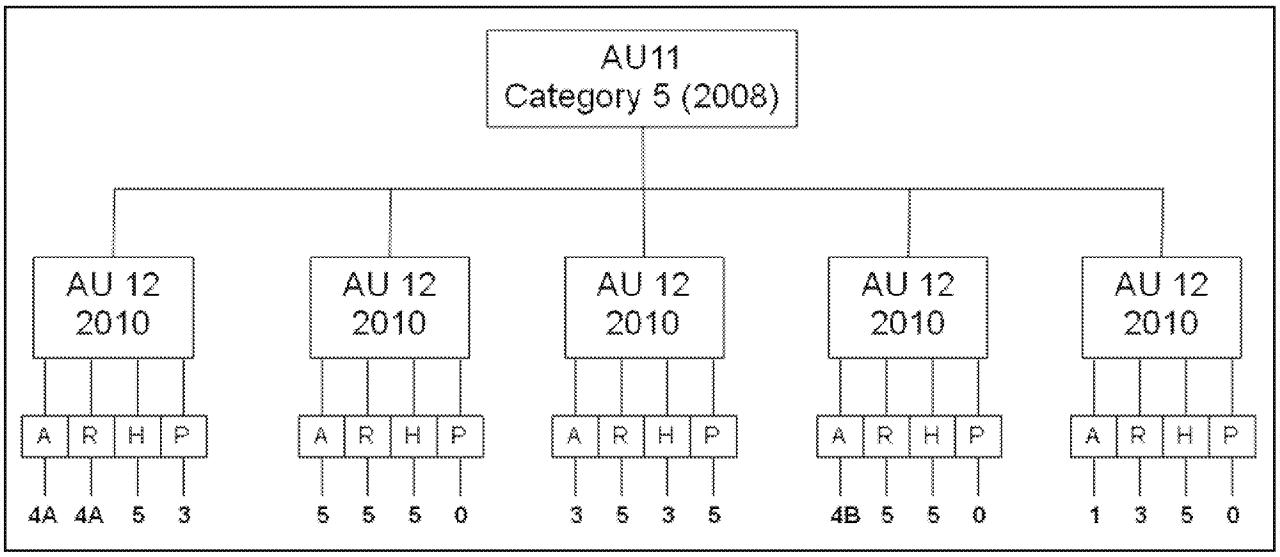

Figure J-1 — Listing by smaller AUs and individual beneficial uses.

Table J-2 shows the number of potential listings that could result from the combination of smaller AUs and listing by individual use.

Table J-2 — Potential listing opportunities in Ohio's listing framework.

	2008 and Before			2010 and After		
AU Types	Number of AUs	Status Reports per Unit	Total Number of Possible Listings	Number of AUs	Status Reports per Unit	Total Number of Possible Listings
Watershed	331	1	331	1538	4	6,152
Large river	23	1	23	38	4	152
Lake Erie shore	3	1	3	3	4	12
Totals	357	1	357	1,579	4	6,316

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

As previously stated, the impaired waters are identified and assigned a category by individual beneficial use in Sections E, F, G and H. After waters are identified as impaired and it is determined that a TMDL is required, the waters are prioritized to produce the 303(d) list (see Section L4). Because Ohio uses a highly integrated monitoring and TMDL linkage to ensure efficient use of resources, it makes sense to continue to set priorities by AU rather than by individual use.

Ohio River and Open Waters of Lake Erie

ORSANCO has lead responsibility for the multi-jurisdictional Ohio River water quality as outlined in Section D2. Binationally, the U.S. and Canada are working together under the GLWQA to address water quality issues in Lake Erie. Ohio EPA is actively participating in TMDLs for tributaries as well as many other actions for Lake Erie outlined in Section J3, so priority for Ohio EPA-initiated TMDLs is assigned a low priority for these waters. TMDLs in watersheds that drain to the Ohio River and Lake Erie will reduce the pollutant load delivered to each water.

Inland Waters and Lake Erie Shoreline

A point system is used to assign priority to impaired AUs. A total of 22 points could be assigned to an AU, distributed as shown in Figure J-2. The priority results for specific AUs are reported in Section L and in AU summary information available on the web page.

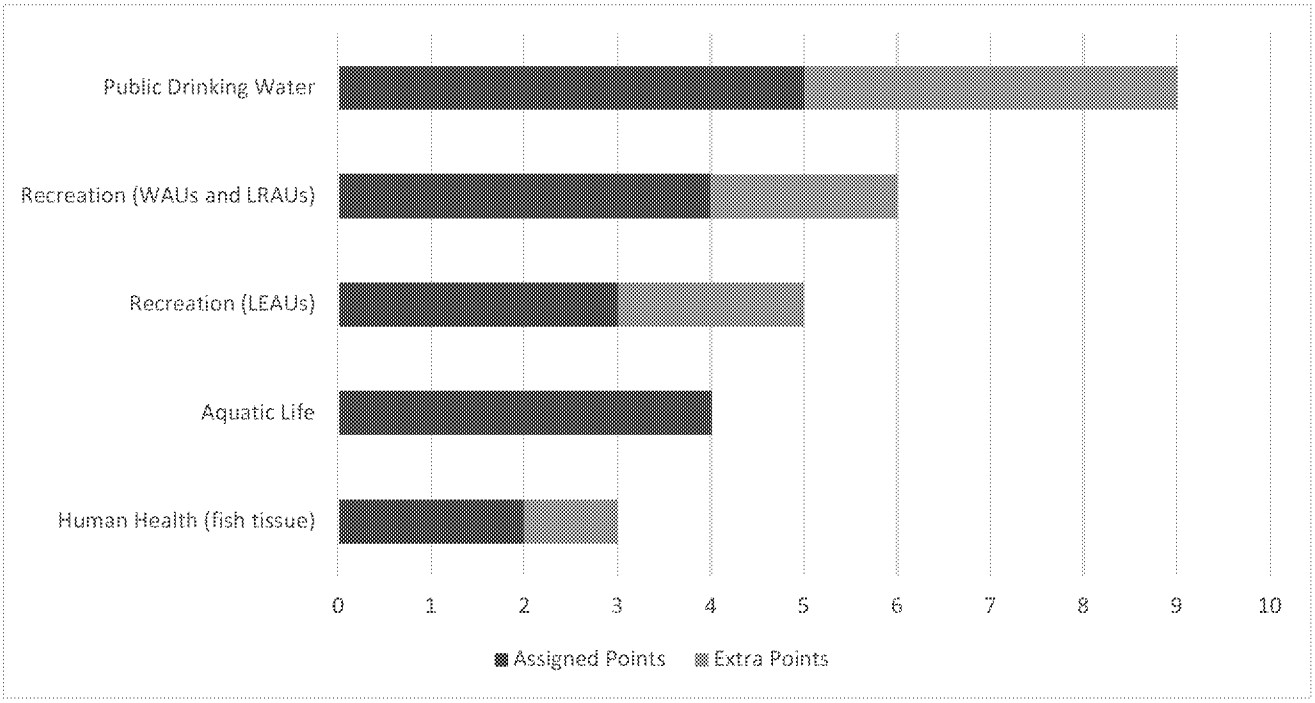

Figure J-2 — Priority points assigned based on use impairment or other factors (extra points).

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.

Two additional points may be awarded to AUs that are impaired for the recreation use and contain Class A waters. Class A waters are those most suitable for recreation, such as popular paddling streams and lakes with public access points developed, maintained and publicized by governmental entities. Priority points for Lake Erie recreation use are calculated based on the bathing water geometric mean for *E. coli* and the percentage of days that the AU exceeded that criteria. An impaired AU gets one point if the percentage of days in exceedance was in the range of 0 to 10 percent; two points if in the range of 10.1 percent to 20

percent; and three points if the percentage of days in exceedance was greater than 20.1 percent. Two additional points may also be awarded to AUs that are impaired for recreation use based on algae.

Table J-3 — Priority points for impaired AUs.

Point Values	Condition	Number of AUs		
		WAUs	LRAUs	LEAUs
Human Health Use impairment (fish tissue contaminants) (maximum of 3 points)				
2	Listed as impaired for Fish Contaminants (Human Health Use)	436	32	4
1	Additional point in AUs that exceed 500 ppb for PCBs or Hg	3	0	0
Recreation Use impairment – WAUs and LRAUs (maximum of 6 points)				
1	Listed as impaired with AU score between 0 and 25	108	0	
2	Listed as impaired with AU score between 75.1 and 100	92	17	
3	Listed as impaired with AU score between 25.1 and 50	271	2	
4	Listed as impaired, with AU score between 50.1 and 75	279	7	
2 extra	Additional points if AU contains Class A waters	74	26	
Recreation Use impairment - LEAUs (maximum of 5 points)				
1	Listed as impaired with 0 to 10% of season exceeding *E. coli* criteria			1
2	Listed as impaired with 10.1% to 20% of season exceeding *E. coli* criteria			1
3	Listed as impaired with > 20.1% of season exceeding *E. coli* criteria			2
2 extra	Additional points if AU is impaired for algae			3
Aquatic Life Use impairment (maximum of 4 points)				
1	Listed as impaired, with AU score between 0 and 25	161	0	2
2	Listed as impaired, with AU score between 75.1 and 100	35	8	0
3	Listed as impaired, with AU score between 25.1 and 50	119	2	2
4	Listed as impaired, with AU score between 50.1 and 75	93	2	0
Public Drinking Water Use impairment (maximum of 9 points)				
5	Listed as impaired for Public Drinking Water Use for one indicator	33	5	6
2 extra	Additional points in AUs impaired for each additional indicator	1	3	0
1	Not listed as impaired, but on watch list; one point for each indicator	33	3	0

As outlined in Section C3, the priority schedule for TMDL projects in Table J-15 was developed considering the above information, as well as the following:

- Social Factors (highly used recreational waters, drinking water supply for significant populations, ongoing/sustained involvement of any local groups or government, etc.)
- Value Added (is a TMDL the most efficient way to achieve improved water quality?)
- Is there an approved watershed action plan – if so how many implemented projects?
- How much regulatory authority exists over sources?
- Is there an alternative way to improve water quality more quickly than a TMDL? (for example, immediate implementation of an existing plan or projects, or imposing more stringent permit limits to address a localized problem)
- Are there other factors in play? Examples include:
    - Pending enforcement for a discharger (possible 4B option)
    - U.S. Army Corps of Engineers modeling of reservoir discharge to improve downstream water quality
    - Local or statewide strategy or requirements in place to address an issue/pollutant (for example, new health department rules for home sewage treatment systems if they are sole/primary source of impairment)

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.

In the *2014 Integrated Report*, Ohio listed waters impaired by algal toxins for the first time. In the 2016 report, more waters are listed, especially lakes and reservoirs. 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.

Based on a review of the inland lakes or reservoirs that were listed as impaired or on the Watch List for algae indicators in the 2014 Integrated Report, as well as the more recent data collected for algae at PDWS with intakes in inland lakes or reservoirs that led to the 303(d) listing in this report, the following inland lakes were chosen as Ohio's priorities for the next few years:

- Tappan Lake in Harrison county (upper Little Stillwater Creek)
- W.H. Harsha Lake in Clermont County (Lucy Run - East Fork Little Miami River)
- Clyde/Beaver Creek Reservoir in Seneca County (Beaver Creek, Green Creek)

The impairments (or watch list parameters) cited include nitrate, pesticides and algae indicators. Where there is a TMDL developed, it is older and/or does not include the stream reaches that most impact the lake/reservoir. In most cases, there are active local parties interested and/or there is a sizable population served by these sources. Ohio EPA considers nutrients (primarily phosphorus as the TMDL parameter) to be the priority for the inland lake efforts. However, the cause of impairment in more than one area also includes pesticides and/or nitrates, so other pollutants may be added to the TMDL or alternative plan. These waters are listed on the 303(d) Priority list in Section L4 as follows:

AU Number	AU Name	Sq. Mi. in Ohio	Human Health	Recreation	Aquatic Life	PDW Supply	Priority Points
05040001 15 03	Upper Little Stillwater Creek	29.72	1	1	3	5	5
05090202 12 03	Lucy Run-East Fork Little Miami River	32.48	1	1	5	5	7
04100011 12 02	Beaver Creek	29.3	3i	4Ah	4A	5	5
04100011 12 03	Green Creek	30.78	1	5	4A	5	9

While they do not have the highest priority points, the AUs with higher priority points that include a PDWS impairment already have a TMDL under development or will be addressed through other means such as the Great Lakes Water Quality Agreement Annex 4 nutrient reduction efforts discussed in J3.

Tappan Lake

- Stillwater Creek basin – primarily forest with mining influences.
- 2,350 acres of water surface.
- Provides drinking water to the Village of Cadiz (pop. ~ 3,350).
- Lake is operated by the U.S. Army Corp of Engineers. It is a multipurpose project for flood reduction, recreation and fish and wildlife enhancement.
- Assessed by Ohio EPA in 2012-2013 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin).

2018 IR Update

The Tappan Lake Nutrient Reduction Initiative (TLNRI) was formed at the end of 2017 by the Muskingum Watershed Conservancy District and the Village of Cadiz. TLNRI's goal is to eliminate the presence of harmful algal blooms and their resultant water-borne toxins in Tappan Lake within the next decade. The TLNRI has outlined the following steps toward achieving their goal:

- Phase 1: Comprehensive study of existing water quality data for the watershed and identification of gaps (year one)
- Phase 2: Collection of data to fill gaps, evaluation and selection of remedial actions for the watershed (years two through four)
- Phase 3: Implementation of action plan for the watershed (years five through 10)

Ohio EPA is an active partner in the initiative and will provide support through participation in the four subgroups. The Stillwater Creek watershed is a high priority project for either a TMDL or an alternative plan. The Agency will continue to participate in the TLNRI efforts and determine which approach is most appropriate as that work unfolds.

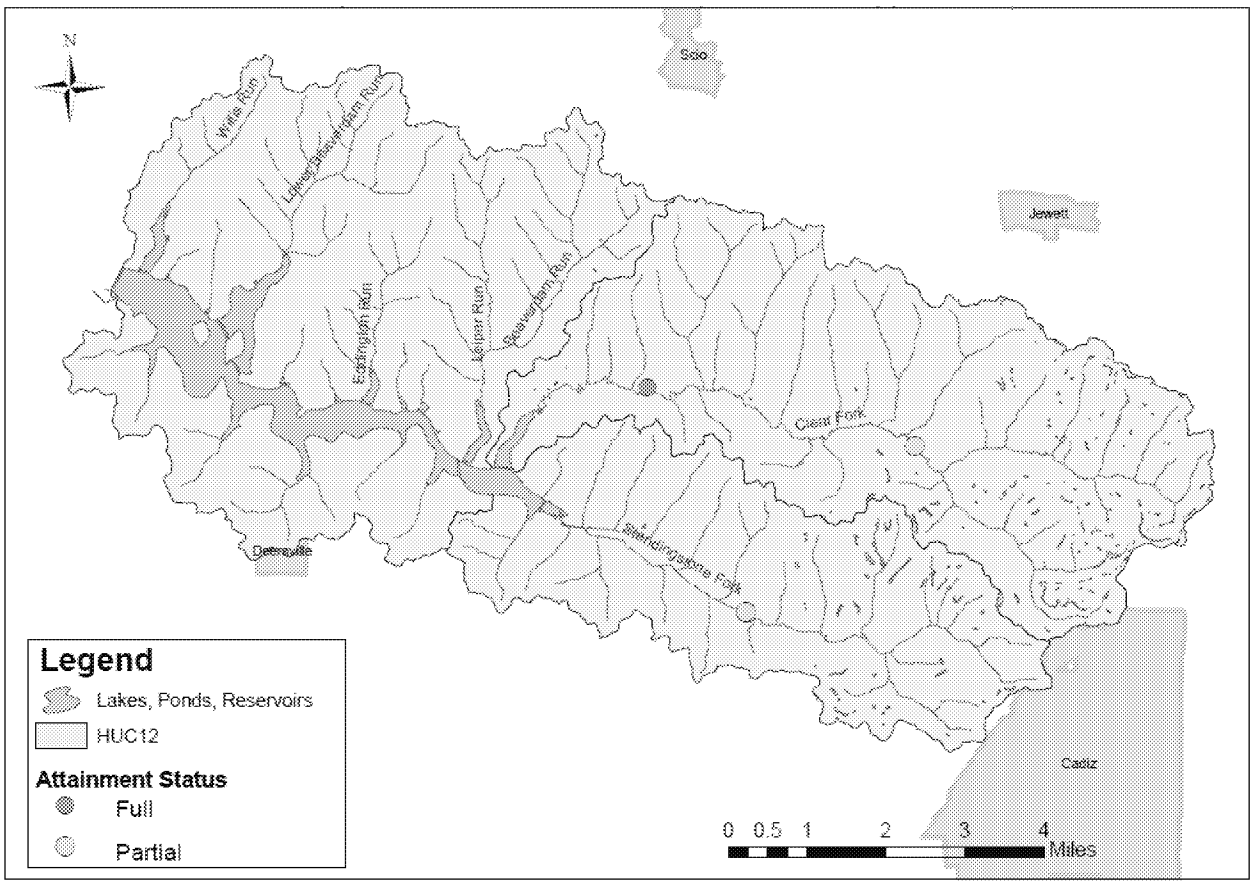

Figure J-3 — Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey.

William H. Harsha Lake

- Located in the East Fork of the Little Miami River watershed – largely agriculture and forest with some urban influence.
- 2,160 acres of water surface.
- Lake is operated by the U.S. Army Corp of Engineers and is a multipurpose project for flood reduction, water supply, recreation and wildlife habitat.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin) and placed it on the watch list for atrazine.

From the *Ohio EPA East Fork Little Miami River Technical Support Document, 2014*:

- Clermont County operates a community public water system that serves a population of approximately 117,097 people. The water supply sells water to the village of Batavia, village of Williamsburg and New Richmond Robin-Grays water system. Clermont County operates two ground water plants and one surface water plant. The BMW surface water plant draws water from an intake structure on Harsha (East Fork) Lake. The system's treatment capacity is approximately 27.5 million gallons per day, but current average production is 12.5 million gallons per day.
- There are several environmental organizations active in the East Fork Little Miami River watershed. The oldest of these is Little Miami Incorporated (LMI) which has been active for 45 years. Most of LMI's activities have involved the purchase of conservation easements or property purchases in the riparian zone of the river. Clermont County and SWCDs in Clermont, Brown, Highland and Clinton counties formed the East Fork Watershed Collaborative to take advantage of ODNR's Watershed Coordinator Program.
- Several research projects have been initiated in the East Fork watershed and Harsha Lake by U.S. EPA's National Exposure Research Laboratory in Cincinnati and the U. S. Army Corps of Engineers. Among other topics research and monitoring are examining HABs and nutrients, impacts on the Clermont County water intake, carbon sequestration, methane release, nutrient trading, environmental tipping points and fish population genetics. Currently, seven different projects are conducting monitoring in Harsha Lake.

2018 IR Update

The East Fork Watershed Cooperative, formed in 2001, continues to be active in addressing water quality issues in the East Fork Little Miami River watershed. The Cooperative is in the process of updating watershed action plans into Nine Element Nonpoint Source Implementation Strategy Plans. The first updated plan for the Fivemile Creek HUC 12, approved by Ohio EPA on July 31, 2017, is located upstream of Harsha Lake. The East Fork Little Miami River watershed is a high priority TMDL project for TMDL development. The Agency plans to initiate the next steps in the TMDL development process by the 2020 IR.

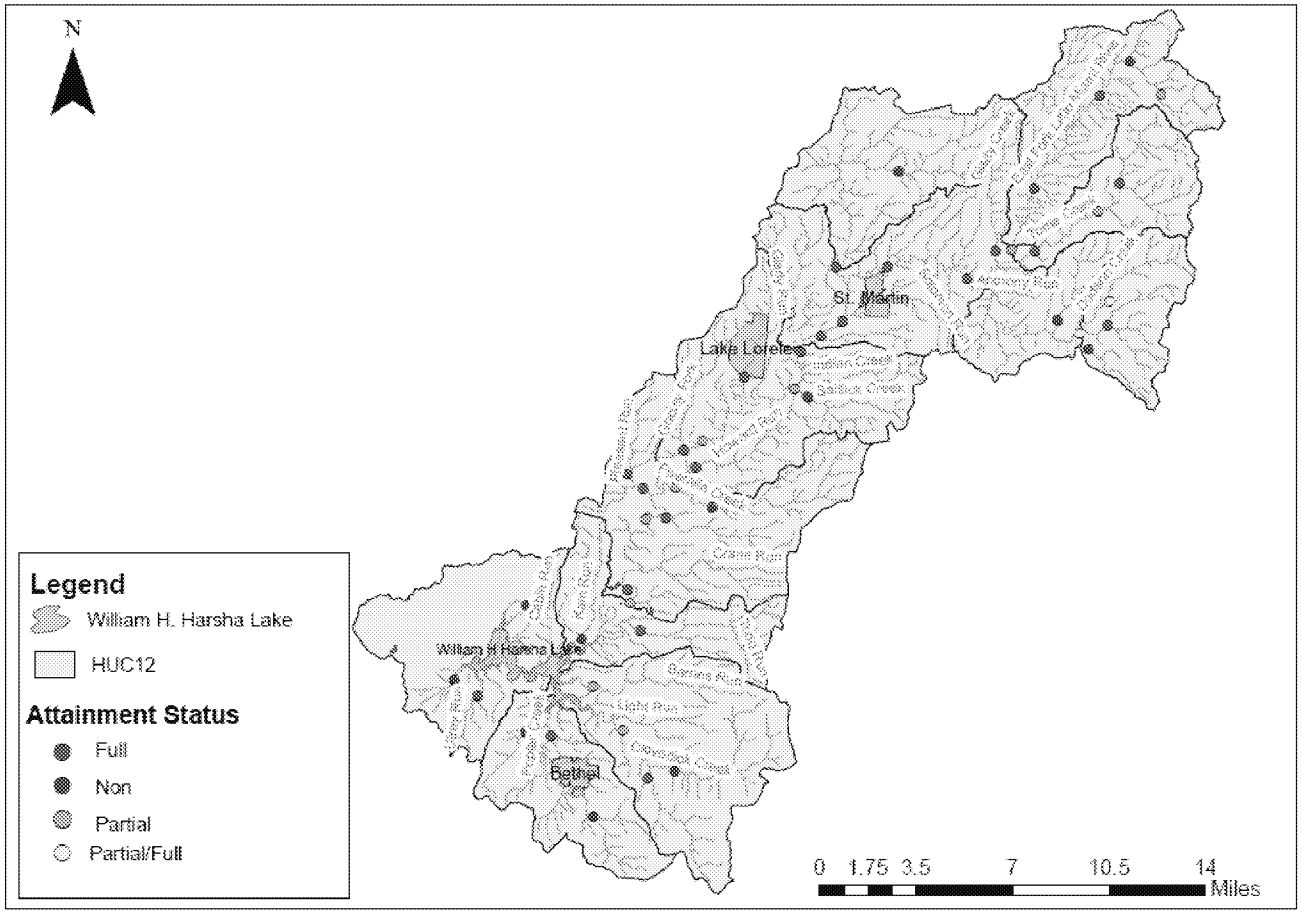

Figure J-4 — Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey.

Clyde/Beaver Creek Reservoir (up-ground)

- Sandusky river watershed - primarily agricultural land use above reservoir.
- 110 acres of water surface.
- Provides drinking water to the City of Clyde (pop. ~6,320).
- Reservoir was assessed by Ohio EPA in 2009-2010 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* placed the lake on the watch list for PDWS use based on algae indicators (microcystin) and nitrates. In the *2016 Integrated Report* it was listed as impaired for PDWS use based on algae indicators.
- The Raccoon Creek reservoir that also serves the City of Clyde is filled with water from Beaver Creek. The Raccoon creek reservoir was listed in the 2014 IR as impaired for PDWS based on algae indicators (microcystin).
- A TMDL for the lower Sandusky River was completed by Ohio EPA and approved by U.S. EPA but did not set specific loads for Beaver Creek since the stream was not listed as impaired.

2018 IR Update

Sampling of Raccoon Creek reservoir was completed in 2016 and 2017 as part of Ohio EPA's inland lakes sampling program. The results of this sampling will be included in the 2020 IR and will be used to direct the next steps in the restoration process for this watershed.

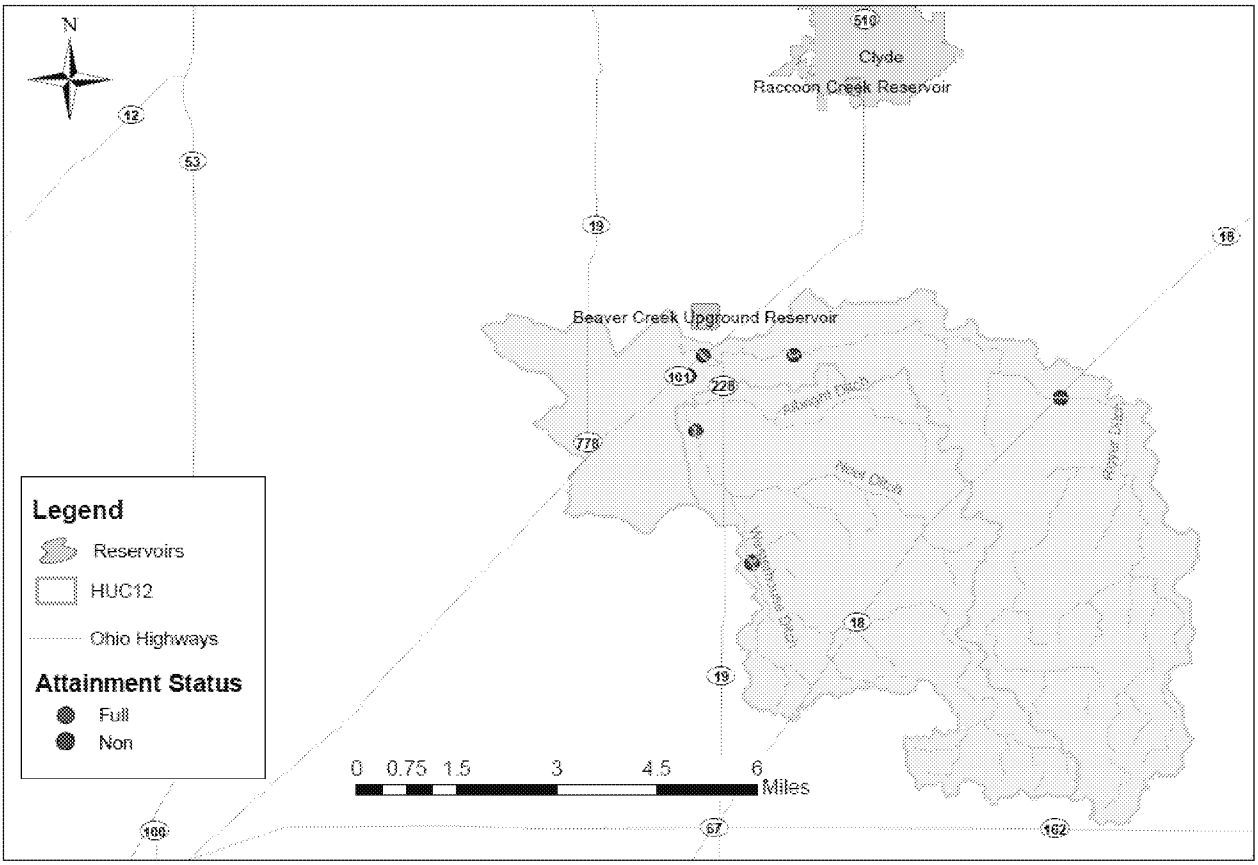

Figure J-5 — Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009.

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 in accordance with the Domestic Action Plan; and active participation on Annex 4 (Nutrients) and other Great Lakes Water Quality Agreement (GLWQA) efforts. Effective lake management and coordinated implementation are needed to address the Western Basin of Lake Erie algal blooms and the Central Basin hypoxia issues, requiring a multi-state and binational effort. Currently, there are many parallel planning and management efforts ongoing at the state, federal and binational level. For the open waters of Lake Erie, respecting and working through the binational governance framework is the appropriate process and Ohio intends to aggressively pursue state measures that complement the process and are neither duplicative nor contradictory.

Great Lakes Water Quality Agreement

Binationally, the U.S. and Canada are working together under the GLWQA to develop nutrient reduction strategies; and create and implement action plans to meet the targets. Annex 4 of the 2012 GLWQA specifically addresses nutrients in the Great Lakes and contains short-term requirements specific for Lake Erie. The U.S. and Canada formally adopted new phosphorus targets for the western and central basins of Lake Erie in February 2016. These targets have been incorporated into Ohio's Domestic Action Plan and are the goals for all the state's efforts to reduce phosphorus loading to the lake.

As water quality has improved through the decades, Ohio EPA has addressed most of the significant point source problems and are now left with primarily nonpoint source related impairments. The current Lake Erie algal blooms and Central Basin hypoxic zone are driven by nutrient loading to the Lake. Recent assessments by the Ohio Phosphorus Task Force (Phases I and II) and Annex 4's Objectives and Targets Task team, as well as a Nutrient Mass Balance Study completed by Ohio EPA in December 2016, 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 waterbody (Lake Erie). To compliment the 40 percent phosphorus reduction goals set forth by the Annex 4 committee, a separate analysis is being done to set seasonal/annual load reductions targets for the smaller tributaries (for example, within the Maumee basin). Ohio is directly involved in developing these goals and reduction targets needed for Lake Erie while moving forward on developing implementation strategies and acting to reduce nutrient contributions to the lake.

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.

Lake Erie Collaborative Agreement

The Lake Erie Collaborative Agreement was another state/province led-initiative; it was signed in June 2015 by Ohio, Michigan and Ontario (*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. One of the goals spelled out in the Collaborative Agreement was to reduce nutrient levels going into Lake Erie by 40 percent. The other was to develop a strategic plan to manage dredge material 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.

Ohio's Domestic Action Plan for Lake Erie

The State of Ohio's Domestic Action Plan expanded upon the *Collaborative Implementation Plan* and was submitted to U.S. EPA on Feb. 7, 2018. The commitment to meet the Collaborative Agreement phosphorus reduction goals of 20 percent by 2020 and 40 percent by 2025 was also incorporated into this plan. The plan is not intended to static but to be revised following the adaptive management philosophy. (*lakeerie.ohio.gov/Portals/0/Ohio DAP/DAP 1-0 Final for USEPA 2018-02-07.pdf*).

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 continue utilizing this tool to target implementation in Ohio's Lake Erie watersheds as it works to meet the Annex 4 phosphorus targets and allocations.

The TMDL document 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.

Ohio has completed TMDLs 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 nutrients and algae and have established phosphorus 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. However, Ohio is working with U.S. EPA, Tetratech (the contractor), Indiana and Michigan to develop a method for setting load reduction goals for the smaller tributaries to Lake Erie (for example, the tributaries to the Maumee river) and evaluate whether the tributary TMDLs will provide the load reductions needed to protect the lake. Where the local TMDL reductions are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps.

The Annex 4 process of developing loading targets and Domestic Action Plans are very similar 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.

State TMDL vs Binational Annex 4

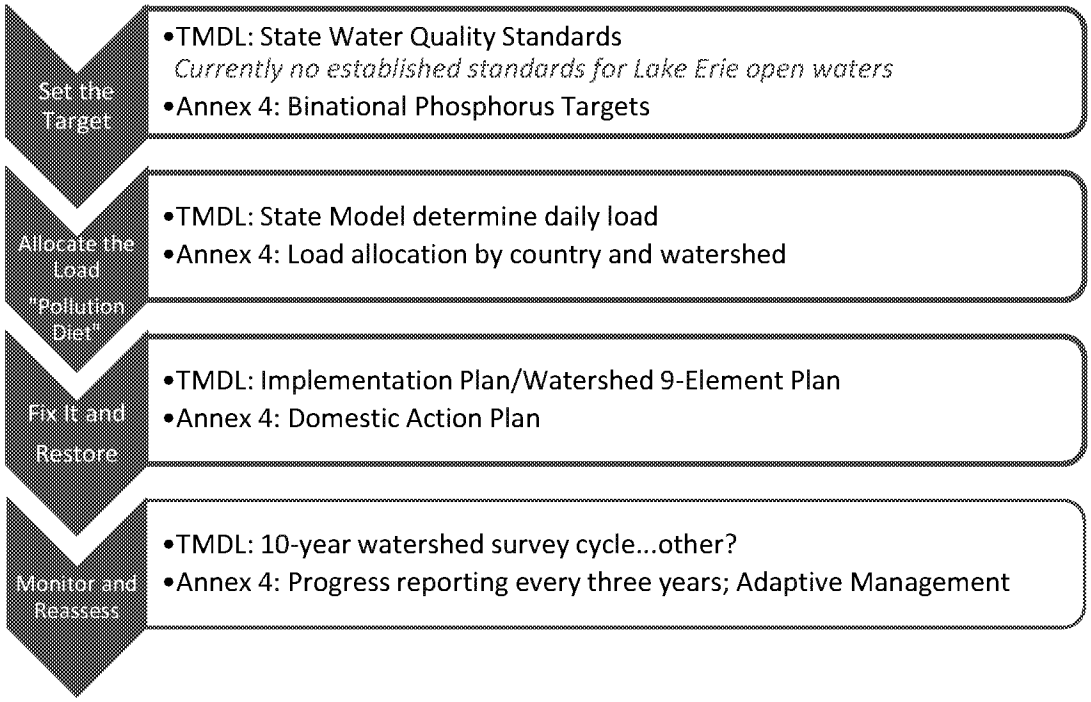

Figure J-6 — Key steps in the state TMDL and binational Annex 4 processes.

Ohio-based Nutrient Reduction Efforts

Ohio EPA's *NPS Management Plan* (Plan) is the Agency's guiding document that outlines recommended strategies, goals and objectives for controlling nonpoint sources of water quality impairment. The Plan was most recently updated in 2014 and identifies specific management activities to be implemented by Ohio EPA's NPS management program. The recent algal blooms on Lake Erie, the Ohio River and across the inland waters of Ohio were caused by excessive nutrients and exacerbated by changing weather patterns such as warmer temperatures and more intense storm events. The long-term solution is to reduce sources of nutrients while holistically restoring stream health and improving the waterway's ability to assimilate and utilize nutrients. This is also known as the stream's assimilative capacity. Restoring stream health will not only reduce the amounts of nutrients that reach the receiving water body, but restoration of in-stream and riparian habitat supports a healthy ecosystem, builds resilience to climate change impacts and improves recreational opportunities. The most current version of Ohio's *NPS Management Plan* is available at *epa.ohio.gov/Portals/35/nps/NPS_Mgmt_Plan.pdf.*

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 in 2010 and has expanded the scope and scale of implementation, developed a statewide strategy, targeted funding and undertaken legislative action to address the problem. As part of the more than $3 billion Ohio has invested comprehensively in the Lake Erie watershed, more than $150 million was made available starting in 2014 to help to public water systems keep drinking water safe and wastewater facilities reduce the amount of phosphorus they discharge into the Lake Erie watershed. In addition, Ohio continues to target millions of dollars to support local health departments to find and fix faulty residential septic systems that are contributing nutrients to Ohio waters.

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

- 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 *epa.ohio.gov/dsw/wqs/NutrientReduction.aspx*.
- GLRI Demonstration and Nutrient Reduction Projects — Nine grants totaling more than $13.9 million were awarded to Ohio. Highlights include: installation of the first two saturated buffers installed in Ohio; installation of approximately 70 controlled drainage structures; development of 52 whole farm conservation plans; planting of more than 9,000 acres of cover crops; installation and planting of 50 acres of reconstructed or restored wetlands; restoration of 3,500 linear feet of stream and 500 feet of streambank stabilization; installation of 4,400 feet of two-stage ditches; installation of rain gardens and vegetated infiltration basins in the Toledo area; and completion of 29 storm water, wetland and stream restoration projects in Cuyahoga County.
- 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[5]; 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.
- Ohio Senate Bill 150 — This bill, effective Aug. 21, 2014, requires, among other things, that beginning Sept. 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.
- Ohio HB 64 — This bill, effective June 30, 2015, required 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 *legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-64*.
- 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.
- 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.
- 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 several recommendations to be implemented during the next several years. For example,

[5] "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.

the report recommends ways for farmers to better manage fertilizers and animal manure and 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 *agri.ohio.gov/topnews/waterquality/docs/FINAL_REPORT_03-09-12.pdf.*

- 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 *lakeerie.ohio.gov/Portals/0/Reports/Task_Force_Report_October_2013.pdf.*
- 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 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 *epa.ohio.gov/portals/35/documents/point_source_workgroup_report.pdf.*

J4. Summary of Results

The consolidated results of the 2018 analysis are shown in Table J-4 and Figure J-7 — Summary of 2018 IR results for watershed AUs by beneficial use. through Figure J-9.

Table J-4 — Summary of results for each beneficial use[6]

	Human Health (fish tissue)	Recreation	Aquatic Life	Public Drinking Water Supply
Watershed assessment units				
Not being used for PDWS	0	0	0	1434
Attains	230	157	500	31
Unknown	872	186	109	39
Impaired, needs TMDL	436	750	411	33
Impaired, TMDL complete	0	445	408	1
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	14	0
Impaired, natural condition	0	0	96	0
Total watersheds considered	**1538**	**1538**	**1538**	**1538**
Large river assessment units				
Not being used for PDWS	0	0	0	29
Attains	6	3	18	0
Unknown	0	3	0	4
Impaired, needs TMDL	32	26	12	5
Impaired, TMDL complete	0	6	5	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	3	0
Impaired, natural condition	0	0	0	0
Total large rivers considered	**38**	**38**	**38**	**38**
Lake Erie assessment units				
Not being used for PDWS	0	0	0	1
Attains	0	0	0	0
Unknown	3	2	3	0
Impaired, needs TMDL	4	5	4	6
Impaired, TMDL complete	0	0	0	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	0	0
Impaired, natural condition	0	0	0	0
Total Lake Erie considered	**7**	**7**	**7**	**7**

[6] 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.

L

Summary Tables of Waterbody Conditions; Lists of Prioritized Impaired Waters; and Monitoring and TMDL Schedules

Section L contains tables showing the 303(d) listing details for each of the assessment unit types and is divided into five sections as follows:

- Section L1: Status of Watershed Assessment Units
- Section L2: Status of Large River Assessment Units
- Section L3: Status of Lake Erie Assessment Units
- Section L4: Section 303(d) List of Prioritized Impaired Waters
- Section L5: Category 4B demonstrations contained in approved Ohio TMDLs to date

In Sections L1 through L4, there are four columns labeled, in order, Human Health, Recreation, Aquatic Life and PDW Supply. These four columns represent each beneficial use included in the 303(d) list of impaired waters and the numbers in the columns represent the category for that assessment unit for that beneficial use. Table L-1 defines the categories and subcategories assigned to each use.

Table L-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[1]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[2] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[3]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

[1] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[2] HUC means hydrologic unit code.
[3] Ohio currently has no waters that are listed under this subcategory.

05090202 90 02	Little Miami River Mainstem (O'Bannon Creek to Ohio River)	1757	5	4Ah	5	0	4

Section L3. Status of Lake Erie Assessment Units							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
041202000101	Lake Erie Islands Shoreline (≤3m)	4.99	5	5	5	5	14
041202000201	Lake Erie Western Basin Shoreline (≤3m)	47.88	5	5	5	5	17
041202000202	Lake Erie Sandusky Basin Shoreline (≤3m)	68.01	5	5	5	5	16
041202000203	Lake Erie Central Basin Shoreline (≤3m)	13.39	5	5	5	0	9
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
041202000302	Lake Erie Sandusky Basin Open Water (>3m)	361.71	3i	3	3	5	5
041202000303	Lake Erie Central Basin Open Water (>3m)	2544.98	3i	3	3	5	5

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 37 of 38. PageID #: 9510

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Section L4. Section 303(d) List of Prioritized Impaired Waters							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
041202000201	Lake Erie Western Basin Shoreline (<=3m)	47.88	5	5	5	5	17
04100009 90 02	Maumee River Mainstem (Beaver Creek to Maumee Bay)	6608	5	5h	5	5	16
041202000202	Lake Erie Sandusky Basin Shoreline (<=3m)	68.01	5	5	5	5	16
04100009 90 01	Maumee River Mainstem (Tiffin River to Beaver Creek)	6058	5	5h	5	5	15
05030103 08 06	Burgess Run-Yellow Creek	20.19	5h	5h	5	5	15
041202000101	Lake Erie Islands Shoreline (<=3m)	4.99	5	5	5	5	14
04100005 90 01	Maumee River Mainstem (IN border to Tiffin River)	2315	5	5h	1	5	13
04100007 12 06	Big Run-Flatrock Creek	48.28	5	5h	5	1	12
05040003 03 04	Delano Run-Kokosing River	32.95	5	5h	5	0	12
05060001 04 06	Glade Run-Scioto River	38.34	5h	5h	5	3i	12
05060001 06 02	Middle Mill Creek	59.91	3	5h	5d	5	12
05090202 10 05	West Fork East Fork Little Miami River	28.88	1h	5h	5	5	12
05030103 90 01	Mahoning River Mainstem (Eagle Creek to Pennsylvania Border)	1075	5	5h	5	0	11
05080002 90 02	Great Miami River Mainstem (Four Mile Creek to Ohio River)	5371	5	5h	5	0	11
04100006 03 03	Flat Run-Tiffin River	33.17	5	5h	5	3i	11
04100007 06 04	Dry Fork-Little Auglaize River	57.07	1	5h	1	5	11
04110002 02 03	Lake Rockwell-Cuyahoga River	61.33	5	5	4Ah	5	11
05060001 90 02	Scioto River Mainstem (Olentangy River to Big Darby Creek)	2641	5	5h	5	0	10
05080001 90 01	Great Miami River Mainstem (Tawawa Creek to Mad River)	1853	5	5h	5	3i	10
04100003 02 04	West Branch St Joseph River	14.76	5	5h	5	0	10
04100004 02 05	Prairie Creek-St Marys River	42.22	5	5h	5	0	10
04100004 03 03	Yankee Run-St Marys River	59.44	5	5h	5	0	10
04100006 05 02	Brush Creek	66.01	5h	5h	5	0	10
04100012 02 04	Mouth Vermilion River	28.13	5	5h	5h	1	10
04110003 01 05	Lower Ashtabula River	18.27	5	5h	5	0	10
05030103 08 05	Headwaters Yellow Creek	19.36	3	5h	5	5	10
05080002 07 04	Dicks Creek	27.71	5h	5h	5	0	10
05090202 02 06	Shawnee Creek-Little Miami River	32.07	5h	5h	5d	0	10
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
05060001 90 01	Scioto River Mainstem (L. Scioto R. to Olentangy R.); excluding O'Shaughnessy and Griggs reservoirs	1068	5	3i	5	5	9
04100001 03 07	Heldman Ditch-Ottawa River	28.15	5	5h	5	0	9
04100003 03 03	Eagle Creek	35.00	5h	5h	5	0	9
04100004 01 02	Center Branch St Marys River	29.00	5h	5h	5	0	9
04100004 02 04	Twelvemile Creek	23.58	5h	5h	5	0	9
04100009 06 03	Haskins Road Ditch-Maumee River	15.73	3	5h	1	5	9
04100011 12 03	Green Creek	30.78	1	5h	4A	5	9
04110001 01 08	Baker Creek-West Branch Rocky River	26.08	5	5h	5	0	9

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 38 of 38. PageID #: 9511

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Message

From: Tiffani.Kavalec@epa.ohio.gov [Tiffani.Kavalec@epa.ohio.gov]
Sent: 8/7/2018 12:17:30 AM
To: Wall, Tom [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=128011ac603c4d1a82301ada1bdfd733-Twall]
CC: Swenson, Peter [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eaf7e8d916134568ba23121a89260045-PSwenson]; Glazer, Thomas [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6578deb6a4b042ffbe42a9854429feb5-Glazer, Tho]; Havard, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9350676809e8403994f1dfc2b7bfdcfe-JHAVARD]
Subject: Re: August 21st Federal Hearing
Attachments: ATT00001.txt

Thanks all!!

Sent from my iPhone

On Aug 6, 2018, at 5:53 PM, Wall, Tom <Wall.Tom@epa.gov> wrote:

Tiffani – here you go:

From: Glazer, Thomas
Sent: Monday, August 06, 2018 4:58 PM
To: Swenson, Peter <swenson.peter@epa.gov>; Stillman, Sarah <Stillman.Sarah@epa.gov>; Melodia, Craig <melodia.craig@epa.gov>; Wall, Tom <Wall.Tom@epa.gov>; Havard, James <Havard.James@epa.gov>; Lewicki, Chris <Lewicki.Chris@epa.gov>
Subject: RE: August 21st Federal Hearing

Here is the notice for the hearing:

Notice [non-document] of hearing to be held on 8/21/2018 at 04:00 PM in Courtroom 204 before Judge James G. Carr. (C,D)

Let me know if they need anything else.

Best,
Tom

Tom Glazer
USEPA Office of General Counsel
Water Law Office
7426N WJC North
(202) 564-0908

From: Swenson, Peter
Sent: Monday, August 06, 2018 11:59 AM
To: Stillman, Sarah <Stillman.Sarah@epa.gov>; Melodia, Craig <melodia.craig@epa.gov>; Glazer, Thomas <glazer.thomas@epa.gov>
Subject: FW: August 21st Federal Hearing
Importance: High

See below

From: Tiffani.Kavalec@epa.ohio.gov [mailto:Tiffani.Kavalec@epa.ohio.gov]
Sent: Monday, August 06, 2018 10:55 AM
To: Wall, Tom <Wall.Tom@epa.gov>; Swenson, Peter <swenson.peter@epa.gov>
Subject: August 21st Federal Hearing
Importance: High

Hi,

Do either of you know what the logistics are for the August 21st 303(d) hearing? My legal staff and I would like to attend but do not have hearing details. Thanks!

Tiffani Kavalec, Chief
Ohio EPA | **Division of Surface Water**
P.O. Box 1049, Columbus, OH 43216-1049
Ph: 614-644-3538
Tiffani.Kavalec@epa.ohio.gov

<image001.jpg>

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

TABLE OF CONTENTS

TABLE OF AUTHORITIES ii

INTRODUCTION AND SUMMARY 1

BACKGROUND 2

ARGUMENT 5

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie 5

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act On Ohio's Plans To Address Nutrient Pollution in Lake Erie 12

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List 13

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie 16

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment 19

CONCLUSION 20

TABLE OF AUTHORITIES

CASES

Blue Water Baltimore v. Pruitt,
266 F. Supp. 3d 174, 180-81 (D.D.C. 2017),
judgment amended, 293 F. Supp. 3d 1 (D.D.C. 2017) 14

Ohio Valley Envtl. Coalition, Inc. v. Pruitt,
893 F.3d 225 (4th Cir. 2018) 5, 6, 7

San Francisco Baykeeper v. Whitman,
297 F.3d 877 (9th Cir. 2002) 6, 11

Scott v. Hammond,
741 F.2d 992 (7th Cir. 1984) 6, 7, 11, 12

Sierra Club v. McLerran,
No. 11-cv-1759, 2015 WL 1188522
(W.D. Wash., March 16, 2015) 7, 8, 9, 10, 17, 18

STATUTES

33 U.S.C. § 1313(d)(2) 3, 6

33 U.S.C. § 1314(a)(2)(D) 3

CODE OF FEDERAL REGULATIONS

40 C.F.R. § 130.7(b)(4) 4, 17

40 C.F.R. § 130.7(d)(1) 3

FEDERAL REGISTER

57 Fed. Reg. 33,040 (July 24, 1992) 5

LEGISLATIVE HISTORY

H. R. Rep. No. 92-911 (1972) 4

INTRODUCTION AND SUMMARY

The two motions before the Court essentially ask whether Ohio has made a "constructive submission" of no TMDL for nutrient pollution in the open waters of western Lake Erie. Plaintiffs' two new proposed claims assert that Ohio has not yet begun a TMDL for the lake's open waters, but Plaintiffs have not and cannot credibly assert that Ohio has clearly and unambiguously refused to ***ever*** prepare such a TMDL, and that makes all the difference. Ohio has not refused to prepare a TMDL for the western basin of Lake Erie and indeed expressly recognizes that a TMDL is needed and may be developed in the future. Therefore, even under the most expansive expressions of the so-called constructive submission theory articulated in *McLerran* and the other cases Plaintiffs cite, Plaintiffs' proposed Count Two fails to assert the facts necessary to state a claim that Ohio has constructively submitted no TMDL.

Plaintiffs also assert that when EPA approved Ohio's 2016 Section 303(d) list of impaired waters, EPA also approved certain statements Ohio made in its 2016 Integrated Report. Although EPA certainly

acknowledged Ohio's statements regarding the State's plans to address nutrient pollution in the lake's open waters, EPA neither approved nor disapproved them. Instead, EPA followed its regulations, which require EPA to approve or disapprove of the actual list of impaired waters still requiring TMDLs and the inclusion of priority rankings, *i.e.*, Ohio's Section 303(d) list. EPA has no formal role in reviewing the other parts of a state's Integrated Report. Plaintiffs' proposed Count One therefore fails to state a claim because Plaintiffs cannot point to any judicially reviewable final agency action regarding Ohio's plans to reduce nutrient pollution.

Finally, even if the Court finds that EPA did take final agency action regarding Ohio's plans, EPA's approval of Ohio's 2018 Section 303(d) list supersedes its approval of Ohio's 2016 list, which moots Plaintiffs' claim.

BACKGROUND

As we explained in our opening memorandum, ECF No. 39, the CWA sets a deadline for states to submit their initial TMDLs and Section 303(d) lists based on when EPA first identifies relevant

pollutants under 33 U.S.C. § 1314(a)(2)(D). After that, the statute requires states to submit subsequent Section 303(d) lists and TMDLs "from time to time." 33 U.S.C. § 1313(d)(2). While EPA's regulations specify that states must submit Section 303(d) lists every two years, *see* 40 C.F.R. § 130.7(d)(1), there is no similar regulatory requirement for TMDLs. Nor is there any requirement for states to submit additional TMDLs with their Section 303(d) list or as part of an integrated report. Instead, EPA's regulations simply provide that TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." 40 C.F.R. § 130.7(d)(1). Thus, there is no firm statutory or regulatory timeframe, deadline, or other restriction on the timing for states to submit TMDLs.

Nor is there any requirement for a state to begin work on a TMDL as soon as a water quality limited segment is listed as impaired. Plaintiffs argue that because Ohio has not yet started work on a nutrient TMDL, Ohio is not complying with a statutory requirement "to promulgate a [TMDL]." Pl. Combined Memo (ECF No. 40) at 1; *see also*

id. at 3 (asserting Ohio's "refusal to begin the TMDL process" is "illegal"). But in assembling their Section 303(d) lists, states must identify "waters targeted for TMDL development in the next two years," which allows waters to remain on a state's list for *more* than 2 years before waters are "targeted for TMDLs development." 40 C.F.R. § 130.7(b)(4). And as explained by longstanding EPA guidance interpreting the statutory and regulatory framework, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* at 63 (July 29, 2005) ("2006 Assessment Guidance") (relevant excerpts attached as Exhibit 1).

There is good reason for this flexibility because, as Congress understood when it enacted the TMDL program into law, "it is extremely difficult to apportion the discharge load from all point sources along a waterway or section of a waterway." H. R. Rep. No. 92-911, at 105-06 (1972). This is especially true of "'complex' TMDLs that may cover a large watershed or address particularly challenging pollution

problems," as opposed to comparatively "routine or 'simple' TMDLs that may be developed as part of an NPDES permit reissuance." Surface Water Toxics Control Program and Water Quality Planning and Management Program, 57 Fed. Reg. 33,040, 33,044 (July 24, 1992). For those TMDLs that require "complex analysis," it is appropriate to "allow time to collect necessary information and complete the analysis." 2006 Assessment Guidance at 63; *see also Ohio Valley Envtl. Coalition, Inc. v. Pruitt*, 893 F.3d 225, 231 n.4 (4th Cir. 2018) ("TMDLs may require substantial time and resources to develop."). The same guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57.

ARGUMENT

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie.

Plaintiffs repeatedly argue that Ohio has refused to begin the TMDL process for the open waters of western Lake Erie. *See, e.g.*, Pl. Combined Memo at 2, 3, 4, 5, 6. But, as explained below, the relevant legal question is whether Ohio has "'clearly and unambiguously'"

indicate[d] that it will not 'submit any TMDLs and has no plans to remedy this situation.'" *Ohio Valley Envir. Coal.,* 893 F.3d at 230 (quoting *S.F. Baykeeper v. Whitman*, 297 F.3d 877, 882 (9th Cir. 2002)). Plaintiffs have not and cannot point to any statement, action, or inaction by Ohio that clearly and unambiguously shows that Ohio will never prepare a TMDL for nutrient pollution in the open waters of western Lake Erie.

Plaintiffs rely on the constructive submission theory, which began in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984). In *Scott*, the State of Illinois had failed to submit any TMDLs, not even the initial ones for which the CWA does impose a deadline. However, the CWA does not provide a cause of action to sue a state if a state fails to submit a TMDL, so the plaintiffs in *Scott* sued EPA. EPA argued that once a state submits a TMDL, EPA must approve or disapprove the submission within 30 days, under 33 U.S.C. § 1313(d)(2), but if a state does not submit anything, EPA has no statutory duty to act. 741 F.2d. at 997-98. The Seventh Circuit found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure

. . . raises the possibility that the states have determined that [TMDLs] . . . are unnecessary." *Id.* at 997.

Almost every court which has adopted the legal fiction of a constructive submission has examined whether a state has abdicated its TMDL program statewide. *See Ohio Valley Envir. Coal.,* 893 F.3d at 229-30 (collecting cases). In a recent decision, the Fourth Circuit Court of Appeals reviewed the constructive submission caselaw and observed that courts "have declined to find a 'constructive submission' of no TMDLs where a state (1) has produced at least some TMDLs and (2) has a credible plan in place to produce others." *Id.* Plaintiffs do not, and cannot, allege that Ohio has failed either of those prongs, let alone both of them.

Plaintiffs instead argue that Ohio has constructively refused to submit a particular TMDL. Only one court, *Sierra Club v. McLerran,* No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015), has indicated that a state like Ohio, with an otherwise robust TMDL program, can nonetheless trigger a constructive submission. No court in this Circuit has adopted the constructive submission theory, much

less *McLerran*'s unprecedented extension of it, and the Court should not do so now. But even if the Court were to adopt the theory, and to take the additional step of following *McLerran*, not even that case supports Plaintiffs' attempt to state a constructive submission claim.

In *McLerran*, the court considered a citizen suit to compel EPA to disapprove the State of Washington's alleged constructive submission of no TMDLs for PCBs in the Spokane River. Although the court went beyond the constructive submission theory as articulated by the Fourth and Seventh Circuits, and other courts, to conclude there could be a constructive submission of no TMDL when a state "clearly and unambiguously indicate[s] that it will not produce a particular TMDL," the court actually held that such a situation had not occurred, even though the Spokane River was first listed for PCBs in 1996. *Id.* at *2, 7-9. In the court's view, where "information gaps persisted such that [the state] could not confidently issue a TMDL at any point in the near future, adopting an alternative may, under some circumstances, represent a reasonable interim measure rather than an abandonment of any future plans to prepare a TMDL." *Id.* at *8.

Assuming for the sake of argument that the Court agrees with *McLerran*'s view of the constructive submission theory, Plaintiffs have not alleged the specific facts necessary to meet *McLerran*'s standard. Ohio's 2018 Integrated Report explains "why a TMDL is not being pursued *immediately*," Ohio 2018 Integrated Water Quality Monitoring and Assessment Report ("2018 Integrated Report") (relevant excerpts attached as Exhibit 2) at D-31 (emphasis added). Ohio also lists most of the lake's assessment units as "Impaired, needs TMDL." *Id.* at J-16. As in *McLerran*, the State has not "abandon[ed] any future plans" to produce a TMDL for the open waters and Plaintiffs have alleged no specific facts to the contrary.

Plaintiffs also claim that Ohio is merely giving "lip service to the idea that it may establish a TMDL at some undetermined future time," Pl. Combined Memo at 1, but Plaintiffs have absolutely no support for that statement, and certainly nothing to show that the State has "clearly and unambiguously *abandoned* its obligation to produce a TMDL." *McLerran*, 2015 WL 1188522, at *7 (emphasis in original). Ohio's 2018 Integrated Report explains in detail the efforts Ohio is

making to address nutrients in Lake Erie. 2018 Integrated Report at J-10. These efforts include the Great Lakes Water Quality Agreement, the Lake Erie Collaborative Agreement, Ohio's Domestic Action Plan for Lake Erie, TMDLs for 22 of the 32 watersheds that feed into the lake, and numerous other nutrient reduction efforts. *Id.* at J-10 to J-15. Plaintiffs have identified nothing in the Clean Water Act that would strip Ohio of its "considerable flexibility" to pursue these nutrient pollution control efforts before developing a TMDL for the western basin of Lake Erie.

Plaintiffs dismiss these efforts out of hand, as simply a means of indefinitely delaying a TMDL, again relying on *McLerran*. Pl. Combined Memo at 1. But *McLerran* cannot save Plaintiffs' constructive submission claim, for two reasons. First, as just explained, the court in *McLerran* found that the State of Washington's exploration of an alternative to a TMDL did *not* amount to a constructive submission of no TMDL. Second, the waterbody in *McLerran* had been on the state's Section 303(d) list for 19 years. 2015 WL 1188522 *10. Here, in contrast, the open waters were first listed this year. While

Plaintiffs may argue that the lake's open waters should have been listed in 2016, they cannot dispute that the obligation to develop a TMDL cannot precede a waterbody's listing as impaired.

If Plaintiffs are allowed to state a claim for a constructive submission by alleging that Ohio has not begun work on a TMDL less than a year after the lake's open waters were listed, the constructive submission theory would be stretched far beyond what any judicial decision, including *McLerran*, has held. It would amount to a rule that a state must begin developing a TMDL as soon as a waterbody is listed. That would upend the states' statutory prioritization process and would go beyond anything that the CWA, EPA's regulations, or the caselaw requires. *Cf. San Francisco Baykeeper v. Whitman*, 297 F.3d 877, 885 (9th Cir. 2002) (Section 303(d) contains no "requirement of simultaneous submission of the list of polluted waters with the TMDL to correct each polluted water"). Such a holding would also effectively place Ohio's water quality program under a proxy conservatorship, something that no court has endorsed, which is precisely why the constructive submission theory has always been predicated on a state's "fail[ure]

over a long period of time to submit" TMDLs required by law. *Scott*, 741 F.2d at 996 (emphasis added).

Instead, Plaintiffs' motion to add their proposed Count Two should be denied because Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.[1]

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

In order for Plaintiffs' proposed Count One to state a claim, Plaintiffs must allege a judicially reviewable final agency action. Plaintiffs argue that the statements Ohio made in its 2016 Integrated Report regarding the State's plans to address nutrient pollution in Lake

[1] Plaintiffs' proposed Count Two suffers from the additional flaw that it only asserts that Ohio's 2016 section 303(d) list is a constructive submission of no TMDL. First Suppl. Compl. ¶¶ 103-104; Pl. Combined Memo at 2, 4, 5. In Argument II we explain why EPA's approval of the 2016 list is not a final agency action with respect to Ohio's nutrient pollution reduction plans and why EPA's approval of Ohio's 2016 list is moot, but a constructive submission argument depends on Ohio's intent, and that should be evaluated based on Ohio's most current statements. In other words, proposed Count Two also fails to state a claim because it fails to assert Ohio's *present* intentions regarding a TMDL for the open waters of western Lake Erie.

Erie amount to a constructive submission for EPA to approve or disapprove, separate and apart from Ohio's 2016 Section 303(d) list of impaired waters. Pl. Combined Memo at 9. Plaintiffs also argue that EPA in fact approved those statements when EPA approved the 2016 list. *Id.*

Plaintiffs' argument presents two problems. First, EPA's approval of Ohio's 2016 list is moot, so if EPA took any reviewable final agency action regarding a constructive submission (which it has not), that final agency action could only be EPA's approval of the 2018 list. Second, even if EPA's approval of the 2016 list is not moot, Ohio's statements regarding its plans to address nutrient pollution in Lake Erie are not a constructive submission of no TMDL, and EPA did not take any final agency action regarding Ohio's statements.

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Like Count Two, Plaintiffs' proposed Count One challenges EPA's approval of Ohio's 2016 Section 303(d) list. Plaintiffs argue that even though EPA has now approved a 2018 list, EPA's approval of the 2016 list is not moot because it is an action that is capable of repetition yet

evading review. Pl. Combined Memo at 7-8. Plaintiffs downplay the mootness argument as a "flurry of procedural claims that amount to nothing," *id.* at 6, but mootness is an essential question of subject matter jurisdiction that a court cannot simply waive aside.

Plaintiffs' challenge to EPA's approval of the 2016 list is moot. *See Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174, 180-81 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017). The plaintiffs in *Blue Water* sought to challenge "the reclassifications in [a] 2012" report, but EPA addressed those reclassifications in "both the 2012 and 2014" reports. 266 F. Supp. 3d at 180-81; *see also id.* (the 2014 report "reiterated the rationale stated in the 2012 [report] regarding the reclassification and de-listings at issue"). The court held that "a decision may be superseded by a subsequent decision based on the same rationale because the subsequent decision replaces the prior decision, rendering it void." *Id.* Just as the 2014 report in *Blue Water* "replace[d] the previous list," *id.*, Ohio's 2018 list replaced its 2016 list, so the 2016 list has "no further legal effect." *Id.*[2] The Court cannot

[2] Plaintiffs add in a footnote that the Court could allow them to amend

order any effective relief with respect to the 2016 list.

Plaintiffs assert that they satisfy the capable of repetition yet evading review exception to mootness. They argue that any legal defect in EPA's approval of the 2016 list is capable of repetition because the approval of the 2018 list "merely duplicates" EPA's prior approval, and that it evades review because it is too short in its duration to litigate. Pl. Combined Memo at 6, 8.

But any reading of Ohio's 2016 submission and EPA's 2016 approval to suggest that Ohio constructively submitted no TMDL by expressly disclaiming any responsibility to develop one, is resoundingly refuted by the 2018 Integrated Report and EPA's 2018 approval. The sole support for Plaintiffs' constructive submission claim – statements taken out of context from Ohio's 2016 Integrated Report and misconstrued as definitive statements that Ohio will never develop a TMDL for the western basin of Lake Erie – are *not* repeated in the 2018

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proposed Count One to address EPA's approval of the 2018 list, as the *Blue Water* court did, Pl. Combined Memo at 9 n.2. EPA agrees that this would resolve any mootness concerns, but that amendment would be futile. As we explain below, when EPA approved Ohio's 2018 list EPA took no action on Ohio's future TMDL plans, so Plaintiffs fail to identify a reviewable final agency action regarding either approval.

Integrated Report. Indeed, as noted *supra* at 9, the 2018 Integrated Report classifies all of the Lake Erie assessment units as "Impaired, needs TMDL." 2018 Integrated Report at J-16. Ohio also wrote that where the nutrient reductions from TMDLs in tributaries to Lake Erie "are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps." *Id.* at J-12. And EPA stated in its 2018 Approval that it "expects that under those circumstances [*i.e.*, the inadequacy of Ohio's current nutrient pollution reduction plans] such 'next steps' *would* include TMDL development for the Lake Erie Assessment Units directly." 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) ("EPA 2018 Approval") (ECF No. 40-1, attached as Exhibit A to Pl. Combined Memo), at 18 (emphasis added); *see also* 2018 Integrated Report at D-31 (recognizing that if the water quality in the western basin fails to improve, "a TMDL may ultimately be required").

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

Even if EPA's approval of Ohio's 2016 list were not moot, EPA's

statements regarding Ohio's plans do not amount to final agency action on whether Ohio constructively submitted no TMDL. Instead, EPA's approval is final agency action on exactly what it purports to be: the State's section 303(d) list of impaired waters, no more, no less.

Plaintiffs point out that EPA made a finding that Ohio's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking." Pl. Combined Memo at 10. As we noted in our opening memo, EPA simply confirms that the state has included a priority ranking that "tak[es] into account the severity of the pollution and uses to be made of such waters." 40 C.F.R. § 130.7(b)(4). EPA does not actually approve the ranking, much less Ohio's "discussion of its prioritization." *See* 2006 Assessment Guidance at 63 ("EPA will review the priority ranking but will not take action to approve or disapprove it."); *McLerran*, 2015 WL 1188522 at *6 (there is "no specific mechanism for reviewing [a state's] prioritization").

Plaintiffs also point to EPA's "blanket determination" that Ohio's 2016 list met the statutory and regulatory requirements. Pl. Combined Memo at 10. Plaintiffs argue that *McLerran* is analogous and refutes

Ohio's "flawed" approach. *id.* at 11, but Plaintiffs skip an essential step: in *McLerran* there was no question that EPA had taken final agency action on whether the state had made a constructive submission. The court in *McLerran* reviewed a separate approval document, issued outside the regular Section 303(d) review process and in response to a specific request to determine whether a state had abandoned a specific TMDL, in which EPA made the explicit conclusion that the state's strategy and task force were "an acceptable alternative to a TMDL." 2015 WL 1188522 at *4. This is materially different than the general statement at issue here, in the context of an Integrated Report. Unlike in *McLerran*, there is no final agency action on whether Ohio has abandoned a TMDL for the open waters of western Lake Erie, and without a final agency action, Count One fails to state a claim.

Plaintiffs raise the possibility of supplementing their complaint with yet a different count, addressing EPA's approval of Ohio's 2018 list, Pl. Combined Memo at 9 n.2, but that would also be futile. *See supra* n.2. In EPA's approval of Ohio's 2018 list, EPA noted Ohio's acknowledgment that TMDLs are required for any assessment units

that are listed as impaired. EPA 2018 Approval at 18. EPA's approval also explains that removing a segment from the Section 303(d) list may be warranted in some cases. For example, a TMDL would not be required if Ohio's efforts "result in the attainment of water quality standards prior to the development of a TMDL." *Id.* However, the substance of EPA's action was, like in 2016, an approval of Ohio's actual Section 303(d) list of impaired waters and its inclusion of a priority ranking of those waters, not an approval of the State's nutrient pollution reduction efforts as an alternative to a TMDL. *Id.* at 20.

Plaintiffs' proposed Count One therefore fails to state a claim, whether Plaintiffs plead Count One as a challenge to EPA's approval of Ohio's 2016 list or as a challenge to EPA's approval of Ohio's 2018 list.

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

Because Plaintiffs' two new proposed claims both fail to state a claim, and because EPA's approval of Ohio's 2016 Section 303(d) list, as amended, mooted Plaintiffs' claim that Ohio failed to list the open waters of western Lake Erie as impaired, there is nothing left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should grant Defendants' cross motion for summary judgment.

Respectfully submitted this 6th day of August 2018.

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CERTIFICATE OF SERVICE

I hereby certify that on August 6, 2018, I electronically filed the foregoing REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
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Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act

July 29, 2005

Watershed Branch
Assessment and Watershed Protection Division
Office of Wetland, Oceans and Watersheds
Office of Water
United States Environmental Protection Agency

This document provides EPA's guidance for preparing the 2006 Integrated Report. The Integrated Report is intended to satisfy the listing requirements of sections 305(b) and 314 of the Clean Water Act (CWA). This guidance document discusses existing requirements of the CWA and EPA's implementing regulations. Those statutory and regulatory provisions contain legally binding requirements. This document describes those requirements; it does not substitute for them. The recommendations in this document are not binding; indeed, there may be other approaches that would be appropriate in particular circumstances. When EPA makes a decision on a state's section 303(d) list, it will make each decision on a case-by-case basis and will be guided by the applicable requirements of the CWA and implementing regulations, taking into account comments and information presented at that time by interested persons regarding the appropriateness of applying these recommendations to the particular situation.

CONTENTS

Section Page

ABBREVIATIONS AND ACRONYMS v

I. INTRODUCTION 6

II REPORTING REQUIREMENTS UNDER THE CLEAN WATER ACT SECTIONS 303(D), 305(B), 314 AND CORRESPONDING REGULATIONS 9

III. RECOMMENDED ORGANIZATION OF AN INTEGRATED REPORT 13
EXECUTIVE SUMMARY 14
PART A. INTRODUCTION 14
PART B. BACKGROUND INFORMATION 14
PART C SURFACE WATER MONITORING AND ASSESSMENT. 17
PART D. GROUND WATER MONITORING AND ASSESSMENT 25
PART E. PUBLIC PARTICIPATION 25

IV. ISSUES CONCERNING THE DEVELOPMENT AND USE OF AN ASSESSMENT METHODOLOGY 29

V. FIVE-PART CATEGORIZATION OF WATERS 46

VI. REPORTING RESULTS 65

GLOSSARY 66

APPENDIX: DATA ELEMENTS FOR 2006 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT AND DOCUMENTATION FOR DEFINING AND LINKING SEGMENTS TO THE NATIONAL HYDROGRAPHY DATASET
. 70

TABLES

Table		Page
2-1	SUMMARY OF STATE REPORTING REQUIREMENTS UNDER CWA SECTIONS 303(D), 305(B) AND 314 AND CORRESPONDING REGULATIONS	11
3-1	ATLAS	15
3-2	SIZE OF SURFACE WATERS ASSIGNED TO REPORTING CATEGORIES	19
3-3	ATTAINMENT RESULTS CALCULATED USING PROBABILISTIC MONITORING DESIGNS	20
3-4	SEGMENT/POLLUTANT COMBINATIONS REMOVED FROM STATE'S YEAR 2004 SECTION 303(D) LIST	21
3-5	TMDL DEVELOPMENT STATUS	21
3-6	INDIVIDUAL DESIGNATED USE SUPPORT SUMMARY	22
3-7	SIZE OF WATERS IMPAIRED BY CAUSES	22
3-8	SIZE OF WATERS IMPAIRED BY SOURCES	23
3-9	TROPHIC STATUS OF SIGNIFICANT PUBLICLY OWNED LAKES	24
3-10	TRENDS IN LAKE WATER QUALITY	24
3-11	SUMMARY OF WATER QUALITY REPORTING ELEMENTS OF AN INTEGRATED REPORT	27
5-1	RECOMMENDED WATER QUALITY INDICATORS FOR GENERAL DESIGNATED USE CATEGORIES	52
5-2	DOCUMENTATION OF "GOOD CAUSE" TO MOVE SEGMENTS FROM CATEGORY 5.	58

FIGURES

Figure		Page
4-1	USING MULTIPLE TYPES OF DATA TO ASSESS ATTAINMENT	45

EXHIBITS

Exhibit		Page
3-1	RECOMMENDED ORGANIZATION FOR YEAR 2006 INTEGRATED REPORT SUBMITTALS	13
5-1	2006 INTEGRATED REPORTING GUIDANCE: SEGMENT CATEGORIZATION GUIDE	48

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ABBREVIATIONS AND ACRONYMS

ADB	Assessment Database
AU	Assessment Unit
CALM	Consolidated Assessment and Listing Methodology
CPP	Continuing Planning Process
CFR	Code of Federal Regulations
CWA	Clean Water Act
DQO	Data Quality Objectives
DU	Designated Use
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
FGDC	Federal Geographic Data Committee
GPRA	Government Performance Report Act
IR	Integrated Report
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NSSP	National Shellfish Sanitation Program
OW	Office of Water
PPG	Performance Partnership Grant
PWS	Public Water Supply
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RIT	Reach Indexing Tool
SDWA	Safe Drinking Water Act
STORET	STORage and RETrieval
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WQC	Water Quality Criteria
WQS	Water Quality Standard

I. INTRODUCTION

The *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* was developed specifically for the 2006 reporting cycle. The objective of this document is to provide to states, territories, authorized tribes, and interstate commissions[1] a recommended reporting format and a suggested content to be used in developing a single document that integrates the reporting requirements of the Clean Water Act (CWA) section 303(d) and section 305(b). This guidance for developing the Integrated Report (IR) supports the Environmental Protection Agency's (EPA) strategy for achieving a broad-scale, national inventory of water quality conditions. Use of the IR format will serve to report on water quality standards (WQS) attainment status of assessed waters, document availability of data and information for each segment, identify trends in water quality conditions, and provide information to managers in setting priorities for future actions to protect and restore the health of our nation's aquatic resources.

EPA has established a goal that all fifty-six states and territories utilize the integrated reporting format by 2008. EPA continues to promote this comprehensive assessment approach in order to enhance the states' ability to track both programmatic and environmental goals of the CWA, and ideally, to increase the pace of achieving these important environmental goals. This document includes recommendations designed to allow states and other interested stakeholders to track the progress of interim management actions by employing the multi-category reporting framework. By issuing this guidance well in advance of the April 1, 2006 deadline for submission of CWA section 303(d) lists and section 305(b) reports, EPA intends to encourage the broadest possible adoption of the integrated reporting approach.

EPA continues to advocate the use of the five-part categorization format for sorting waters (see box below for brief description and Section V). While this document is more comprehensive than previous Integrated Report Guidance, there are clarifications to the previous (2004) Integrated Report Guidance. Specifically, this guidance provides:

- increased emphasis on the use of the Assessment Database (ADB) or compatible electronic data format (the ADB is being modified to accommodate the recent format, content, and multi-category listing option that the guidance suggests),
- greater clarity on the content and the format of those components of the IR that are recommended and required under CWA sections 303(d), 305(b), and 314,
- greater clarity on issues associated with data solicitation, collection, consideration, and interpretation of water quality standards,
- additional information on the option to report water quality status of individual segments in more than one category (e.g., to show that some designated uses of a water are being attained and some designated uses are not),[2] and
- additional clarity and flexibility on undertaking and reporting alternatives to total maximum daily loads (TMDLs) for attaining water quality standards (e.g., utilization of reporting "Category 4b").

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[1] In the remainder of this document, unless specified otherwise, *states* also refers to authorized tribes, territories and interstates commissions.

[2] In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality, although note that states determine their section 303(d) list (i.e., Category 5) consistent with 40 CFR 130.7 (b)(3).

It is important to note that certain components of the recommended format and content for the 2006 IR document are based on requirements of the CWA and EPA's implementing regulations (e.g., the submission of an approvable section 303(d) list), whereas other components are based on Agency recommendations. In section II of this guidance, those components *required* by the CWA sections 303(d), 305(b), 314, and the corresponding regulations are identified.

In addition to identifying the required components in the 2006 IR submission, this guidance will indicate the components of the 2006 IR document for which EPA recommends states provide an opportunity for *public review and comment* (e.g., the list of impaired waters requiring TMDLs and the assessment methodology used by the state to develop their IR document).

Five Reporting Categories

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Integrated Monitoring and Assessment

The Clean Water Act requires states to provide every two years an assessment of the quality of all their waters (section 305(b)) and a list of those that are impaired or threatened (section 303(d)). To efficiently meet this charge, EPA recommends that states, tribes, and other water quality monitoring collaborators use a combination of monitoring and assessment techniques to:

1. increase the percentage and types of waters assessed;
2. reliably estimate the overall condition of all waters within a state; assess changes over time; and measure progress toward the "fishable-swimmable" goal of the Clean Water Act (section 305(b));
3. comprehensively identify all impaired and threatened waters to support section 303(d) listing requirements; and
4. prioritize site-specific assessments needed to confirm the location of both high quality and impaired waters, and support control, restoration, and prevention actions.

EPA has strongly encouraged states to use integrated monitoring and assessment techniques. These include probability-based assessments and other predictive tools, as well as site-specific assessments. The use of probability assessments can eliminate the risk of generating a biased picture of water quality conditions state-wide and provide a cost-effective bench mark of state water quality program effectiveness. The probability-based assessment results can also help a state decide if it should target certain waters for further assessment or if limited resources for water quality assessment could be used more effectively in other ways. States currently using broad-scale probability-based assessment to complement their site-specific assessment include VA, SC, KY, and IN, among others.

V. FIVE-PART CATEGORIZATION OF WATERS

Use of the Integrated Report format and the use of the five-part categorization scheme envisions that each state provides a comprehensive description of the water quality standards attainment status of all segments within a state. In this guidance, the term "segment" is synonymous with the term "assessment unit" (AU) used in previous IR Guidance. Fundamental to this accounting is the use of a consistent and rational segmentation and geo-referencing approach for all segments including rivers, streams, lakes, wetlands, estuaries, and coastal waters. There is no single approach to the development of a segmentation scheme. However, it is important that the selected segmentation approach be consistent with the state's water quality standards and be capable of providing a spatial scale that is adequate to characterize the WQS attainment status of the segment. The IRG provides some recommendations on how states may develop a segmentation scheme for monitoring, assessing and categorizing water quality conditions. Additionally, the IRG provides recommendations for assigning individual segments to the five-category system.

A. Recommendations for Segmenting Waters

EPA recommends that states consider using the National Hydrography Dataset (NHD)[15] coding scheme to georeference their segments, where segments may comprise part of an NHD reach, an individual NHD reach, or a collection of NHD reaches or parts of reaches. Alternatively, if a state has already developed a comparable Geographic Information System (GIS) framework, EPA requests that states provide any relevant information necessary to allow consistent georeferencing. Additionally, this information should be included in the state's ADB submission. States generally partition waters to represent homogeneity in physical, biological or chemical conditions. This segmentation may reflect an *a priori* knowledge of factors such as flow, channel morphology, substrate, riparian condition, adjoining land uses, confluence with other waterbodies, and potential sources of pollutant loadings (both point and nonpoint). While there is no single default dimension for a segment size, states have utilized these or similar principles when they defined the segments used in their water quality standards. Other factors may include the following:

- The expected natural variability of the measured criteria associated with the WQSs.
- The type of water (e.g., a small stream, a wide river, a tidal and stratified estuary, and coastal shoreline).
- Time of travel of a parcel of water in the waterbody or segment or the magnitude of any tidal excursions.
- The amount of and type of data and information necessary to provide a reasonably accurate characterization of the criteria (or core indicators) associated with the designated uses in the segment or waterbody.
- Any expected changes in significant influences in the watershed (land use, point or nonpoint sources of pollutants).
- Any site-specific concerns such as patchy or unique habitat distribution patterns or biological population distributions.

[15] By making this recommendation, EPA is not equating availability of geographical information on a water segment in the NHD with the legal definition of water of the U.S. under CWA.

Using NHD or other comparable GIS framework, a state should assign a discrete "address" or geo-location to each segment, and document the process used for defining water segments in their methodologies. The physical boundaries (beginning and end points) of a segment should be defined in such a manner that a scientifically valid assessment of each and every segment can be made. The individual size of a segment will vary based upon methodologies. Segments should, however, be larger than a sampling station but small enough to represent a relatively homogenous parcel of water (with regard to hydrology, land use influences, point and nonpoint source loadings, etc.).

B. How should segments be assigned to EPA's five reporting categories?

EPA continues to advocate the use of the five category approach for classifying the WQS attainment status for each segment. In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality. A segment is considered impaired when WQS[16] are not being supported and/or met, and is considered threatened when WQS are not expected to be fully supported and/or met in the next listing cycle. In classifying the status of water quality in 2006, states have the option to report each segment in one or more categories. EPA recommends that states use the following five reporting categories to classify segments as meeting or not meeting applicable WQS:

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Exhibit 5-1 provides an example of how to consider designated uses in the categorization process. EPA believes that the placement of segments into the five reporting categories best allows states to document attainment of applicable WQSs, and to develop monitoring strategies that effectively respond to the needs identified in the assessment, while ensuring that the attainment status of each water quality standard applicable to a particular segment is addressed.

[16] Water quality standards include designated use(s), criteria, and the antidegradation policy. Water quality criteria are important elements of water quality standards and attainment of criteria should also be evaluated in making listing decisions (See 40 CFR 130.7 (b)(3)). Failure to meet WQC warrant listing of waters under section 303(d). EPA has not developed guidance at this time on determining attainment status for antidegradation policies. EPA recognizes that such policies, while an important part of WQS, may not lend themselves to "attainment" determinations on a segment specific basis.

Exhibit 5-1. 2006 Integrated Reporting Guidance: Segment Categorization Guide

The following schematic describes a process states might consider using for determining the placement of segments into the Integrated Report (IR) Categories. The process begins with the assessment of the water quality standard attainment status (designated use(s), criteria) of each segment, and concludes with the placement of each segment into one or more of the five IR Categories. The assessment of the water quality standards attainment status should be consistent with the state's assessment and listing methodology and must ensure that segments not meeting or not expected to meet applicable water quality standards are identified. While the schematic focuses on the assessment of designated uses (DU) for each segment, as previously stated all components of the water quality standard are considered in the categorization of a segment.

Step-by-step process to categorize a segment

1. For each segment, assemble and consider all existing and readily available data and/or information to determine the support status for each individual designated use.
2. Based on the data and information available, make support decisions for each DU in the segment and assign the appropriate symbol (✔+, ✔-, ?, T, 4a, 4b, 4c – See *Symbols and Definitions*).
3. Using the results of Step 2, place the segment into the appropriate category or categories.

Symbols and Definitions:

✔+ = The existing data and information shows that a use ***is supported***.

✔- = The existing data and information shows that a use ***is not supported.***

? = There is insufficient existing data and information to make a use support determination, consistent with the state's assessment and listing methodology.

T = A use in this segment is currently being supported, but is **THREATENED** and it is projected not to be supporting by the next scheduled list submission date.

4a = A TMDL to address a specific segment/pollutant combination has been approved or established by EPA.

4b = A use impairment caused by a pollutant is being addressed by the state through other pollution control requirements.

4c = A use is impaired, but the impairment is not caused by a pollutant.

In the following schematic, each box represents one (1) segment. Each segment may contain one or more DUs. After compiling and considering all existing and readily available data and information for each DU in a specific segment, support decisions are made. Placement of the segment into the appropriate category or categories is based on the sufficiency of the data and information, and the analysis of whether the data demonstrates that the DU is supported.

SEGMENT #1 (1 DU) → **ASSESSMENT**

DU1 → ✔+

SEGMENT #2 (2 DUs) → **ASSESSMENT**

DU1, DU2 → T, ✔-

SEGMENT #3 (3 DUs) → **ASSESSMENT**

DU1, DU2, DU3 → ✔+, ✔+, ?

SEGMENT #4 (4 DUs) → **ASSESSMENT**

DU1, DU2, DU3, DU4 → ✔-, 4a, ?, ✔+

SEGMENT CATEGORIZATION

	DU1	DU2	DU3	DU4	Single Category	Multi-Category
SEGMENT 1	✔+				C1	C1
SEGMENT 2	T	✔-			C5	C5
SEGMENT 3	✔+	✔+	?		C2	C2 & C3
SEGMENT 4	✔-	4a	?	✔+	C5	C5, C4a, C3 & C2

Additional examples are provided below to further illustrate the process of segment classification into multiple categories.

	DU1	DU2	DU3	DU4	Single-Category	Multi-Category
SEGMENT A	✔+	✔+	✔+	✔+	C1	C1
SEGMENT B	✔-	✔-	✔-	✔-	C5	C5
SEGMENT C	✔-	✔-	✔-	T	C5	C5
SEGMENT D	?	?	?	?	C3	C3
SEGMENT E	4b	✔-	✔-	✔-	C5	C4b, C5
SEGMENT F	✔+	✔+	✔-	✔-	C5	C2 & C5
SEGMENT G	✔+	✔+	?	?	C2	C2 &C3
SEGMENT H	?	?	?	✔-	C5	C3 & C5
SEGMENT I	✔+	✔+	✔+	4c	C4c	C2, C4c
SEGMENT J	?	?	4c	T	C5	C3, C4c, & C5
SEGMENT K	✔+	?	?	✔-	C5	C2, C3, & C5
SEGMENT L	✔+	✔+	?	T	C5	C2, C3 & C5
SEGMENT M	✔+	?	4b	✔-	C5	C2, C3, C4b & C5

States have the option to place segments into more than one of the five categories when appropriate. The placement of segments into more than one category will allow states to:

1. Demonstrate progress in the efforts to develop TMDLs,
2. Track progress as segments incrementally attain some, but not all water quality standards, and
3. Identify those segments where there is a need to obtain additional data and information for purposes of determining attainment status of some water quality standards.

While EPA recommends that states adopt and utilize the IR format for reporting the status of their water quality in 2006, states may choose to submit separate 303(d) and 305(b) reports. Furthermore, even if a state chooses to use the IR format, it may choose to place each segment into only one category and rely on the reporting capability of ADB to provide detail on the support status of all individual uses. More detailed guidance for determining the appropriate categorization of segments is provided below. It is important to note that states must consider all existing and readily available data and information in developing their section 303(d) lists, and may choose to assess a segment and assign the segment to a category using data and information other than monitored data (e.g., land use, pollutant loading coefficients, remote sensing data, modeling, etc.).

C. May a state use subcategories or additional categories in its Integrated Report?

Yes, in order to refine their classifications, states may choose to establish new or additional subcategories in addition to the proposed five major categories. For example, a state may decide to divide Category 3 into two subcategories in order to distinguish between those segments for which no data and/or information exist from those segments for which some data and/or information exist, but the data are insufficient to make a determination whether the segment is attaining applicable standards. A state may also choose to use subcategories for segments placed into Category 3 when establishing monitoring priorities. For example, the state may place its segments into different subcategories depending on whether the segment is high, medium, or low priority for follow-up monitoring based on information from probability-based monitoring, landscape or water quality models, land use data, or limited site-specific monitoring.

D. Which segments should states include in Category 1?

Segments may be placed into Category 1 if all designated uses are supported, and no use is threatened. When a segment meets the Category 1 requirements, the state has concluded, consistent with their water quality standards (and their assessment methodology) that sufficient data and information exist to determine that ***all applicable water quality standards are being attained,*** thereby making the use of Category 2 unnecessary for this segment, (see Category 2 discussion below). By placing a segment into Category 1, the state is also concluding that there are adequate data and there is sufficient information to make a determination for any water quality standard, making the use of Category 3 unnecessary for this segment (see Category 3 discussion below).

1. *In order to place a segment in Category 1, must states have specific data and information regarding the status of each water quality standard?*[17]

No. States may describe in either their assessment methodology or in their water quality standards a subset or hierarchy of indicators (as described in the CALM guidance and *Elements of a State Water Monitoring and Assessment Program*) that serve to characterize whether conditions in a segment are capable of meeting all applicable water quality standards.

Because limited resources affect the design of water quality monitoring programs, the state should use a tiered approach to monitoring that includes a core set of baseline indicators selected to represent each applicable designated use, plus supplemental indicators selected according to site-specific or project-specific decision criteria. Using this tiered approach, the state should be able to make the best use of its resources to meet water quality decision needs, including assessing water quality standards attainment and designated use support, identifying needed changes to water quality standards, describing causes and sources of impairments, developing water quality-based source controls, and assessing whether water quality standards are attained. Where the assessment of the supplemental indicators applicable to every designated use in a segment documents that all uses are supported and no use is threatened, that segment should be placed into Category 1.

The monitoring strategy should define a core set of indicators (e.g., water quality parameters) for each water resource type that include physical/habitat, chemical/toxicological, and biological/ecological endpoints as appropriate, that reflect designated uses, and that can be used routinely to assess attainment with applicable water quality standards throughout the state. This core set of indicators is monitored to provide Statewide or basin/watershed level information on the fundamental attributes of the aquatic environment and to assess water quality standards attainment/impairment status. Previously, chemical and physical indicators were emphasized; however, biological monitoring and assessment should assume a prominent role in state monitoring as well.

The monitoring strategy should also describe the process the state uses for identifying supplemental indicators to monitor. Supplemental indicators are often key to identifying causes and sources of impairments and targeting appropriate source controls. These supplemental indicators may include each water quality criteria in the state's water quality standards, any pollutants controlled by the National Pollutant Discharge Elimination System (NPDES), and any other constituents or indicators of concern.

Table 5-1 presents examples of recommended core and supplemental water quality indicators. The Consolidated Assessment and Listing Methodology provides additional information on considerations for selection of supplemental indicators (see http://www.epa.gov/owow/monitoring/calm.html, Chapter 10).

[17] Part D(1) of Section V has been adapted from Section II (Part D) of *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

Table 5-1. Recommended Water Quality Indicators for General Designated Use Categories

	Aquatic Life & Wildlife	Recreation	Drinking Water	Fish/Shellfish Consumption
Recommended Core Indicators	*Condition of biological communities (EPA recommends the use of at least two assemblages) *Dissolved oxygen *Temperature *Conductivity *pH *Habitat assessment *Flow *Nutrients *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Eutrophic condition Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Pathogen indicators (E. coli, enterococci) *Nuisance plant Growth *Flow *Nutrients *Chlorophyll *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Secchi depth Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Trace metals *Pathogens *Nitrates *Salinity *Sediments/TDS *Flow *Landscape conditions (e.g., % cover of land uses)	*Pathogens *Mercury *Chlordane *DDT *PCBs *Landscape conditions (e.g., % cover of land uses)
Supplemental Indicators	*Ambient toxicity *Sediment toxicity *Other chemicals of concern in water column or sediment *Health of organisms	*Other chemicals of concern in water column or sediment *Hazardous chemicals *Aesthetics	*Volatile organic compounds (VOCs) (in reservoirs) *Hydrophyllic pesticides *Nutrients *Other chemicals of concern in water column or sediment *Algae	*Other chemicals of concern in water column or sediment

Source: *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

2. Should states use biosurvey data to list a segment as in attainment for aquatic life use support?

EPA encourages the use of biosurvey data in concert with other specified and supplemental indicators for making an aquatic life use attainment determination. Properly developed biosurvey data can provide direct evidence of aquatic life use support. States may develop, consistent with their assessment methodology and water quality standards, their own bioassessment approach to assessing aquatic life use support. CALM and the 2003 *Elements of a State Water Monitoring and Assessment Program,* recommend the use of at least two assemblages (e.g., fish and macroinvertebrates) in such assessments (See Table 5-1 taken from *Elements of a State Water Monitoring and Assessment Program*).

3. What data should states have to determine that a segment is meeting a "fish consumption" use?

Assessment determinations regarding fish/shellfish consumption uses should be based on parameter-specific data for two groups of pollutants: (1) human pathogens, or indicators thereof, and (2) chemicals with high bioaccumulation potential. Among the bioaccumulative pollutants, EPA recommends mercury, chlordane, Dichloro-diphenyl-trichloroethane (DDT), and polychlorinated biphenyls (PCBs) as core indicators.

E. Which segments should states include in Category 2?

Segments should be placed in Category 2 if the state determines that available data and/or information indicate that some, but not all of the designated uses are supported. If the state has chosen to use the multi-category approach, segments reported in Category 2 may also be reported in Categories 3, 4, or 5 depending upon the results of the analysis of all available data and information on the other uses in the segment. However, if a single-category approach is used, Category 5 takes precedence over all other categories.

F. Which segments should states include in Category 3?

Segments should be placed in Category 3 when there is insufficient available data and/or information to make a use support determination. Category 3 is consistent with and responds to one of the recommendations in the National Research Council's (NRC) report, Assessing the TMDL Approach to Water Quality Management (2001), in which the authors suggested that a category be created for those segments where there existed insufficient data and/or information to assess the use. The state should identify those segments that are higher and lower priority for followup monitoring, and may do so using predicative tools such as probability surveys or landscape models. Category 3 provides states with the flexibility to monitor these segments in a manner consistent with their overall monitoring strategy and schedule.

G. Which segments should states include in Category 4?

Segments may be placed in Category 4 if available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed. States may place segments that meet this definition in one of the following three subcategories:

- a state developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination (Category 4a);

- other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time (Category 4b);
- the non-attainment of any applicable water quality standard for the segment is the result of pollution and is not caused by a pollutant (Category 4c).

1. Which segments should states include in Category 4a?

Segments should be placed in Category 4a when a TMDL to address a specific segment/pollutant combination has been approved or established by EPA. Once the TMDL has been approved or established, the state should implement the TMDL as soon as practicable. Additionally, EPA encourages states to provide monitoring schedules for these segments to ensure that sufficient data and information are obtained to document progress of the implementation actions towards meeting the applicable water quality standards. Segments in this category may also be included in other categories, as appropriate (See Exhibit 5-1).

2. Which segments should states include in Category 4b?

EPA regulations recognize that alternative pollution control requirements may obviate the need for a TMDL. Segments are not required to be included on the section 303(d) list if technology-based effluent limitations required by the Act, more stringent effluent limitations required by state, local, or federal authority, or "[o]ther pollution control requirements (e.g., best management practices) required by local, State or Federal authority" are stringent enough to implement applicable water quality standards (see 40 CFR 130.7(b)(1)) within a reasonable period of time. This guidance acknowledges that the most effective method for achieving water quality standards for some water quality impaired segments may be through controls developed and implemented without TMDLs (referred to as a "4b alternative"). The discussion below focuses on the use of "other pollution control requirements" as a basis for the conclusion that a segment does not need a TMDL.

a. What demonstration does EPA expect a state to make to support a successful Category 4b proposal?

EPA will evaluate on a case-by-case basis a state's decisions to exclude certain segment/pollutant combinations from Category 5 (the section 303(d) list) based on the 4b alternative. States should provide in their submission the rationale which supports their conclusion that there are "other pollution control requirements" sufficiently stringent to achieve applicable water quality standards within a reasonable period of time.

Specifically, this rationale should include: (1) a statement of the problem causing the impairment, (2) a description of the proposed implementation strategy and supporting pollution controls necessary to achieve water quality standards, including the identification of point and nonpoint source loadings that when implemented assure the attainment of all applicable water quality standards, (3) an estimate or projection of the time when water quality standards will be met, (4) a reasonable schedule for implementing the necessary pollution controls, (5) a description of, and schedule for, monitoring milestones for tracking and reporting progress to EPA on the implementation of the pollution controls, and (6) a commitment to revise as necessary the implementation strategy and corresponding pollution controls if progress towards meeting water quality standards is not being shown. EPA acknowledges that the level of rigor necessary to support the state's rationale will vary depending on the complexity of the

water impairments and corresponding implementation strategies. Note that a state could pursue water quality trading under 4b, so long as it follows the principles described in the Agency's relevant guidance.

If the Agency determines that the controls are not, in fact, "requirements," or that they will not result in attainment of applicable water quality standards within a reasonable time, then EPA may disapprove the state's failure to include the segment at issue on the section 303(d) list (i.e., Category 5) and add the segment to the list. In subsequent list submissions, EPA may determine that a segment that has been placed into Category 4b must go back into Category 5, if the circumstances have changed such that the state can no longer support its original 4b demonstration.

b. What constitutes acceptable "pollution control requirements" to support Category 4b alternatives?

Because of the case-specific nature of water quality impairments and controls designed to address such impairments, EPA cannot identify classes of controls that will always be adequate to support a conclusion that a segment is not required to be included in Category 5. In evaluating whether a particular set of pollution controls are in fact "requirements" as specified in EPA's regulation, the Agency will consider a number of factors including: (1) authority (local, state, federal) under which the controls are required and will be implemented with respect to sources contributing to the water quality impairment (examples may include: self-executing state or local regulations, permits, and contracts and grant/funding agreements that require implementation of necessary controls), (2) existing commitments made by the sources to implementation of the controls (including an analysis of the amount of actual implementation that has already occurred), (3) the availability of dedicated funding for the implementation of the controls, and (4) other relevant factors as determined by EPA depending on case-specific circumstances.

Since the overriding objective of the 4b alternative is to promote implementation activities designed to achieve water quality standards in a reasonable period of time, for all of the factors listed above, EPA will evaluate each 4b alternative on a case-by-case basis, including in particular the existence of identifiable consequences for the failure to implement the proposed pollution controls. Depending on the specific situation, "other pollution control requirements" may be requirements other than those based on statutory or regulatory provisions, as long as some combination of the factors listed above are present and will lead to achievement of WQSs within a reasonable period of time. For example, established plans of government agencies that require for attainment of WQS with a reasonable period of time may qualify even when their components include incentive-based actions by private parties. States may also choose to rely on controls that have already been implemented where there is sufficient certainty that implementation will continue until WQS are achieved and will not be reversed. Because the controls are already in place and achieving progress, EPA may consider such controls to be requirements even if their implementation did not occur pursuant to binding legal authority.

c. What constitutes a reasonable period of time for purposes of 4b?

EPA expects that segments impaired by a pollutant but not listed under section 303(d) based on the implementation of existing control requirements will attain WQSs within a reasonable period of time. What constitutes a "reasonable time" will vary depending on factors such as the initial severity of the impairment, the cause of the impairment (e.g., point source discharges, in place sediment fluxes, atmospheric deposition, nonpoint source runoff), riparian condition, channel condition, the nature and behavior of the specific pollutant (e.g., conservative, reactive), the size and complexity of the segment (a

simple first-order stream, a large thermally-stratified lake, a density-stratified estuary, and tidally-influenced coastal segment), the nature of the control action, cost, public interest, etc. States should consider such factors and provide, as stated in Section IV.G.2.A. above, a time estimate by which the controls will result in WQS attainment, including an explanation of the basis for their conclusion. EPA will evaluate on a case-specific basis whether the estimated time for WQS attainment is reasonable.

d. What are some examples to illustrate how the preceding guidance would be applied?

EPA will evaluate on a case-specific basis each set of controls a state uses to support a decision to include a segment in Category 4b. The following circumstances are examples of controls which may be sufficient to support such a decision, depending on the facts of the specific case:

- A waterbody is impaired solely by point sources. Each point source has an NPDES permit containing limits sufficient to implement WQS in that waterbody by the end of the permit terms.
- A waterbody is impaired by nonpoint source sediment input. The state has adopted regulations requiring sources to implement certain best management practices (BMPs), and can enforce the regulatory requirements under state law. The state demonstrates that implementation of BMPs by these sources will result in meeting WQS in the waterbody in a reasonable time.
- A waterbody is impaired by nonpoint sources and the state has entered into contracts for source remediation. Implementation of the contract terms will result in attainment of WQS in the waterbody in a reasonable time. While the state cannot obtain specific performance as a contract remedy, it can file a claim for significant monetary damages if the terms are not met.
- A waterbody is impaired by nonpoint sources which have already implemented some or all of certain measures that will result in attainment of WQS in that waterbody in a reasonable time. The controls are unlikely to be removed or reversed (e.g., watershed restoration measures pursuant to 319 grant).
- A waterbody is impaired by nonpoint sources within federal lands where a forest management plan has been developed and is being implemented. In this case, certain elements are included in the forest management plan emphasizing BMP certification programs, require adaptive adjustments of practices, and specify monitoring options needed to demonstrate compliance with state water quality standards.

3. Which segments should states include in Category 4c?

Segments should be placed in Category 4c when the states demonstrates that the failure to meet an applicable water quality standard is not caused by a pollutant, but instead is caused by other types of pollution. Segments placed in Category 4c do not require the development of a TMDL. Pollution, as defined by the CWA is "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water" (section 502(19)). In some cases, the pollution is caused by the presence of a pollutant and a TMDL is required. In other cases, pollution does not result from a pollutant and a TMDL is not required. States should schedule these segments for monitoring to confirm that there continues to be no pollutant associated with the failure to meet the water quality standard and to support water quality management actions necessary to address the cause(s) of the impairment. Examples of circumstances where an impaired segment may be placed in Category 4c include segments impaired solely due to lack of adequate flow or to stream channelization.

EPA encourages the state to collect or assemble additional data and/or information to verify the initial placement of the segment, and to re-categorize the segment based on the assessment of the additional data and/or information where appropriate.

H. Which segments should states include in Category 5?

This category constitutes the section 303(d) list that EPA will review and approve or disapprove pursuant to 40 CFR 130.7. States must include on their section 303(d) list those waters required to be listed by the Clean Water Act and EPA's implementing regulations. Segments must be placed in Category 5 when, based on existing and readily available data and/or information, technology-based effluent limitations required by the Act, more stringent effluent limitations, and other pollution control requirements are not sufficient to implement an applicable water quality standard and a TMDL is needed. 40 CFR 130.7(b)(1).

A segment that is included in Category 5 may also be included in other categories where appropriate. For example, the segment may be attaining some applicable standards, in which case it may also be included in Category 2. As the state develops and EPA approves TMDLs for the pollutants identified as causing a Category 5 segment to exceed an applicable standard, the segment can be placed in Category 4a, but must also remain in Category 5 if it is exceeding any applicable standard and a TMDL needs to be developed for the pollutant causing that exceedance. However, note that Category 5 takes precedence if the state chooses to list a segment in only one category.

1. Is Category 5 of the Integrated Report for 2006 a new section 303(d) list, and must the state account for all segments previously listed as needing a TMDL in the 2004 list?

The section 303(d) list (segments in Category 5) once approved (or, if necessary, established by EPA following disapproval of a state's list) is a new list that replaces the previous list. The time frame for establishing TMDLs should be 8 to 13 years from the date of the original listing. For example, a segment originally included on the 1998 section 303(d) list, and still identified on the 2006 submission as requiring a TMDL, should be addressed by 2011.

Segments included on previous 303(d) lists or previously placed in Category 5 should be accounted for in subsequent submissions. However, the fact that a segment was previously included in Category 5 (or on the 303(d) list) does not necessarily mean that it must remain in Category 5 until a TMDL is established. In some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the applicable standard is met). Alternatively, the state may determine that other required control measures are sufficient to implement the applicable standard, and therefore may move the segment to Category 4b. The state may also determine based on the assessment of new data and information that pollutants do not cause or contribute to the impairment of the segment and therefore may move the segment to Category 4c. The state may also demonstrate that the original Category 5 listing was erroneous (i.e., not consistent with its assessment methodology or WQSs).

EPA may request, as discussed below, that the state demonstrate good cause for not including individual segments (including previously listed segments) in Category 5 (40 CFR 130.7(b)(6)(iv)). EPA may request this demonstration if the state does not develop an adequate record supporting the basis for

the decision or does not specifically explain its decision to move segments previously listed in Category 5 to other categories.

2. *What constitutes good cause for not including in the current submission segments that were previously included in Category 5 (the section 303(d) List)?*

To provide interested stakeholders with a more complete understanding of the changes that may have occurred from one IR cycle (or 303(d) submission) to the next, and to help expedite EPA's review and approval/disapproval action for those segments in Category 5, EPA recommends that states submit with their IR (or their 303(d) list) a table documenting changes in segment placement or categorization from the 2004 IR, and a brief summary of the basis for those changes. Table 5-2 provides an example of how states might do this.

Table 5-2. Documentation of "Good Cause" to Move Segments from Category 5.

Segment previously in Category 5	New placement in 2006	Explanation for change
Segment 214	Category 4a	TMDL completed and approved by EPA for Chromium.
Segment 266	Category 4c	The analysis of new data concluded that the aquatic life use impairment is solely due to low river flow.
Segment 321	Category 4b	The state has proposed an alternative approach to attain WQS by implementing required controls via NPDES permits.
Segment 349	Category 1	The assessment of new data documents that applicable WQS are now being attained.
Segment 350	Category 3	Previous listing in Category 5 was inconsistent with assessment methodology. Available data insufficient to determine attainment status.

In addition, EPA may request that states provide "good cause" for not including on the 2006 section 303(d) list (Category 5) submission segments that were previously included on the list. If EPA makes such a request, the state must explain its basis for not including the segment on the list. Consistent with 40 CFR 130.7(b), "good cause" for not including segments in Category 5 may be based on the following determinations:

- The assessment and interpretation of more recent or more accurate data in the record demonstrate that the applicable WQS(s) is being met.
- The results of more sophisticated water quality modeling demonstrate that the applicable WQS(s) is being met.
- Flaws in the original analysis of data and information led to the segment being incorrectly listed.
- A demonstration pursuant to 40 CFR 130.7(b)(1)(ii) that there are effluent limitations required by state or local authorities that are more stringent than technology-based effluent limitations, required by the CWA, and that these more stringent effluent limitations will result in the attainment of WQSs for the pollutant causing the impairment.

- A demonstration pursuant to 40 CFR 130.7(b)(1)(iii) that there are other pollution control requirements required by state, local, or federal authority that will result in attainment of WQSs for a specific pollutant(s) within a reasonable time (i.e., 4b).
- Documentation that the state included on a previous section 303(d) list an impaired segment that was not required to be listed by EPA regulations, e.g., segments where there is no pollutant associated with the impairment.
- Approval or establishment by EPA of a TMDL since the last section 303(d) list.
- A state inappropriately listed a segment that is within Indian country, as defined in 18 U.S.C. section 1151.
- Other relevant information that supports the decision not to include the segment on the section 303(d) list.

EPA has the authority to disapprove a submission if EPA identifies existing and readily available information that shows a segment is required by the CWA and EPA regulations be included in Category 5 (the section 303(d) list). In that situation, EPA will partially disapprove the state's list and identify additional segments for inclusion in Category 5.

3. Can previously listed segments (without new data or information) be delisted solely because they have not yet been assessed with a new methodology?

No. EPA does not believe it would be appropriate to remove segments previously listed in Category 5 (without new data or information) ***solely*** because they have not yet been assessed with a new methodology. However, there are some situations where a segment may be removed from Category 5 without relying on data and information collected after the date of the previous list. For example, if the state evaluates the pre-existing data and information using a new or revised methodology that accurately reflect the applicable WQS, and the results of that evaluation provide a "good cause" basis for not including the segment on the 2006 section 303(d) list, the segment would no longer need to be included in Category 5. However, the delisting should only occur if it is determined that the basis for the decision is consistent with the state's applicable WQSs and is reasonable.

4. Must Category 5 include threatened segments?

Yes, states must include threatened segments in Category 5 where appropriate (40 CFR 130.7(b)). The definition of "water quality limited segment" in EPA's regulations implementing CWA section 303(d) includes waters not expected to meet applicable water quality standards, which EPA refers to as "threatened" waters. 40 CFR 130.2(j). EPA recommends that states consider as threatened those segments that are currently attaining WQS, but are projected as the result of applying a valid statistical methodology to exceed WQS by the next listing cycle (every two years). For example, segments should be listed if the analysis of existing data and information demonstrates a declining trend in the segment's WQS, and the projected trend will result in a failure to meet that standard by the date of the next list (i.e., 2008 for purposes of the 2006 assessment cycle). The state assessment and listing methodology should describe how the state identifies threatened segments.

5. *Must Category 5 include an impaired segment if the specific pollutant causing the impairment has not been identified?*

Yes, if a designated use is not supported and the segment is impaired or threatened, the fact that the specific pollutant is not known does not provide a basis for excluding the segment from Category 5. These segments must be listed unless the state can demonstrate that no pollutant(s) causes or contribute to the impairment. Prior to establishing a TMDL for such segments the pollutant causing the impairment must be identified.

If the assessment of the new data and information demonstrates that the use impairment is not associated with a pollutant and is attributable only to other types of pollution (e.g., flow or habitat alteration) the segment may be placed into Category 4c. EPA has developed guidance to assist states in identifying the causes of a biological impairment. This document, "Stressor Identification Guidance," was released in December 2000 (EPA 822-B-00-025). This document is also available on the Internet at: http://www.epa.gov/ost/waterscience/biocriteria/stressors/stressorid.pdf.

6. *When should Category 5 include segments covered by fish and shellfish consumption advisories?*

EPA generally believes that fish and shellfish consumption advisories and certain shellfish growing area classifications based on segment specific information demonstrate impairment of CWA section 101(a) "fishable" uses. This applies to fish and shellfish consumption advisories and certain shellfish area classifications for all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. Furthermore, advisories based on the results from probability surveys or other predictive tools having a high degree of confidence (i.e., 95%) may also form the basis of listing segments as impaired. States, on their own prerogative, may choose to place segments into Category 5 (or on the section 303(d) list) using probability surveys when fish and shellfish consumption advisories and certain shellfish area classifications constitute potential risks to human health.

For purposes of determining whether a segment is impaired and should be included on section 303(d) lists states are required to consider all existing and readily available data and information (see 40 CFR 130.7). This should include physical, chemical and biological data, including data on pathogens (such as bacteria and phytotoxins) as well as fish and shellfish tissue concentration data, where such data are existing and readily available. States collect several types of monitoring data to help determine if segments are attaining or maintaining applicable water quality standards. If a state does not consider particular existing and readily available data and information in deciding which segments are impaired and must be placed on the section 303(d) list, they must provide an explanation to EPA of why they did not use such data and information.

While numeric human health criteria for ambient water column concentrations of pollutants are a basis for determining impairment, the attainment of such criteria does not always mean that designated uses are being protected. Segment-specific factors sometimes cause pollutants, including pathogens, to accumulate in fish and shellfish tissue at higher levels than predicted by the methodology used to derive the numeric human health criteria. Examples of such factors include water temperature, nutrient levels, food web structure, the concentration of dissolved organic carbon in the ambient water, and accumulations in the sediment. Hence, a segment can be meeting numeric ambient water quality criteria, but not attaining the designated uses because fish or shellfish tissue concentrations exceed levels that are protective of human health. In instances where tissue concentrations indicate an impairment of the

designated use, even though ambient water column concentrations of pollutants do not indicate an exceedance, EPA recommends states translate the applicable narrative criteria on a site- specific basis or adopt site specific numeric criteria to account for higher than expected exposures from contaminated fish or shellfish tissue and protect designated uses.

Applicable shellfish growing area classifications should be used as part of determinations of attainment of water quality standards and listing of impaired segments. Shellfish growing area classifications are developed by the National Shellfish Sanitation Program (NSSP) using water column and tissue data (where available), and information from sanitary surveys of the contributing watershed, to protect public health. The states review these NSSP classifications every three years. There are certain NSSP classifications and data that do not necessarily indicate WQS violation. These include: "Prohibited" classifications set as a precautionary measure due to the proximity of wastewater treatment discharges, or absence of a required sanitary survey; shellfish tissue pathogen data (which can fluctuate based on short-term conditions not representative of general water quality); or short-term actions to place growing areas in the closed status.

When deciding whether to identify a segment as impaired, states need to determine whether there are impairments of designated uses and narrative criteria, as well as the numeric criteria. Although the CWA does not explicitly direct the use of fish and shellfish consumption advisories or NSSP classifications to determine attainment of water quality standards, states are required to consider all existing and readily available data and information to identify impaired segments on their section 303(d) lists. For purposes of determining whether a segment is impaired and should be included on a section 303(d) list, EPA considers a fish or shellfish consumption advisory, a NSSP classification, and the supporting data, to be existing and readily available data and information that demonstrates non-attainment of a section 101(a) "fishable" use when:

- the advisory is based on fish and shellfish tissue data,
- a lower than "Approved" NSSP classification is based on water column and shellfish tissue data (and this is not a precautionary "Prohibited" classification or the state water quality standard does not identify lower than "Approved" as attainment of the standard),
- the data are collected from the specific segment in question, and
- the risk assessment parameters (e.g., toxicity, risk level, exposure duration and consumption rate) of the advisory or classification are cumulatively equal to or less protective than those in the state's water quality standards.

This applies to all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. However, for fish/shellfish advisories for "dioxin and dioxin-like compounds", due to unique risk characterization issues, listing decisions should be made on a case-by-case basis.

EPA acknowledges that in some cases, fish and shellfish consumption advisories may not demonstrate that a section 101(a) "fishable" use is not being attained in an individual segment. For example, a state may have issued a statewide or regional warning regarding fish tissue contaminated with a bioaccumulative pollutant, based on data from a subset of segments. A state may use a higher fish consumption value in determining the need for an advisory compared to the value used in establishing water quality criteria for the protection of human health. As noted above, a state may also classify shellfish growing areas "Prohibited" as a precautionary measure due to the proximity of wastewater treatment discharges or where a required sanitary survey has not been conducted. In such instances, these

segments need not be listed as impaired under section 303(d) unless there are segment specific data (and the data were not considered during the development or review of a non-precautionary NSSP classification), showing non-attainment of section 101(a) uses.

Some fish and shellfish consumption advisories and NSSP classifications are based on Food and Drug Administration (FDA) action levels as opposed to EPA's risk-based methodology for the protection of human health. FDA action levels are established to protect consumers of interstate shipped, commercially marketed fish and shellfish rather than fish and shellfish caught and consumed within the state. FDA action levels also include non-risk based factors (e.g., economic impacts) in their derivation, while water quality criteria must protect the designated uses without regard to economic impacts.

Where tissue contamination that triggers an advisory based on FDA action levels indicates an exceedance of state human health criteria, the advisory is an indication that section 101(a) "fishable" uses are not attained, and therefore, these segments should be placed into Category 5 or included on the 303(d) list.

7. How should Category 5 handle segments for which WQS are being revised or where temporary variances are in place?

The attainment decision must be based on the applicable WQS. In the case of a standard that is being revised, that standard is not applicable until it has been approved by EPA. 40 CFR 131.21. Therefore states must include in Category 5 segments that do not meet an applicable WQS at the time of listing, even if the new standard is in the process of being revised to be less stringent, until such time as EPA approves the revised standard. However, these segments would not have to be considered a high priority for TMDL scheduling. If EPA approves a revised standard in the future, the segment may be removed from the section 303(d) list at that time provided the segment does not meet the listing requirements with respect to the new standard. With respect to variances, which are temporary and usually apply to a particular discharger, but may also apply to a segment, the applicable WQS typically is the underlying standard, and therefore the segment should be placed in Category 5 if it does not support one or more of the designated uses in the underlying standard.

8. Must Category 5 include a segment where the criterion has been exceeded, but the exceedance is the result of background or natural conditions?

In some cases, a segment may exhibit water quality characteristics or chemical concentrations approaching or exceeding those levels established in the state's water quality standards due solely to non-anthropogenic causes. If the state's water quality standards include a specific exclusion for exceedances caused by "natural conditions", these segments would not be considered impaired (i.e., they could be excluded from Categories 4 and 5). These segments should instead be placed into Categories 1 through 3 as appropriate. For such segments, these background or natural conditions can be defined by assessing the results of water quality monitoring efforts, by the use of predictive models, or a characterization based on data from a watershed with similar hydrologic, land use, and pollutant loading characteristics.

9. What additional information is needed for segments in Category 5?

Identification of Pollutants

Section 130.7(b)(4) requires states to identify, for each segment included on the section 303(d) list (Category 5), the "pollutants causing or expected to cause violations of the applicable water quality standards." For the 2006 listing cycle, segments identified as impaired or threatened based on biological criteria should be included in Category 5 unless the state demonstrates that a pollutant is not causing the impairment, or inclusion in Categories 4a or 4b is warranted. States must identify all pollutants that are known to be causing the impairment of a segment.

Prioritization and TMDL Schedule

Section 303(d)(1) requires states to "establish a priority ranking" for the segments it identifies on the list, taking into account the severity of the pollution and the uses to be made of such segments, and to establish TMDLs "in accordance with the priority ranking." Consistent with section 130.7(b)(4) each state shall also submit biennially a priority ranking including waters targeted for TMDL development in the next two years. Each listed pollutant-segment combination (i.e., those in Category 5) must receive a clear priority ranking, which EPA recommends be either in the form of a scheduled TMDL completion date or a ranking such as high, medium, or low. States have considerable flexibility in deciding how best to apply these factors in prioritizing their list of waters needing TMDLs. For example, a waterbody with a severe water quality problem may be given a high priority for TMDL development in light of the severity of the concern. Conversely, a severe water quality problem may require complex analysis before developing a TMDL, and the state may therefore choose to give it a lower priority to allow time to collect necessary information and complete the analysis. Thus, the most severe water quality problems or the most toxic pollutants need not always be given the highest priority for TMDL development, if circumstances warrant a lower priority. EPA will review the priority ranking but will not take action to approve or disapprove it.

Federal regulations provide that "schedules for submissions of TMDLs shall be determined by the Regional Administrator and the State" (40 CFR 130.7(d)(1)). Factors such as the state's use of a rotating basin approach or commitments specified in court orders or consent decrees may be considered when states develop priorities and schedules. EPA recommends that states develop a schedule for establishing TMDLs as expeditiously as practicable and that the schedule (1) identifies which TMDLs will be established in each year of the upcoming integrated reporting cycle and (2) estimates the approximate number of TMDLs to be established for each year thereafter. EPA encourages the states to ensure that the schedule provides that all TMDLs for every pollutant-segment combination listed on previous section 303(d) lists be established in a time frame that is no longer than 8 to 13 years from the time the pollutant-segment combination is first identified in Category 5. EPA will not take any action on the schedule. The schedule is intended to help the public and EPA to understand the state's priorities and assist in work planning.

In developing their schedules, states will need to decide which TMDLs are higher priority than others. States need not specifically identify each TMDL as high, medium or low priority. Instead, the schedule itself can reflect the state's priority ranking. The CWA does not prescribe a particular method of expressing a priority ranking, and EPA believes a TMDL schedule is a reasonable, efficient way to demonstrate priority ranking. In some circumstances, the order in which TMDLs are established might be

subject to some modifications as the schedule is implemented, based on logistical efficiencies or data availability.

Ohio Environmental Protection Agency

Ohio 2018 Integrated Water Quality Monitoring and Assessment Report

Lake Erie

Division of Surface Water
Final Report

June 2018

Table of Contents

Section A: An Overview of Water Quality in Ohio A-1

Section B: Ohio's Water Resources
B1: Facts and Figures B-1
B2: 2020 Water Quality Goals B-8

Section C: Managing Water Quality
C1: Program Summary – Surface Water C-1
C2: Program Summary – Environmental and Financial Assistance C-19
C3: Program Summary – Drinking and Ground Waters C-20
C4: Program Summary – Environmental Services C-23
C5: Cooperation among State Agencies and Departments C-23
C6: Funding Sources for Pollution Controls C-24
C7: New 303(d) Vision Implementation in Ohio C-28

Section D: Framework for Reporting and Evaluation
D1: Assessment Units D-2
D2: Evaluation of the Ohio River D-6
D3: Evaluation of Lake Erie D-6
D4: Ohio's Water Quality Standards and Use Designations D-7
D5: Sources of Existing and Readily Available Data D-8
D6: Public Involvement in Compiling Ohio's Section 303(d) List of Impaired Waters D-12
D6.1: Solicitation for External Water Quality Data, 2018 Integrated Report Project (May 23, 2017) D-12
D6.1.1: Web Page with Instructions for Submitting Level 3 Credible Data D-13
D6.2: Web Page Announcing 2018 Integrated Report Preparation D-17
D6.3: Notice of Availability and Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-18
D6.3.1: Response to Comments Received regarding the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-19
D6.3.2: Comments Received during the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-36

Section E: Evaluating Beneficial Use: Human Health (Fish Contaminants)
E1: Background E-1
E2: Rationale and Evaluation Method E-1
E3: Results E-6
E4: Supplemental Information E-25
E4.1: Calculation of Fish Concentrations from Water Quality Standards Inputs E-25
E4.2: What's the difference between the Fish Consumption Advisory decision and the impairment decision? E-29

Section F: Evaluating Beneficial Use: Recreation
F1: Background (Bacteria) F-1
F2: Evaluation Method (Bacteria) F-2
F3: Results (Bacteria) F-8
F3.1: Lake Erie Public Beaches F-8
F3.2: Rivers and Streams F-17
F3.3: Inland Lakes F-22
F4: Recreation Assessment for Algae in Western Lake Erie F-27
F4.1: Background F-27
F4.2: Rationale and Evaluation Method F-27

F4.3: Results F-36

Section G: Evaluating Beneficial Use: Aquatic Life
G1: Background and Rationale G-1
G1.1: Background G-1
G1.2: General Determination of Attainment Status G-2
G2: Evaluation Method G-3
G2.1: Rivers and Streams: Large River Assessment Units (LRAUs) G-3
G2.2: Rivers and Streams: Watershed Assessment Units (WAUs) G-3
G2.3: Lake Erie Shoreline and Islands: Lake Erie Assessment Units (LEAUs) G-6
G3: Results G-7
G3.1: LRAUs G-8
G3.2: WAUs G-10
G3.3: LEAUs G-14

Section H: Evaluating Beneficial Use: Public Drinking Water Supply
H1: Background H-1
H2: Evaluation Method H-1
H2.1 Beneficial Use Designation H-1
H2.2 Water Quality Standards H-3
H2.3 Attainment Determination H-4
H2.4 Data Sources and Requirements H-5
H2.5 Ohio River Assessments H-6
H3: Results H-6
H4: Supplemental Information H-8

Section I: Considerations for Future Lists
I1: Wetlands I-1
I1.1 Documented High-Quality Wetlands I-2
I1.2 Significant Wetland Areas I-2
I1.3 Next Steps I-3
I2: Mercury Reduction at Ohio EPA I-11
I2.1: Ohio Law I-11
I2.2: Ohio Projects I-11
I2.3: Ohio Resources I-12
I2.4: Federal Rules I-12
I3: Inland Lakes and Reservoirs I-12
I3.1: Background of Ohio's Inland Lake Water Quality Monitoring Program I-13
I3.2: Status of Inland Lakes Program I-13
I3.2.1: Lake sampling – Lake Habitat Aquatic Life Use Assessment I-14
I3.2.2: Water Quality Standards for the Protection of Aquatic Life in Lakes I-14
I3.3: Preview of Future Listings I-15
I3.3.1: Methodology Preview: Lake Habitat Use Assessment I-16
I3.3.2: Results I-16
I4: Future Lake Erie Monitoring and Assessment I-19

Section J: Addressing Waters Not Meeting Water Quality Goals
J1: Ohio's 303(d) Listing Framework J-1
J2: Prioritizing the Impaired Waters: the 303(d) List J-3
J3: Addressing Nutrients in Lake Erie J-10
J4: Summary of Results J-16
J5: Changes for the 2018 303(d) List J-20
J6: Schedule for TMDL Work J-26
J6.1: Ohio TMDL Status J-26

J6.2: Long-Term Schedules for Monitoring and TMDLs J-26
J6.3: Short-Term Schedule for TMDL Development J-26

Section K: Maps
Ohio 8-Digit Hydrologic Units
Section 303(d) Human Health (Fish Tissue) Use Categories Watershed Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Large River Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Lake Erie Assessment Units
Section 303(d) Recreation Use Categories Watershed Assessment Units
Recreation Use Index Scores Watershed Assessment Units
Section 303(d) Recreation Use Categories Large River Assessment Units
Recreation Use Index Scores Large River Assessment Units
Section 303(d) Recreation Use Categories Lake Erie Assessment Units
Section 303(d) Aquatic Life Use Categories Watershed Assessment Units
Aquatic Life Use Index Scores Watershed Assessment Units
Section 303(d) Aquatic Life Use Categories Large River Assessment Units
Aquatic Life Use Index Scores Large River Assessment Units
Section 303(d) Aquatic Life Use Categories Lake Erie Assessment Units
Aquatic Life Use Index Scores Lake Erie Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Watershed Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Large River Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Lake Erie Assessment Units
Ohio Total Maximum Daily Load Program Progress

Section L: Summary Tables of Waterbody Conditions; List of Prioritized Impaired Waters; and Category 4B Demonstrations
L1: Status of Watershed Assessment Units L-2
L2: Status of Large River Assessment Units L-42
L3: Status of Lake Erie Assessment Units L-43
L4: Section 303(d) List of Prioritized Impaired Waters (Category 5) L-44
L5: Category 4B Demonstrations Contained in Approved Ohio TMDLs to Date L-85
L5.1: Projects included in the 2012 Integrated Report L-85
L5.2: Projects included in the 2014 Integrated Report L-97

Section M: An Overview of Ground Water Quality in Ohio
M1: Introduction M-1
M2: Ohio's Ground Water Programs M-2
M3: Ohio's Major Aquifers M-4
M4: Site-Specific Ground Water Contamination Summary M-8
M5: Major Sources of Ground Water Contamination M-10
M6: Summary of Ground Water Quality by Aquifer M-15
M7: Conclusions and Future Directions for Ground Water Protection M-40

Section N: References

List of Tables and Figures

Tables

B-1. Ohio's water resource statistics B-1
B-2. List of Ohio's principal streams and large rivers B-4
B-3. 2020 goals for four beneficial uses, Lake Erie and the Ohio River B-9
C-1. OWDA loans administered during calendar years 2015-2016 ..... C-26
D-1. Ohio water quality standards in the 2018 IR D-8
D-2. Data types used in the 2018 IR D-10
D-3. Descriptions of data used in the 2018 IR from sources other than Ohio EPA D-11
E-1. Comparison between fish concentration values and FCA program values E-3
E-2. Example data for calculating a weighted average fish tissue value E-4
E-3. A summary of changes in attainment from 2016 to 2018 IR E-6
E-4. Waters not supporting the human health use because levels of PCBs or mercury in fish tissue exceed the threshold level upon which the WQS criterion is based. These waters are category 5. ..... E-7
E-5. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based. These waters are category 1 ..... E-9
E-6. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based and which were categorized as impaired in the 2016 IR. These waters have become category 1 with the current assessment E-11
E-7. Waters with contaminants other than PCBs and mercury that affect fish tissue (included on the 303(d) list). These waters are category 5 ..... E-11
E-8. Waters for which the existing unimpaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 1h E-11
E-9. Waters for which the existing impaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 5h E-14
E-10. Waters with current fish tissue data where inadequate samples exist to determine impairment status. These waters are category 3i E-20
E-11. Large rivers and their impairment status E-22
E-12. Inland lakes and their impairment status E-23
E-13. Lake Erie assessment units and their impairment status E-25
F-1. Summary of the RU assessment methods F-2
F-2. Determining assessment status of Lake Erie shoreline AUs F-5
F-3. Determining assessment status of WAUs and LRAUs F-7
F-4. Recreation index score matrix F-8
F-5. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the western basin (Sandusky Bay and west) F-11
F-6. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the central basin (east of cedar point) F-12
F-7. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the central basin shoreline AU F-14
F-8. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the western basin shoreline AU F-14
F-9. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the islands shoreline AU. F-15

F-10. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the Sandusky basin shoreline AU. F-15
F-11. Aggregated exceedance frequencies at 65 Lake Erie public beaches from 2013-2017 (pooled by Lake Erie shoreline AU to report use support). F-17
F-12. Annual Ohio EPA *E. coli* sampling effort and RU assessment (using Ohio EPA data) in Ohio streams, rivers and inland lakes, 2011-2017 recreation seasons F-18
F-13. Overall differences in the assessment of RU attainment, 2010-2018 ..... F-18
F-14. Summary assessment status of the RU in Ohio's WAUs by assessment cycle F-20
F-15. Summary assessment status of the RU in Ohio's LRAUs F-21
F-16. Summary assessment status of the RU for inland lakes, 2013-2017 ..... F-22
F-17. Swimming advisory posting at Ohio's inland lake public beaches (2013-2017). F-25
F-18. Proposed Ohio Lake Erie AUs F-28
F-19. Data collected in Ohio waters of Lake Erie that is credible data level 3 or could likely be approved as level 3 with review and coordination F-31
F-20. The number of 10-day time frames exceeding the 30 percent coverage threshold (with 20,000 cells/mL) or greater) in the western basin open water unit for each year beginning in 2012 ..... F-36
G-1. Summary of aquatic life use assessment for Ohio's WAUs, LRAUs and LEAUs: 2002-2018 Integrated Report cycles G-9
G-2. Breakdown by size category of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-3. Breakdown by designated or recommended aquatic life use of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-4. Prevalence of the top five causes of aquatic life use impairment in WAUs and LRAUs based on biological and water quality survey data collected from 2003-2016 ..... G-12
H-1. PDWS attainment determination. H-4
H-2. Waters designated as impaired for (not supporting) the PDWS beneficial use. H-12
H-3. Summary of PDWS assessment results for the nitrate, pesticide and algae indicators H-18
I-1. List of high-quality wetland areas I-3
I-2. List of significant wetland areas I-8
I-3. Proposed lake habitat use criteria I-15
I-4. Summary of the lake habitat use assessment for lakes sampled in 2015-2016 using the draft assessment methodology described in this section I-17
J-1. Category definitions for the 2018 Integrated Report and 303(d) list J-2
J-2. Potential listing opportunities in Ohio's listing framework. J-3
J-3. Priority points for impaired AUs. J-5
J-4. Summary of results for each beneficial use J-16
J-5. Number of AUs removed from or added to the 303(d) list J-20
J-6. Summary of reasons for changes to the 2018 303(d) list J-20
J-7. Removals from the 303(d) list because of a flaw in the original listing J-21
J-8. Removals from the 303(d) list because of new data J-21
J-9. Addition to the 303(d) list because of flaw in original listing J-23
J-10. Additions to the 303(d) list because of new data J-23
J-11. Ohio TMDLs approved by U.S. EPA at the 11-digit hydrologic unit scale J-27
J-12. Ohio TMDLs approved by U.S. EPA at the 12-digit hydrologic unit scale J-31
J-13. Short-term schedule for TMDL development J-33
M-1. Summary of Ohio's Ground water protection programs. M-3
M-2. Ground water contamination summary M-8
M-3. Major sources of potential ground water contamination M-14

M-4. Counts of public water systems where 2007-2017 decadal mean values of compliance data occur in the Watch List and Impaired Category M-17
M-5. Counts of wells where 2007-2017 decadal mean values of AGWQMP data occur in the Watch List and Impaired Category (maximum values used for nitrate). M-27

Figures

B-1. Map of Ohio's principal streams and large rivers. B-2
B-2. Ohio Scenic River System B-3
C-1. Ohio Lake Erie AOCs and major Lake Erie tributaries C-7
D-1. Ohio's large rivers (rivers with drainages greater than 500 mi^2) and their watersheds D-3
D-2. Ohio's 12-digit WAUs and 8-digit hydrologic units D-4
D-3. Ohio's Lake Erie assessment units – western basin, islands, Sandusky basin and central basin shorelines and open water areas D-5
E-1. Illustration of the relationship among the WQS values, the values that trigger issuance of fish consumption advisories (FCAs) and the resulting decision regarding waterbody impairment associated with an FCA. E-2
E-2. Flowchart for the categorization of fish tissue data for the IR E-6
F-1. Lake Erie public beaches sampled under Ohio's bathing beach monitoring program. F-3
F-2. Erie and Sandusky County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-3. Cuyahoga and Loraine County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-4. Example of bacteria sampling locations, upper Walhonding River study area (2010) F-6
F-5. Frequency of advisory postings at Ohio's Lake Erie public beaches F-16
F-6. Histogram of RU index scores for Ohio's WAUs F-19
F-7. New Ohio Lake Erie AUs F-29
F-8. Monitoring locations in the western basin of Lake Erie in 2017 ..... F-30
F-9. Bloom severity observed and projected (with 40 percent TP reduction) since 2002 ..... F-35
G-1. Flowchart for determining if WAU score can be derived based on available sampling locations. G-5
G-2. Percent attainment status and goal progress ("100 percent by 2020") for monitored miles of Ohio's LRAUs (23 rivers/38 AUs/1247.54 miles total) G-10
G-3. Average full attainment watershed score for Ohio's HUC11 WAUs (IR cycles 2002-2010) and HUC12 WAUs (IR cycles 2010-2018). G-13
G-4. Breakdown by designated or recommended aquatic life use of sites in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 (n= 3,911 sites) G-13
G-5. Status and trend of aquatic life use "80 percent by 2020" goal for wading and principal stream and river sites in Ohio based on the last five IR cycles. G-14
G-6. Average IBI scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-16
G-7. Average MIwb scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-17
H-1. Ohio WAUs, LRAUs and LEAUs that contain at least one active surface water drinking water intake. H-2
H-2. AUs with nitrate indicator results H-9
H-3. AUs with pesticide indicator results H-10
H-4. AUs with algal toxin indicator results H-11
I-1. Supplemental weekly sampling locations for chlorophyll and microcystin; sampled by University of Toledo and the Ohio State University/Stone Laboratory (boxed sites) researchers in 2017 ..... I-20
J-1. Listing by smaller AUs and individual beneficial uses J-3
J-2. Priority points assigned based on use impairment or other factors (extra points). J-4

J-3. Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey. J-7
J-4. Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey. J-9
J-5. Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009. J-10
J-6. Key steps in the state TMDL and binational Annex 4 processes. J-13
J-7. Summary of 2018 IR results for watershed AUs by beneficial use. J-17
J-8. Summary of 2018 IR results for large river AUs by beneficial use. J-18
J-9. Summary of 2018 results by AU type. J-19
J-10. Summary of reasons for changes to the 2016 303(d) list. J-21
M-1. Aquifer types in Ohio modified from ODNR glacial and bedrock aquifer maps. M-4
M-2. Iron distribution in AGWQMP wells, overlain on major aquifers. M-5
M-3. Manganese distribution in AGWQMP wells, overlain on major aquifers. M-6
M-4. Distribution of public water systems on impaired list for arsenic for both treated and raw waters. M-34
M-5. Distribution of public water systems in impaired category and on the watch list for sulfate in raw water. M-35
M-6. Distribution of public water systems on fluoride MCL watch list for treated and raw water. M-36
M-7. Distribution of public water systems with maximum nitrate in treated and raw water greater than the MCL. M-37

List of Acronyms and Abbreviations

AmphIBI	amphibian index of biotic integrity
AMP	Atrazine monitoring program
AOC	Area of Concern (as identified under the Great Lakes Water Quality Agreement)
ARRA	American Recovery and Reinvestment Act of 2009
AU	assessment unit
BAV	beach action value
BEACH	Beaches Environmental Assessment and Coastal Health (Act)
BMP	best management practice
BNR	biological nutrient removal
BUI	Beneficial Use Impairment (as described in the Great Lakes Water Quality Agreement)
CABB	Center for Applied Bioassessment and Biocriteria
CAFO	Concentrated Animal Feeding Operations
CDBG	Community Development Block Grant
CDC	Center for Disease Control
cfu	colony forming unit
Corps	U.S. Army Corps of Engineers
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSO	combined sewer overflow
CSP	Conservation Stewardship Program
CWH	coldwater habitat
CWA	Clean Water Act
DDAGW	Division of Drinking and Ground Waters
DDT	dichlorodiphenyltrichloroethane
DEFA	Division of Environmental and Financial Assistance
DES	Division of Environmental Services
DLG	digital line graph
DRG	digital raster graphic
DSW	Division of Surface Water
EAG	External Advisory Group
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
EWH	exceptional warmwater habitat
FCA	fish consumption advisory
FFY	federal fiscal year
FSA	Farm Service Agency
FWPCA	Federal Water Pollution Control Act
GIS	Geographic Information System
GLLA	Great Lakes Legacy Act
GLRC	Great Lakes Regional Collaboration
GLRI	Great Lakes Restoration Initiative
GLSM	Grand Lake St. Marys
GLWQA	Great Lakes Water Quality Agreement
GRP	Grassland Reserve Program
GRTS	Generalized Random Tessellation Stratified (survey design)
HAB	harmful algal bloom
HSD	honest significant difference
HUC	hydrologic unit code

IBI	index of biotic integrity
ICI	invertebrate community index
IDP	indirect discharge permit
IR	Integrated Report
kg	kilogram
L	liter
LA	load allocation
LAMP	lakewide action and management plan
LCI	Lake Condition Index
LDI	Landscape Development Intensity
LEAU	Lake Erie assessment unit
LEC	(Ohio) Lake Erie Commission
LENT	Lake Erie nutrient targets
LEPF	(Ohio) Lake Erie Protection Fund
LH	lake habitat
LHD	local health district
LRAU	large river assessment unit
LRW	limited resource water
LTCP	long-term control plan
MBI	Midwest Biodiversity Institute
MF	membrane filter
mg	milligram
mi^2	square miles
mL	milliliter
MIwb	modified index of well-being
MOR	monthly operating data
MPN	most probable number
MRBI	Mississippi River Basin Initiative
MS4	municipal separate storm sewer systems
MWH	modified warmwater habitat
NARS	National Aquatic Resource Survey
NCCA	National Coastal Condition Assessment
NCWQR	National Center for Water Quality Research
NEORSD	Northeast Ohio Regional Sewer District
ng	nanogram
NHD	National Hydrography Dataset
NLCD	National Land Cover Dataset
NOAA	National Oceanic and Atmospheric Administration
NOI	notice of intent
NPDES	National Pollutant Discharge Elimination System
NPS	nonpoint source
NRCS	Natural Resources Conservation Service
NSMP	Nonpoint Source Management Plan
NSSP	National Shellfish Sanitation Program
NWI	National Wetland Inventory
NWQI	National Water Quality Initiative
OAC	Ohio Administrative Code
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
OMZA	outside mixing zone average

ORC	Ohio Revised Code
ORSANCO	Ohio River Valley Water Sanitation Commission
OSIP	Ohio Statewide Imagery Program
OTMP	Ohio Tributary Monitoring Program
OWDA	Ohio Water Development Authority
OWRC	Ohio Water Resources Council
PAHs	polyaromatic hydrocarbons
PHA	public health advisory
ppb	parts per billion
PCB	polychlorinated biphenyls
PCR	primary contact recreation
PDWS	public drinking water supply
POTW	publicly owned treatment works
PS	point source
PTI	permit to install
PTO	permit to operate
PWS	public water supply
QA	quality assurance
QC	quality control
QDC	qualified data collector
QSC	Quicksilver Caucus
RAP	Remedial Action Plan
RAS	return activated sludge
RF3	Reach File Version 3
RM	river mile
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SFY	state fiscal year (July 1 to June 30)
SIU	significant industrial user
sq mi	square miles
SSM	single-sample maximum
STORET	STOrage and RETtrieval (a U.S. EPA water quality database)
STV	statistical threshold value
SWIF	Surface Water Improvement Fund
SWIMS	Surface Water Information Management System
TDS	total dissolve solids
TMDL	total maximum daily load
TNTC	too numerous to count
TOC	total organic carbon
µg	microgram
USDA	United States Department of Agriculture
U.S. EPA	United States Environmental Protection Agency
USC	United States Code
USGS	U.S. Geological Survey
UV	ultraviolet
VIBI	vegetation index of biotic integrity
VIBI-FQ	VIBI – floristic quality
WAS	waste activated sludge
WAUs	watershed assessment unit
WBLE	western basin of Lake Erie

WEG	(Ohio EPA's) wetland ecology group
WHIP	Wildlife Habitat Incentives Program
WHO	World Health Organization
WLA	wasteload allocation
WPCLF	Water Pollution Control Loan Fund
WQ	water quality
WQC	Water Quality Certification (Section 401)
WQM	Water Quality Management (plan)
WQPSD	Water Quality Permit Support Document
WQS	water quality standards
WRP	Wetlands Reserve Program
WRRSP	Water Resource Restoration Sponsor Program
WSRLA	Water Supply Revolving Loan Account
WWH	warmwater habitat
WWTP	wastewater treatment plant

Executive Summary

The *Ohio Integrated Water Quality Monitoring and Assessment Report* summarizes water quality conditions in the State of Ohio. This report satisfies Ohio's water quality reporting requirements under Sections 303(d), 305(b) and 314 of the federal Clean Water Act. This report was last updated in 2016. **Analysis and listing changes are based on data collected during 2015 and 2016 for aquatic life and human health (fish tissue) uses; recreation and public drinking water supplies uses consisted of data from 2016 and 2017**.

Using methods devised to determine the suitability of waters for four specific uses—aquatic life (fish and aquatic insects), recreation (such as boating and swimming), human health (related to fish tissue contamination) and public drinking water supplies—available data were compared with water quality goals. The results indicate which waters are meeting goals and which are not. Waters not meeting the goals for one or more of the four types of uses are referred to as *impaired.* The waters found to be impaired are prioritized and scheduled for further study and restoration.

This report describes the methods used to judge impairment of each type of use and have evolved in each reporting cycle as the Agency gains access to more data and develops better ways to interpret them.

Results are reported for 1,538 watershed units, 38 large river units (in Ohio's 23 rivers that drain more than 500 square miles) and seven Lake Erie units. Additional information on streams draining between 20 and 500 square miles is also presented as this subset of waterbodies is used to calculate and track progress of Ohio's 80 percent full attainment by 2020 goal for wading and principal streams and rivers.

The percent of monitored miles of Ohio's large rivers in full attainment stayed steady compared to the same statistic reported in the 2016 IR. The 100 percent full attainment by 2020 aquatic life goal statistic for Ohio's largest rivers now stands at 87.5 percent, compared to 87.4 percent from the 2016 report. Conversely, smaller streams continue to improve with the percent of assessed sites in full aquatic life use attainment increasing from 66.1 percent to 69.3 percent. The top reasons for aquatic life impairment continue to be sediment, nutrients, habitat modification, hydromodification and organic enrichment.

For the human health use (fish tissue), polychlorinated biphenyl (PCB) contamination in fish is the cause of most of the human health impairments in Ohio. Mercury is the second leading cause.

The chemicals of concern causing impairment of the public drinking water supply use include nitrate, atrazine and cyanotoxin (due to certain algae). The primary source of the chemicals is nonpoint source runoff from agricultural land use. Additional sources of nitrate include home and commercial fertilizer application, failing septic systems, unsewered areas and wastewater treatment plant discharges. Of the 119 public drinking water supply assessment units, 37 are now listed as impaired by algae, with another 17 on the watch list for algae.

The recreation (bacteria) use analysis focuses on the number of bacteria in the water. For Lake Erie public beaches, the frequency of swimming advisories varies widely, ranging from 1.2 percent to more than 50 percent. Generally, beaches located near population centers have the most problems. Results are also reported for streams and inland lakes.

The recreation use has also been assessed for algae impacts in the western basin of Lake Erie. The western basin shoreline, the islands shoreline and the western basin open water assessment units are all listed as impaired by algae.

Of the 6,316 possible category assignments, the 2018 303(d) list includes changes in 209, with 69 delistings and 135 new listings. Most 303(d) removals and new listings are due to new data.

Changes since the 2016 Integrated Report

Changes made between the 2016 Integrated Report and the 2018 Integrated Report are as follows:

- This report contains revised assessment units for the entire Ohio portion of Lake Erie in Section D1.
- This report also discusses future methodology development for recreation assessment of Lake Erie based on algae blooms in Section I.
- The methodology for evaluating the recreation (bacteria) use has been updated to include the revised *E. coli* water quality criteria, effective January 2016, in Section F1.
- A new subcategory, 5p, was added to track which impairments are based on threatened status, primarily for nutrients.

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

D7. Public Comments and Responses to Comments on Draft Report

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

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

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

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

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

Comments Related to Specific Watersheds

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Addressing Waters Not Meeting Water Quality Goals

The federal Clean Water Act (CWA) requires that states identify waters not meeting water quality goals and then prioritize them for action to restore their beneficial uses[1]. The resulting list of prioritized impaired waters is known as the 303(d) list. Ohio's 2018 303(d) list is presented in Section L4 of this report.

Ohio made substantial changes to its listing process in 2010 (see Sections A and J in the *2010 Integrated Report* [Ohio EPA, 2010]); Ohio's *2012 Integrated Report* and 303(d) list (Ohio EPA, 2012) contained relatively few changes compared to the major adjustments made in 2010. A significant change to the 2014 report included the addition of a new indicator (algae) to the public drinking water supply (PDWS) use. The 2016 report contained changes in how the information was organized and what data sets were used (for instance, 2015 data was included for both recreation and PDWS uses) and was amended to include new open water assessment units for Lake Erie and a new recreation assessment methodology based upon algae. In 2018, the most significant changes are to the recreation use assessments and how Lake Erie Assessment Unit are defined (increased from six to seven units). The assessment based on bacteria has been updated to comply with the new *E. coli* WQS which include a 90-day geometric mean and statistical threshold value (see Sections F1-F3). In addition, an assessment method for recreation based on algae for the western basin of Lake Erie has been added in Section F4.

This section outlines the listing framework, lays out the prioritizing and delisting processes and results and reports on the status of Ohio total maximum daily load (TMDL) efforts including schedules for future TMDLs in Ohio.

J1. Ohio's 303(d) Listing Framework

The process of listing involves assigning a condition status (a category) for each of four beneficial uses for each assessment unit (AU). Data requirements, descriptions of available data, assessment methodologies and results were discussed and reported by individual beneficial use in Sections E, F, G and H.

In 2010, Ohio modified the five-category listing structure suggested by U.S. EPA to accommodate listing by beneficial use and introduced subcategories to give more information about the status of each water. In 2012, one additional subcategory - t - was added to aid reporting the status of AUs relative to approved TMDLs and data availability. In 2014, the "t" subcategory was altered slightly and a new category - d - was added to better reflect circumstances encountered as Ohio EPA revisits watersheds having approved TMDLs. In 2016, a new subcategory in Category 5 (5-alternative or 5-alt) was added to report on alternative restoration approaches for CWA 303(d) listed waters. Such waters will still require TMDLs until water quality standards are achieved. Ohio does not have any AUs listed under 5-alt in this report but anticipates using this subcategory in the future. In 2018, a new subcategory "p" is added under Category 5 to track which impairments are based on threatened status, primarily for nutrients. Table J-1 summarizes the categories and subcategories used in this report.

Also, in 2010, Ohio began listing by beneficial use within each AU and reporting on a smaller AU size. Watershed AUs shifted from an average size of 130 square miles to 27 square miles. Under the old system, an impairment of one beneficial use caused the AU to be Category 5 (impaired) regardless of the status of other uses.

[1] Beneficial uses include aquatic life, human health (fish contaminants), recreation and public [drinking] water supply.

Table J-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[2]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[3] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[4]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

Figure J-1 illustrates the significance of these changes in the listing procedures. A = aquatic life use; R = recreation use; H = human health use; and P = public water supply use. The numbers refer to the categories described in Table J-1 above. In the example, an AU listed in 2008 as impaired (category 5) appeared on the 2010 303(d) list as five units with four uses each; thus, reporting one piece of information changed to reporting 20 pieces of information. Whereas the 2008 list indicated only that the unit was impaired, the new listing indicates all the following information:

- Aquatic life use is impaired (5) in one unit, not impaired (1) in one and unknown (3) in one. A TMDL to address impairments has been completed in one unit (4A) and the impairment in the remaining unit is being addressed in some other way (4B, for example, a discharge permit).
- Recreation use is impaired (5) in three units, unknown (3) in one and a TMDL to address the impairment in one unit has been completed (4A).
- Human health results based on fish tissue analysis indicate that four of the five units are impaired (5) and one is unknown (3).
- Public drinking water supplies exist in only two of the five units and one of those is impaired (5). The status of the other is unknown (3).

[2] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[3] HUC means hydrologic unit code.
[4] Ohio currently has no waters that are listed under this subcategory.

For the aquatic life use, Ohio EPA continues the transition that began in 2010 of translating data evaluated at the 11-digit hydrologic unit size to the smaller 12-digit size. We expect that the few remaining relic categories will be dealt with as those areas are monitored again.

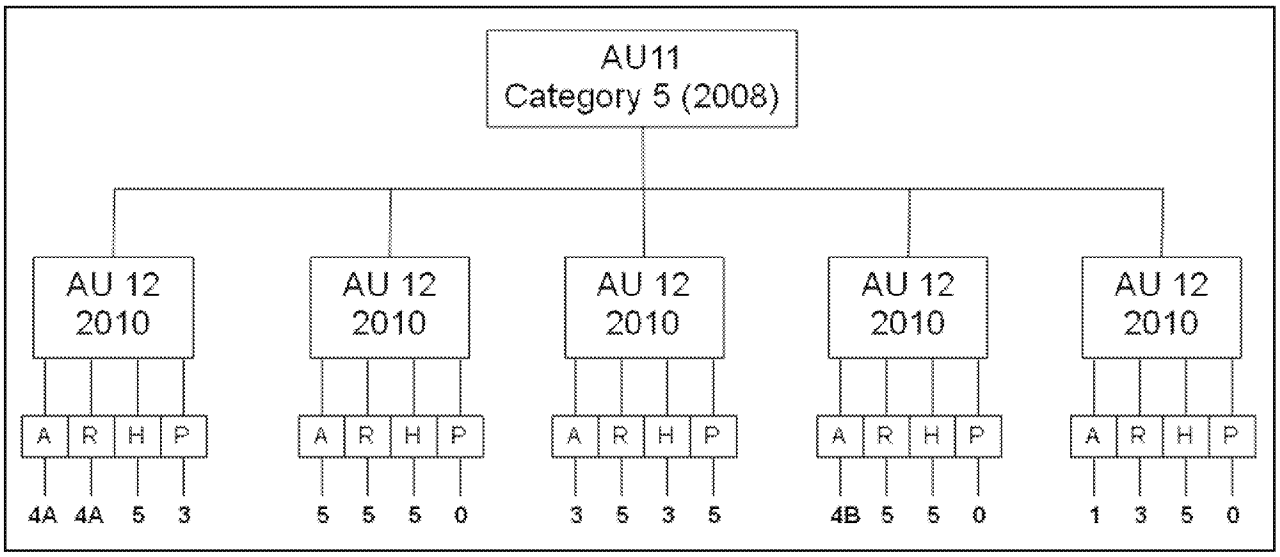

Figure J-1 — Listing by smaller AUs and individual beneficial uses.

Table J-2 shows the number of potential listings that could result from the combination of smaller AUs and listing by individual use.

Table J-2 — Potential listing opportunities in Ohio's listing framework.

	2008 and Before			2010 and After		
AU Types	Number of AUs	Status Reports per Unit	Total Number of Possible Listings	Number of AUs	Status Reports per Unit	Total Number of Possible Listings
Watershed	331	1	331	1538	4	6,152
Large river	23	1	23	38	4	152
Lake Erie shore	3	1	3	3	4	12
Totals	357	1	357	1,579	4	6,316

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

As previously stated, the impaired waters are identified and assigned a category by individual beneficial use in Sections E, F, G and H. After waters are identified as impaired and it is determined that a TMDL is required, the waters are prioritized to produce the 303(d) list (see Section L4). Because Ohio uses a highly integrated monitoring and TMDL linkage to ensure efficient use of resources, it makes sense to continue to set priorities by AU rather than by individual use.

Ohio River and Open Waters of Lake Erie

ORSANCO has lead responsibility for the multi-jurisdictional Ohio River water quality as outlined in Section D2. Binationally, the U.S. and Canada are working together under the GLWQA to address water quality issues in Lake Erie. Ohio EPA is actively participating in TMDLs for tributaries as well as many other actions for Lake Erie outlined in Section J3, so priority for Ohio EPA-initiated TMDLs is assigned a low priority for these waters. TMDLs in watersheds that drain to the Ohio River and Lake Erie will reduce the pollutant load delivered to each water.

Inland Waters and Lake Erie Shoreline

A point system is used to assign priority to impaired AUs. A total of 22 points could be assigned to an AU, distributed as shown in Figure J-2. The priority results for specific AUs are reported in Section L and in AU summary information available on the web page.

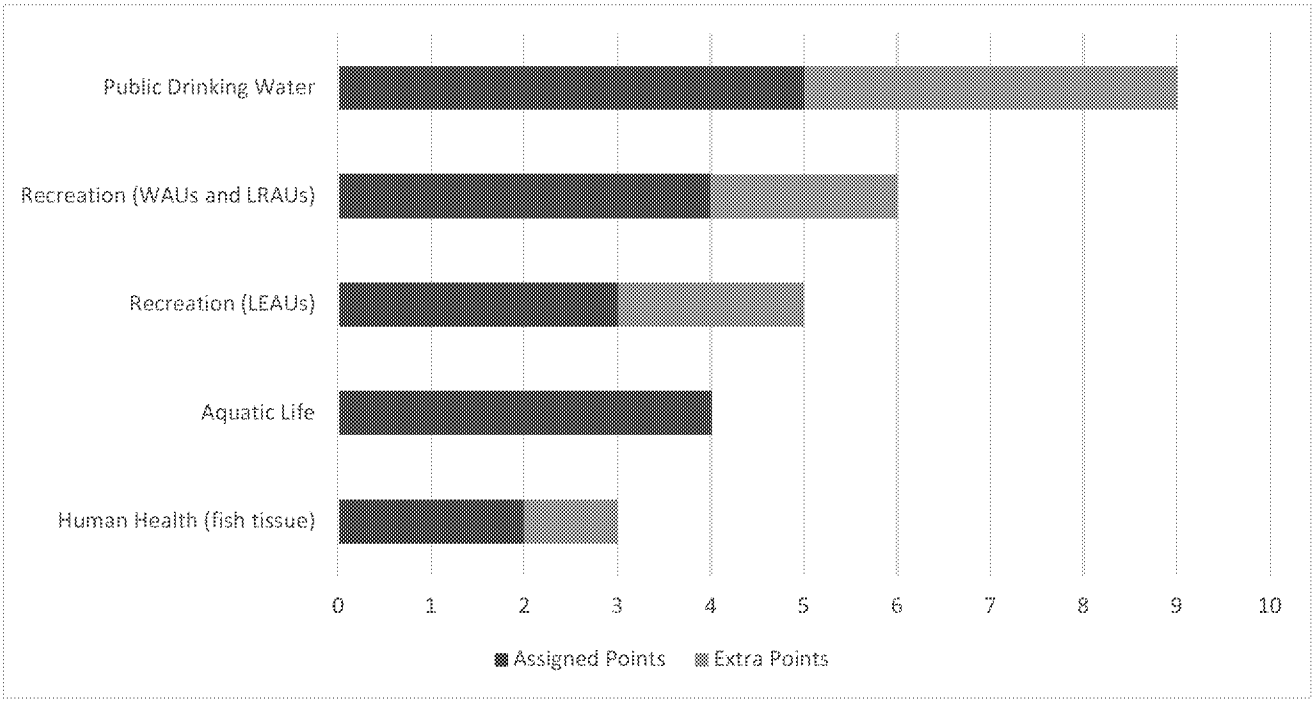

Figure J-2 — Priority points assigned based on use impairment or other factors (extra points).

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.

Two additional points may be awarded to AUs that are impaired for the recreation use and contain Class A waters. Class A waters are those most suitable for recreation, such as popular paddling streams and lakes with public access points developed, maintained and publicized by governmental entities. Priority points for Lake Erie recreation use are calculated based on the bathing water geometric mean for *E. coli* and the percentage of days that the AU exceeded that criteria. An impaired AU gets one point if the percentage of days in exceedance was in the range of 0 to 10 percent; two points if in the range of 10.1 percent to 20

percent; and three points if the percentage of days in exceedance was greater than 20.1 percent. Two additional points may also be awarded to AUs that are impaired for recreation use based on algae.

Table J-3 — Priority points for impaired AUs.

Point Values	Condition	Number of AUs		
		WAUs	LRAUs	LEAUs
Human Health Use impairment (fish tissue contaminants) (maximum of 3 points)				
2	Listed as impaired for Fish Contaminants (Human Health Use)	436	32	4
1	Additional point in AUs that exceed 500 ppb for PCBs or Hg	3	0	0
Recreation Use impairment – WAUs and LRAUs (maximum of 6 points)				
1	Listed as impaired with AU score between 0 and 25	108	0	
2	Listed as impaired with AU score between 75.1 and 100	92	17	
3	Listed as impaired with AU score between 25.1 and 50	271	2	
4	Listed as impaired, with AU score between 50.1 and 75	279	7	
2 extra	Additional points if AU contains Class A waters	74	26	
Recreation Use impairment - LEAUs (maximum of 5 points)				
1	Listed as impaired with 0 to 10% of season exceeding *E. coli* criteria			1
2	Listed as impaired with 10.1% to 20% of season exceeding *E. coli* criteria			1
3	Listed as impaired with > 20.1% of season exceeding *E. coli* criteria			2
2 extra	Additional points if AU is impaired for algae			3
Aquatic Life Use impairment (maximum of 4 points)				
1	Listed as impaired, with AU score between 0 and 25	161	0	2
2	Listed as impaired, with AU score between 75.1 and 100	35	8	0
3	Listed as impaired, with AU score between 25.1 and 50	119	2	2
4	Listed as impaired, with AU score between 50.1 and 75	93	2	0
Public Drinking Water Use impairment (maximum of 9 points)				
5	Listed as impaired for Public Drinking Water Use for one indicator	33	5	6
2 extra	Additional points in AUs impaired for each additional indicator	1	3	0
1	Not listed as impaired, but on watch list; one point for each indicator	33	3	0

As outlined in Section C3, the priority schedule for TMDL projects in Table J-15 was developed considering the above information, as well as the following:

- Social Factors (highly used recreational waters, drinking water supply for significant populations, ongoing/sustained involvement of any local groups or government, etc.)
- Value Added (is a TMDL the most efficient way to achieve improved water quality?)
- Is there an approved watershed action plan – if so how many implemented projects?
- How much regulatory authority exists over sources?
- Is there an alternative way to improve water quality more quickly than a TMDL? (for example, immediate implementation of an existing plan or projects, or imposing more stringent permit limits to address a localized problem)
- Are there other factors in play? Examples include:
    - Pending enforcement for a discharger (possible 4B option)
    - U.S. Army Corps of Engineers modeling of reservoir discharge to improve downstream water quality
    - Local or statewide strategy or requirements in place to address an issue/pollutant (for example, new health department rules for home sewage treatment systems if they are sole/primary source of impairment)

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.

In the *2014 Integrated Report*, Ohio listed waters impaired by algal toxins for the first time. In the 2016 report, more waters are listed, especially lakes and reservoirs. 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.

Based on a review of the inland lakes or reservoirs that were listed as impaired or on the Watch List for algae indicators in the 2014 Integrated Report, as well as the more recent data collected for algae at PDWS with intakes in inland lakes or reservoirs that led to the 303(d) listing in this report, the following inland lakes were chosen as Ohio's priorities for the next few years:

- Tappan Lake in Harrison county (upper Little Stillwater Creek)
- W.H. Harsha Lake in Clermont County (Lucy Run - East Fork Little Miami River)
- Clyde/Beaver Creek Reservoir in Seneca County (Beaver Creek, Green Creek)

The impairments (or watch list parameters) cited include nitrate, pesticides and algae indicators. Where there is a TMDL developed, it is older and/or does not include the stream reaches that most impact the lake/reservoir. In most cases, there are active local parties interested and/or there is a sizable population served by these sources. Ohio EPA considers nutrients (primarily phosphorus as the TMDL parameter) to be the priority for the inland lake efforts. However, the cause of impairment in more than one area also includes pesticides and/or nitrates, so other pollutants may be added to the TMDL or alternative plan. These waters are listed on the 303(d) Priority list in Section L4 as follows:

AU Number	AU Name	Sq. Mi. in Ohio	Human Health	Recreation	Aquatic Life	PDW Supply	Priority Points
05040001 15 03	Upper Little Stillwater Creek	29.72	1	1	3	5	5
05090202 12 03	Lucy Run-East Fork Little Miami River	32.48	1	1	5	5	7
04100011 12 02	Beaver Creek	29.3	3i	4Ah	4A	5	5
04100011 12 03	Green Creek	30.78	1	5	4A	5	9

While they do not have the highest priority points, the AUs with higher priority points that include a PDWS impairment already have a TMDL under development or will be addressed through other means such as the Great Lakes Water Quality Agreement Annex 4 nutrient reduction efforts discussed in J3.

Tappan Lake

- Stillwater Creek basin – primarily forest with mining influences.
- 2,350 acres of water surface.
- Provides drinking water to the Village of Cadiz (pop. ~ 3,350).
- Lake is operated by the U.S. Army Corp of Engineers. It is a multipurpose project for flood reduction, recreation and fish and wildlife enhancement.
- Assessed by Ohio EPA in 2012-2013 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin).

2018 IR Update

The Tappan Lake Nutrient Reduction Initiative (TLNRI) was formed at the end of 2017 by the Muskingum Watershed Conservancy District and the Village of Cadiz. TLNRI's goal is to eliminate the presence of harmful algal blooms and their resultant water-borne toxins in Tappan Lake within the next decade. The TLNRI has outlined the following steps toward achieving their goal:

- Phase 1: Comprehensive study of existing water quality data for the watershed and identification of gaps (year one)
- Phase 2: Collection of data to fill gaps, evaluation and selection of remedial actions for the watershed (years two through four)
- Phase 3: Implementation of action plan for the watershed (years five through 10)

Ohio EPA is an active partner in the initiative and will provide support through participation in the four subgroups. The Stillwater Creek watershed is a high priority project for either a TMDL or an alternative plan. The Agency will continue to participate in the TLNRI efforts and determine which approach is most appropriate as that work unfolds.

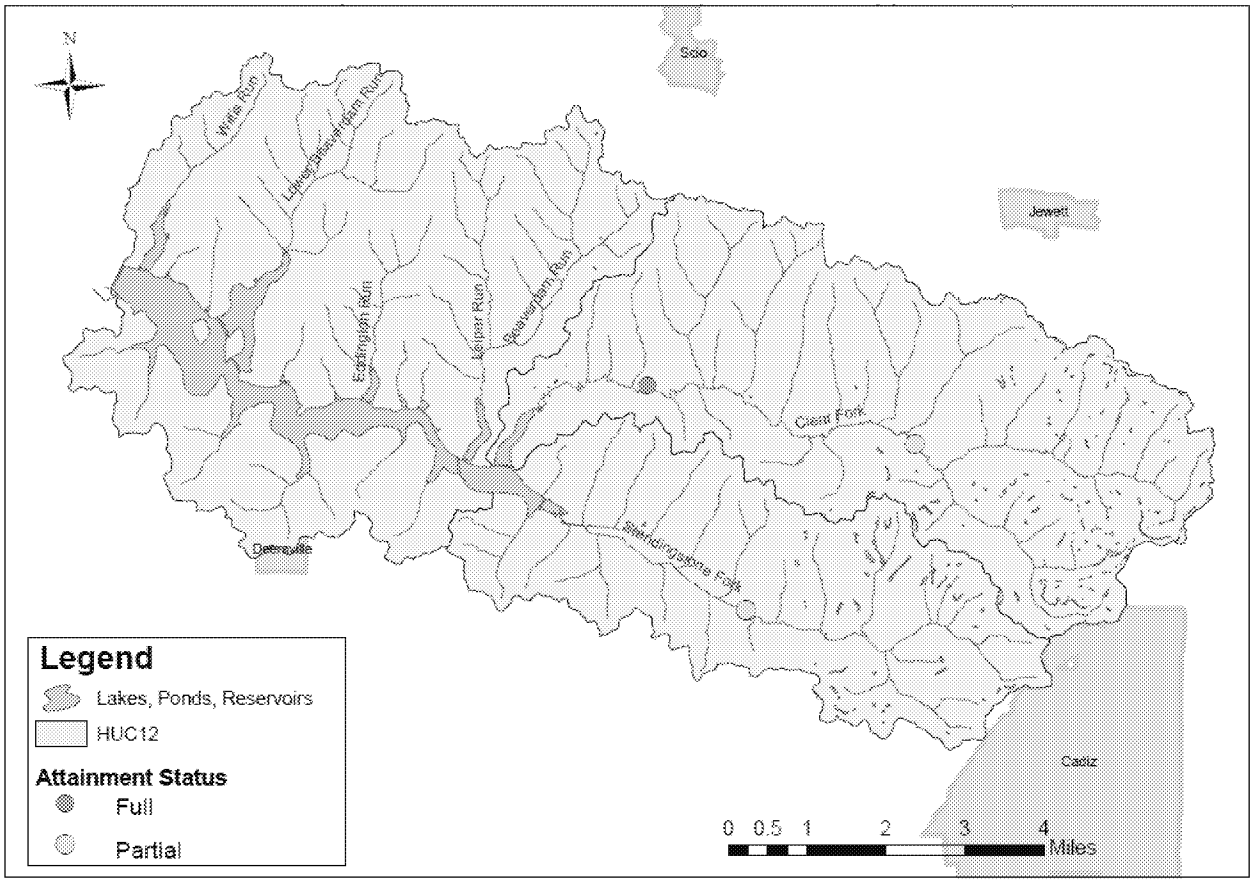

Figure J-3 — Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey.

William H. Harsha Lake

- Located in the East Fork of the Little Miami River watershed – largely agriculture and forest with some urban influence.
- 2,160 acres of water surface.
- Lake is operated by the U.S. Army Corp of Engineers and is a multipurpose project for flood reduction, water supply, recreation and wildlife habitat.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin) and placed it on the watch list for atrazine.

From the *Ohio EPA East Fork Little Miami River Technical Support Document, 2014*:

- Clermont County operates a community public water system that serves a population of approximately 117,097 people. The water supply sells water to the village of Batavia, village of Williamsburg and New Richmond Robin-Grays water system. Clermont County operates two ground water plants and one surface water plant. The BMW surface water plant draws water from an intake structure on Harsha (East Fork) Lake. The system's treatment capacity is approximately 27.5 million gallons per day, but current average production is 12.5 million gallons per day.
- There are several environmental organizations active in the East Fork Little Miami River watershed. The oldest of these is Little Miami Incorporated (LMI) which has been active for 45 years. Most of LMI's activities have involved the purchase of conservation easements or property purchases in the riparian zone of the river. Clermont County and SWCDs in Clermont, Brown, Highland and Clinton counties formed the East Fork Watershed Collaborative to take advantage of ODNR's Watershed Coordinator Program.
- Several research projects have been initiated in the East Fork watershed and Harsha Lake by U.S. EPA's National Exposure Research Laboratory in Cincinnati and the U. S. Army Corps of Engineers. Among other topics research and monitoring are examining HABs and nutrients, impacts on the Clermont County water intake, carbon sequestration, methane release, nutrient trading, environmental tipping points and fish population genetics. Currently, seven different projects are conducting monitoring in Harsha Lake.

2018 IR Update

The East Fork Watershed Cooperative, formed in 2001, continues to be active in addressing water quality issues in the East Fork Little Miami River watershed. The Cooperative is in the process of updating watershed action plans into Nine Element Nonpoint Source Implementation Strategy Plans. The first updated plan for the Fivemile Creek HUC 12, approved by Ohio EPA on July 31, 2017, is located upstream of Harsha Lake. The East Fork Little Miami River watershed is a high priority TMDL project for TMDL development. The Agency plans to initiate the next steps in the TMDL development process by the 2020 IR.

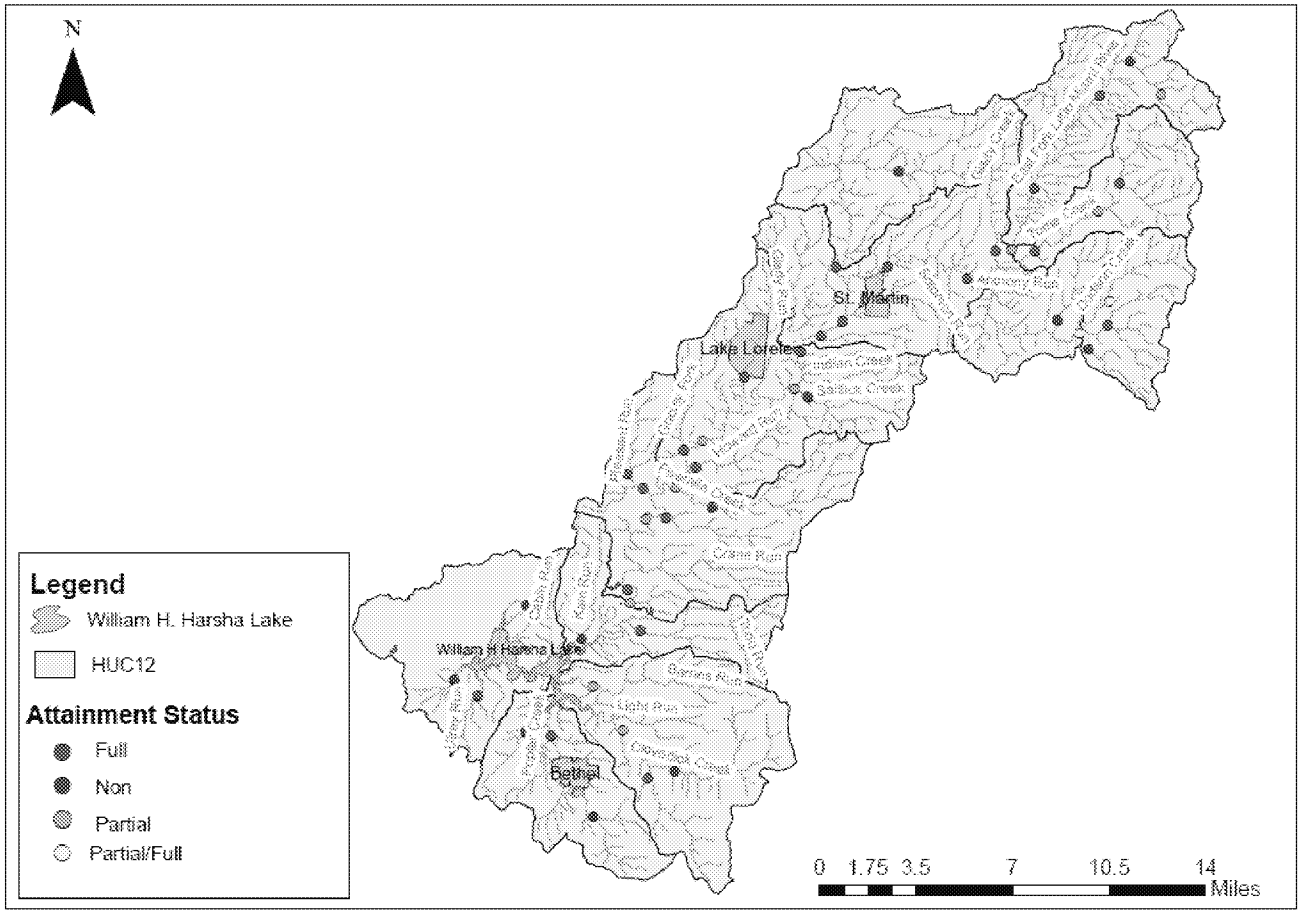

Figure J-4 — Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey.

Clyde/Beaver Creek Reservoir (up-ground)

- Sandusky river watershed - primarily agricultural land use above reservoir.
- 110 acres of water surface.
- Provides drinking water to the City of Clyde (pop. ~6,320).
- Reservoir was assessed by Ohio EPA in 2009-2010 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* placed the lake on the watch list for PDWS use based on algae indicators (microcystin) and nitrates. In the *2016 Integrated Report* it was listed as impaired for PDWS use based on algae indicators.
- The Raccoon Creek reservoir that also serves the City of Clyde is filled with water from Beaver Creek. The Raccoon creek reservoir was listed in the 2014 IR as impaired for PDWS based on algae indicators (microcystin).
- A TMDL for the lower Sandusky River was completed by Ohio EPA and approved by U.S. EPA but did not set specific loads for Beaver Creek since the stream was not listed as impaired.

2018 IR Update

Sampling of Raccoon Creek reservoir was completed in 2016 and 2017 as part of Ohio EPA's inland lakes sampling program. The results of this sampling will be included in the 2020 IR and will be used to direct the next steps in the restoration process for this watershed.

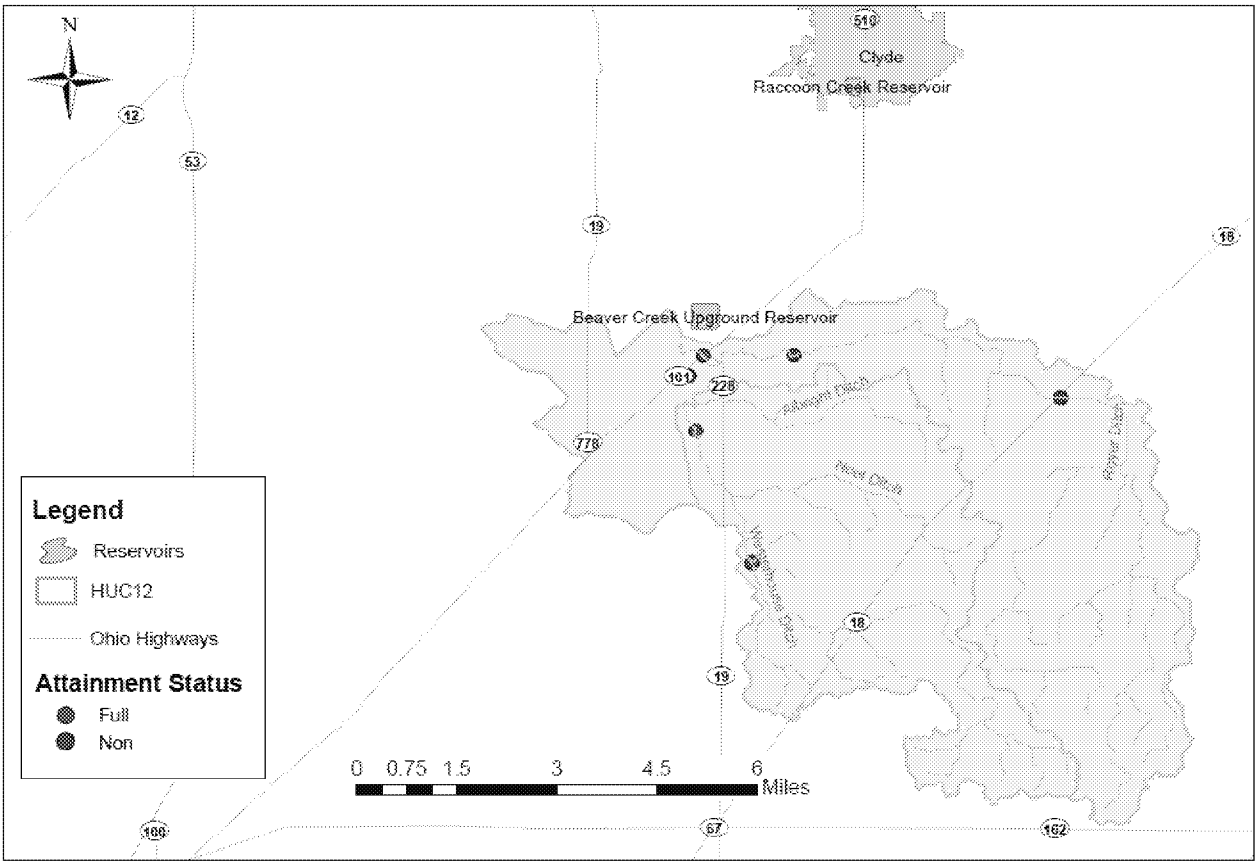

Figure J-5 — Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009.

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 in accordance with the Domestic Action Plan; and active participation on Annex 4 (Nutrients) and other Great Lakes Water Quality Agreement (GLWQA) efforts. Effective lake management and coordinated implementation are needed to address the Western Basin of Lake Erie algal blooms and the Central Basin hypoxia issues, requiring a multi-state and binational effort. Currently, there are many parallel planning and management efforts ongoing at the state, federal and binational level. For the open waters of Lake Erie, respecting and working through the binational governance framework is the appropriate process and Ohio intends to aggressively pursue state measures that complement the process and are neither duplicative nor contradictory.

Great Lakes Water Quality Agreement

Binationally, the U.S. and Canada are working together under the GLWQA to develop nutrient reduction strategies; and create and implement action plans to meet the targets. Annex 4 of the 2012 GLWQA specifically addresses nutrients in the Great Lakes and contains short-term requirements specific for Lake Erie. The U.S. and Canada formally adopted new phosphorus targets for the western and central basins of Lake Erie in February 2016. These targets have been incorporated into Ohio's Domestic Action Plan and are the goals for all the state's efforts to reduce phosphorus loading to the lake.

As water quality has improved through the decades, Ohio EPA has addressed most of the significant point source problems and are now left with primarily nonpoint source related impairments. The current Lake Erie algal blooms and Central Basin hypoxic zone are driven by nutrient loading to the Lake. Recent assessments by the Ohio Phosphorus Task Force (Phases I and II) and Annex 4's Objectives and Targets Task team, as well as a Nutrient Mass Balance Study completed by Ohio EPA in December 2016, 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 waterbody (Lake Erie). To compliment the 40 percent phosphorus reduction goals set forth by the Annex 4 committee, a separate analysis is being done to set seasonal/annual load reductions targets for the smaller tributaries (for example, within the Maumee basin). Ohio is directly involved in developing these goals and reduction targets needed for Lake Erie while moving forward on developing implementation strategies and acting to reduce nutrient contributions to the lake.

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.

Lake Erie Collaborative Agreement

The Lake Erie Collaborative Agreement was another state/province led-initiative; it was signed in June 2015 by Ohio, Michigan and Ontario (*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. One of the goals spelled out in the Collaborative Agreement was to reduce nutrient levels going into Lake Erie by 40 percent. The other was to develop a strategic plan to manage dredge material 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.

Ohio's Domestic Action Plan for Lake Erie

The State of Ohio's Domestic Action Plan expanded upon the *Collaborative Implementation Plan* and was submitted to U.S. EPA on Feb. 7, 2018. The commitment to meet the Collaborative Agreement phosphorus reduction goals of 20 percent by 2020 and 40 percent by 2025 was also incorporated into this plan. The plan is not intended to static but to be revised following the adaptive management philosophy. (*lakeerie.ohio.gov/Portals/0/Ohio DAP/DAP 1-0 Final for USEPA 2018-02-07.pdf*).

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 continue utilizing this tool to target implementation in Ohio's Lake Erie watersheds as it works to meet the Annex 4 phosphorus targets and allocations.

The TMDL document 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.

Ohio has completed TMDLs 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 nutrients and algae and have established phosphorus 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. However, Ohio is working with U.S. EPA, Tetratech (the contractor), Indiana and Michigan to develop a method for setting load reduction goals for the smaller tributaries to Lake Erie (for example, the tributaries to the Maumee river) and evaluate whether the tributary TMDLs will provide the load reductions needed to protect the lake. Where the local TMDL reductions are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps.

The Annex 4 process of developing loading targets and Domestic Action Plans are very similar 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.

State TMDL vs Binational Annex 4

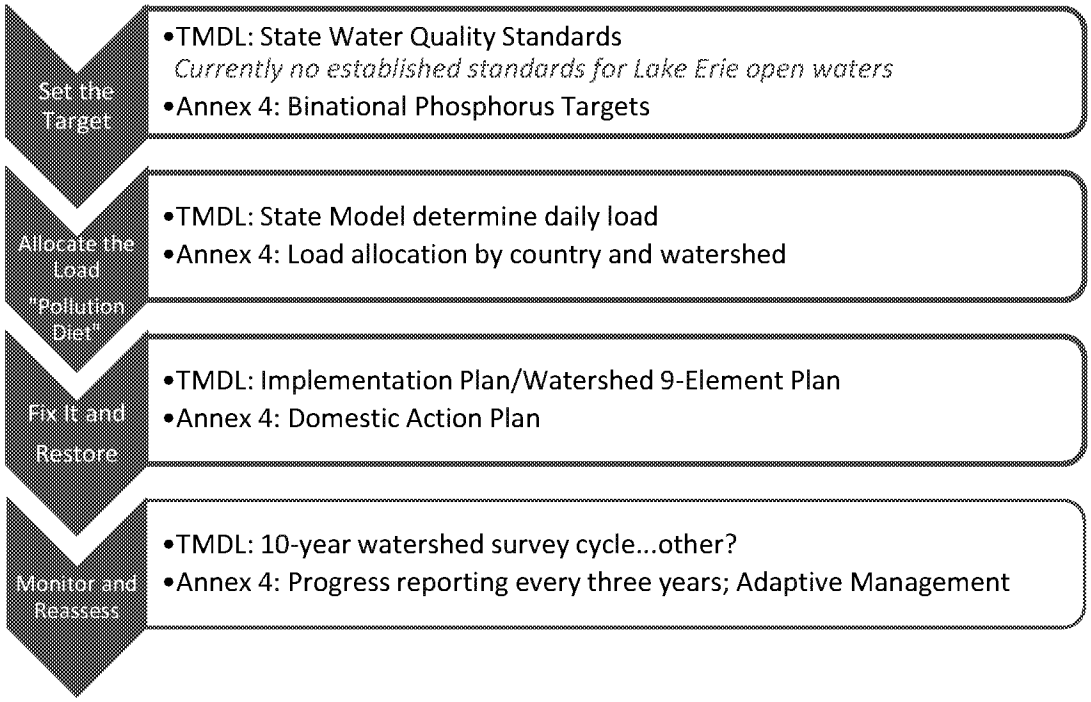

Figure J-6 — Key steps in the state TMDL and binational Annex 4 processes.

Ohio-based Nutrient Reduction Efforts

Ohio EPA's *NPS Management Plan* (Plan) is the Agency's guiding document that outlines recommended strategies, goals and objectives for controlling nonpoint sources of water quality impairment. The Plan was most recently updated in 2014 and identifies specific management activities to be implemented by Ohio EPA's NPS management program. The recent algal blooms on Lake Erie, the Ohio River and across the inland waters of Ohio were caused by excessive nutrients and exacerbated by changing weather patterns such as warmer temperatures and more intense storm events. The long-term solution is to reduce sources of nutrients while holistically restoring stream health and improving the waterway's ability to assimilate and utilize nutrients. This is also known as the stream's assimilative capacity. Restoring stream health will not only reduce the amounts of nutrients that reach the receiving water body, but restoration of in-stream and riparian habitat supports a healthy ecosystem, builds resilience to climate change impacts and improves recreational opportunities. The most current version of Ohio's *NPS Management Plan* is available at *epa.ohio.gov/Portals/35/nps/NPS_Mgmt_Plan.pdf.*

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 in 2010 and has expanded the scope and scale of implementation, developed a statewide strategy, targeted funding and undertaken legislative action to address the problem. As part of the more than $3 billion Ohio has invested comprehensively in the Lake Erie watershed, more than $150 million was made available starting in 2014 to help to public water systems keep drinking water safe and wastewater facilities reduce the amount of phosphorus they discharge into the Lake Erie watershed. In addition, Ohio continues to target millions of dollars to support local health departments to find and fix faulty residential septic systems that are contributing nutrients to Ohio waters.

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

- 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 *epa.ohio.gov/dsw/wqs/NutrientReduction.aspx*.
- GLRI Demonstration and Nutrient Reduction Projects — Nine grants totaling more than $13.9 million were awarded to Ohio. Highlights include: installation of the first two saturated buffers installed in Ohio; installation of approximately 70 controlled drainage structures; development of 52 whole farm conservation plans; planting of more than 9,000 acres of cover crops; installation and planting of 50 acres of reconstructed or restored wetlands; restoration of 3,500 linear feet of stream and 500 feet of streambank stabilization; installation of 4,400 feet of two-stage ditches; installation of rain gardens and vegetated infiltration basins in the Toledo area; and completion of 29 storm water, wetland and stream restoration projects in Cuyahoga County.
- 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[5]; 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.
- Ohio Senate Bill 150 — This bill, effective Aug. 21, 2014, requires, among other things, that beginning Sept. 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.
- Ohio HB 64 — This bill, effective June 30, 2015, required 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 *legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-64*.
- 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.
- 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.
- 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 several recommendations to be implemented during the next several years. For example,

[5] "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.

the report recommends ways for farmers to better manage fertilizers and animal manure and 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 *agri.ohio.gov/topnews/waterquality/docs/FINAL_REPORT_03-09-12.pdf.*

- 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 *lakeerie.ohio.gov/Portals/0/Reports/Task_Force_Report_October_2013.pdf.*
- 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 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 *epa.ohio.gov/portals/35/documents/point_source_workgroup_report.pdf.*

J4. Summary of Results

The consolidated results of the 2018 analysis are shown in Table J-4 and Figure J-7 — Summary of 2018 IR results for watershed AUs by beneficial use. through Figure J-9.

Table J-4 — Summary of results for each beneficial use[6]

	Human Health (fish tissue)	Recreation	Aquatic Life	Public Drinking Water Supply
Watershed assessment units				
Not being used for PDWS	0	0	0	1434
Attains	230	157	500	31
Unknown	872	186	109	39
Impaired, needs TMDL	436	750	411	33
Impaired, TMDL complete	0	445	408	1
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	14	0
Impaired, natural condition	0	0	96	0
Total watersheds considered	**1538**	**1538**	**1538**	**1538**
Large river assessment units				
Not being used for PDWS	0	0	0	29
Attains	6	3	18	0
Unknown	0	3	0	4
Impaired, needs TMDL	32	26	12	5
Impaired, TMDL complete	0	6	5	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	3	0
Impaired, natural condition	0	0	0	0
Total large rivers considered	**38**	**38**	**38**	**38**
Lake Erie assessment units				
Not being used for PDWS	0	0	0	1
Attains	0	0	0	0
Unknown	3	2	3	0
Impaired, needs TMDL	4	5	4	6
Impaired, TMDL complete	0	0	0	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	0	0
Impaired, natural condition	0	0	0	0
Total Lake Erie considered	**7**	**7**	**7**	**7**

[6] 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.

Summary Tables of Waterbody Conditions; Lists of Prioritized Impaired Waters; and Monitoring and TMDL Schedules

Section L contains tables showing the 303(d) listing details for each of the assessment unit types and is divided into five sections as follows:

- Section L1: Status of Watershed Assessment Units
- Section L2: Status of Large River Assessment Units
- Section L3: Status of Lake Erie Assessment Units
- Section L4: Section 303(d) List of Prioritized Impaired Waters
- Section L5: Category 4B demonstrations contained in approved Ohio TMDLs to date

In Sections L1 through L4, there are four columns labeled, in order, Human Health, Recreation, Aquatic Life and PDW Supply. These four columns represent each beneficial use included in the 303(d) list of impaired waters and the numbers in the columns represent the category for that assessment unit for that beneficial use. Table L-1 defines the categories and subcategories assigned to each use.

Table L-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[1]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[2] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[3]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

[1] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[2] HUC means hydrologic unit code.
[3] Ohio currently has no waters that are listed under this subcategory.

05090202 90 02	Little Miami River Mainstem (O'Bannon Creek to Ohio River)	1757	5	4Ah	5	0	4

Section L3. Status of Lake Erie Assessment Units		Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
Assessment Unit	Assessment Unit Name						
041202000101	Lake Erie Islands Shoreline (≤3m)	4.99	5	5	5	5	14
041202000201	Lake Erie Western Basin Shoreline (≤3m)	47.88	5	5	5	5	17
041202000202	Lake Erie Sandusky Basin Shoreline (≤3m)	68.01	5	5	5	5	16
041202000203	Lake Erie Central Basin Shoreline (≤3m)	13.39	5	5	5	0	9
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
041202000302	Lake Erie Sandusky Basin Open Water (>3m)	361.71	3i	3	3	5	5
041202000303	Lake Erie Central Basin Open Water (>3m)	2544.98	3i	3	3	5	5

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 37 of 38. PageID #: 9510

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Section L4. Section 303(d) List of Prioritized Impaired Waters							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
041202000201	Lake Erie Western Basin Shoreline (<=3m)	47.88	5	5	5	5	17
04100009 90 02	Maumee River Mainstem (Beaver Creek to Maumee Bay)	6608	5	5h	5	5	16
041202000202	Lake Erie Sandusky Basin Shoreline (<=3m)	68.01	5	5	5	5	16
04100009 90 01	Maumee River Mainstem (Tiffin River to Beaver Creek)	6058	5	5h	5	5	15
05030103 08 06	Burgess Run-Yellow Creek	20.19	5h	5h	5	5	15
041202000101	Lake Erie Islands Shoreline (<=3m)	4.99	5	5	5	5	14
04100005 90 01	Maumee River Mainstem (IN border to Tiffin River)	2315	5	5h	1	5	13
04100007 12 06	Big Run-Flatrock Creek	48.28	5	5h	5	1	12
05040003 03 04	Delano Run-Kokosing River	32.95	5	5h	5	0	12
05060001 04 06	Glade Run-Scioto River	38.34	5h	5h	5	3i	12
05060001 06 02	Middle Mill Creek	59.91	3	5h	5d	5	12
05090202 10 05	West Fork East Fork Little Miami River	28.88	1h	5h	5	5	12
05030103 90 01	Mahoning River Mainstem (Eagle Creek to Pennsylvania Border)	1075	5	5h	5	0	11
05080002 90 02	Great Miami River Mainstem (Four Mile Creek to Ohio River)	5371	5	5h	5	0	11
04100006 03 03	Flat Run-Tiffin River	33.17	5	5h	5	3i	11
04100007 06 04	Dry Fork-Little Auglaize River	57.07	1	5h	1	5	11
04110002 02 03	Lake Rockwell-Cuyahoga River	61.33	5	5	4Ah	5	11
05060001 90 02	Scioto River Mainstem (Olentangy River to Big Darby Creek)	2641	5	5h	5	0	10
05080001 90 01	Great Miami River Mainstem (Tawawa Creek to Mad River)	1853	5	5h	5	3i	10
04100003 02 04	West Branch St Joseph River	14.76	5	5h	5	0	10
04100004 02 05	Prairie Creek-St Marys River	42.22	5	5h	5	0	10
04100004 03 03	Yankee Run-St Marys River	59.44	5	5h	5	0	10
04100006 05 02	Brush Creek	66.01	5h	5h	5	0	10
04100012 02 04	Mouth Vermilion River	28.13	5	5h	5h	1	10
04110003 01 05	Lower Ashtabula River	18.27	5	5h	5	0	10
05030103 08 05	Headwaters Yellow Creek	19.36	3	5h	5	5	10
05080002 07 04	Dicks Creek	27.71	5h	5h	5	0	10
05090202 02 06	Shawnee Creek-Little Miami River	32.07	5h	5h	5d	0	10
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
05060001 90 01	Scioto River Mainstem (L. Scioto R. to Olentangy R.); excluding O'Shaughnessy and Griggs reservoirs	1068	5	3i	5	5	9
04100001 03 07	Heldman Ditch-Ottawa River	28.15	5	5h	5	0	9
04100003 03 03	Eagle Creek	35.00	5h	5h	5	0	9
04100004 01 02	Center Branch St Marys River	29.00	5h	5h	5	0	9
04100004 02 04	Twelvemile Creek	23.58	5h	5h	5	0	9
04100009 06 03	Haskins Road Ditch-Maumee River	15.73	3	5h	1	5	9
04100011 12 03	Green Creek	30.78	1	5h	4A	5	9
04110001 01 08	Baker Creek-West Branch Rocky River	26.08	5	5h	5	0	9

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 38 of 38. PageID #: 9511

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

INTRODUCTION AND SUMMARY

Defendants oppose Plaintiffs' Motion for Leave to File Supplemental Complaint, Doc. 36, because both of Plaintiffs' proposed supplemental counts fail to state a claim upon which relief may be granted. First, both counts seek to challenge EPA's approval of Ohio's 2016 list of impaired waters, but EPA's July 9, 2018, approval of Ohio's 2018 list supersedes the 2016 list and moots Plaintiffs' claims. Second, Plaintiffs' proposed supplemental count one, a claim under the Administrative Procedure Act ("APA"), fails to state a claim because Plaintiffs fail to identify a final agency action. Although EPA's approval of Ohio's 2016 list is a final agency action as to the listing of impaired waters, Plaintiffs are not challenging that decision. Instead, Plaintiffs argue that Ohio decided it would never submit a total maximum daily load ("TMDL") for western Lake Erie and argue that EPA approved that purported "no TMDL" decision. In fact, Ohio made no such decision, nor did EPA. Third, Plaintiffs' proposed supplemental count two, pled in the alternative as a violation of a nondiscretionary duty, fails to state a claim because it, too, rests of the false premise that

Ohio decided it would never submit a TMDL for western Lake Erie. Because Ohio has not "constructively submitted" no TMDL for western Lake Erie, any statutory duty to review that "constructive submission," should such a duty exist, has not been triggered.

EPA further cross-moves for summary judgment on the existing Complaint, which challenges an action – EPA's May 19, 2017, approval of Ohio's 2016 Section 303(d) List absent the inclusion of the open waters of Lake Erie – that has long since been reversed through subsequent action by EPA and the State and is therefore completely moot.

BACKGROUND

A. Statutory and Regulatory Background

As part of the Clean Water Act's ("CWA") cooperative state/federal framework for addressing water quality, each state must identify waters within its boundaries for which existing pollution controls are not stringent enough to meet applicable water quality standards. 33 U.S.C. § 1313(d)(1). Such waters are known as "water quality limited segments" pursuant to 40 C.F.R. § 130.2(j) or colloquially as "impaired

waters." Every two years, a state must submit a list of water quality limited segments still requiring TMDLs. 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(d)(1). Because the list is required by Section 303(d) of the CWA, 33 U.S.C. § 1313(d), it is commonly referred to as the "Section 303(d) list."

Each state must establish a priority ranking for the water quality limited segments on its Section 303(d) list, taking into account the severity of pollution and the uses to be made of those waters. 33 U.S.C. § 1313(d)(1)(A). States must also identify among those waters which ones are targeted for TMDLs within the next two years. 40 C.F.R. § 130.7(b), (d). States are required to establish TMDLs for each water quality limited segment on their Section 303(d) lists, in accordance with the priority ranking. 33 U.S.C. § 1313(d)(1)(C); 40 C.F.R. § 130.7(c)(1). TMDLs are plans that set the quantity of a pollutant that may be introduced into a receiving water without exceeding applicable water quality standards, taking into account seasonal variations and an adequate margin of safety. 33 U.S.C. § 1313(d)(1)(C). Calculations to establish TMDLs are subject to public review. 40 C.F.R. §

130.7(c)(1)(ii).

Ohio, like many states, combines its Section 303(d) list with a water quality report and submits both together as an "integrated report." In *Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017), the court erroneously stated that states identify their impaired waters *and* establish their TMDLs by submitting these integrated reports. 266 F. Supp. 3d at 176.[1] That misreads the statute, regulations, and EPA's guidance. Section 303(d) lists and integrated reports on the one hand, and TMDLs on the other, are distinct and very different documents and actions. Section 1313(d)(1)(A) requires states to "identify" impaired waters; section 1313(d)(1)(C) then requires states to "establish" for those identified waters a TMDL.

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[1] *See also* April 11, 2018, Order, Doc. 29 at 8.

themselves. Thus, while an integrated report typically contains the Section 303(d) list, including a priority ranking of water quality limited segments still requiring TMDLs and the state's schedule for which TMDLs will be developed over the next two years, the TMDLs themselves are not part of the integrated report (or the Section 303(d) list), nor are they typically submitted with that report.

The timing provisions for Section 303(d) lists and for TMDLs are also distinct. The statute sets a deadline for the initial list of "waters identified" and the initial "loads established" based on when EPA first identifies relevant pollutants under Section 304(a)(2)(D) of the Act, but otherwise Section 303(d) lists and TMDLs are due "from time to time" under the statute. 33 U.S.C. § 1313(d)(2). EPA regulations require states to submit Section 303(d) lists every two years, but there is no similar regulatory deadline for states to submit additional TMDLs. 40 C.F.R. § 130.7(d)(1). Instead, TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." *Id.* There is no statutory or regulatory timeframe, deadline, or other restriction on

the timing for states to submit TMDLs, or for states and EPA to determine schedules.

Therefore, as explained by longstanding EPA guidance, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, at 63 (July 29, 2005) ("2006 Assessment Guidance"), available at https://www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf.[2] This guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57. EPA has also explained that "[i]n some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the

[2] The 2006 Assessment Guidance focuses on how to assess, categorize, and report on water quality attainment and supporting data and information. 2006 Assessment Guidance at 6. It does not address how to develop or submit TMDLs.

applicable standard is met)." *Id.*

Once a state submits a Section 303(d) list, or a TMDL, EPA must approve or disapprove the submission within 30 days. 33 U.S.C. § 1313(d)(2). If EPA disapproves a Section 303(d) list, EPA must identify the water quality limited segments that should be on the list, and must do so within 30 days after the date of disapproval. *Id.* EPA must then "promptly issue a public notice" and take comment on the water quality limited segments so identified. 40 C.F.R. § 130.7(d)(2). Finally, after considering the comments received, EPA must then make any appropriate revisions to the list. Similarly, if EPA disapproves a state TMDL, EPA must establish its own TMDL within 30 days after EPA's disapproval. *Id.*

If EPA approves a Section 303(d) list or disapproves a list and identifies waters for the state or approves or disapproves a TMDL that has been publicly noticed, those actions are final agency actions that an interested party may challenge under the Administrative Procedure Act. If EPA fails to act, an interested party can sue EPA for its failure to perform "any act or duty under this chapter which is not

discretionary with [EPA]." 33 U.S.C. § 1365(a)(2). However, no such action may be commenced "prior to sixty days after the plaintiff has given notice of such action to the Administrator [of EPA]." *Id.* § 1365(b)(2). EPA's regulations specify the form and content of the required notice. *See, e.g.*, 40 C.F.R. § 135.2(a)(3) (notice must be accomplished by certified mail and sent to specific recipients); 40 C.F.R. § 135.3(b) (notice must identify the statutory provision which requires the nondiscretionary action and describe with "reasonable specificity" the action taken or not taken).

B. Factual Background

Ohio submitted its 2016 integrated report (including its 2016 Section 303(d) list) on October 20, 2016. EPA approved Ohio's 2016 Section 303(d) list on May 19, 2017, but withdrew that approval on January 12, 2018. Ohio supplemented its 2016 Section 303(d) list on May 4, 2018, and EPA approved that amendment on May 10, 2018.

On June 1, 2018, Ohio submitted its 2018 integrated report (and 2018 Section 303(d) list), and on July 9, 2018, EPA approved Ohio's 2018 Section 303(d) list. In both the 2016 Section 303(d) list (as

amended and approved in May 2018) and the 2018 Section 303(d) list, Ohio listed as impaired three assessment units for the open waters of Lake Erie: the Western Basin, the Sandusky Bay area, and the Central Basin. These open water assessment units are in addition to several shoreline assessment units, including public drinking water supply intake zones, that are also identified in both reports as impaired.

ARGUMENT

Although leave to supplement a pleading "shall be freely given when justice so requires," a motion to supplement under Fed. R. Civ. P 15 should be denied if the amendment would be futile, *i.e.*, if the amendment "could not withstand a Rule 12(b)(6) motion to dismiss." *Riverview Health Institute LLC v. Medical Mutual of Ohio*, 601 F.3d 505, 520 (6th Cir. 2010) (internal citations and quotations omitted). Because neither of the proposed additional counts state a claim on which relief may be granted, the amendment would be futile and should be denied.

I. Both of Plaintiffs' Proposed New Counts Are Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Both of Plaintiffs' proposed counts fail to state a claim because

they challenge EPA's approval of Ohio's 2016 Section 303(d) list, but that list (and EPA's approval thereof) has been superseded by the 2018 list (and EPA's approval thereof). In *Blue Water Baltimore*, 266 F. Supp. 3d at 180-181, the court found that EPA's approval of a state's 2014 303(d) list superseded its approval of the preceding 2012 303(d) list, thus mooting plaintiffs' challenge to EPA's approval of the 2012 list. This Court should do the same, and hold that Ohio's 2018 Section 303(d) list, once approved by EPA, supersedes Ohio's 2016 list and moots Plaintiffs' challenges to EPA's approval of the 2016 list.

II. Plaintiffs' Proposed Count One Does Not Challenge a Final Agency Action Reviewable Under the APA.

As this Court has explained, to be "final," an agency action must mark the consummation of the agency's decisionmaking process and must determine rights or obligations from which legal consequences will flow. April 11, 2018, Order, Doc. 29, at 20-21.

EPA's approval of Ohio's 2016 Section 303(d) list, as amended, is certainly final agency action with respect to the actual listing of impaired waters, which is the subject of Plaintiffs' original complaint. However, EPA did not take any final agency action with respect to what

Plaintiffs now seek to challenge: Ohio's purported decision refusing to develop a TMDL for western Lake Erie. Contrary to Plaintiffs' arguments, there is no final agency action regarding that, for two reasons.

First, the factual predicate for Plaintiffs' argument is expressly contradicted by the one, and only, source of information on which Plaintiffs rely: Ohio's amended 2016 Section 303(d) list. Plaintiffs assert that "in that submission," *i.e.*, the amended 2016 Section 303(d) list, Ohio "refused to develop and establish a [TMDL] for the phosphorus pollution" in western Lake Erie. Pl. Mot. at 1. *See also* Pl. Mem. at 1 ("in the same submission," *i.e.*, the amended 2016 Section 303(d) list, "Ohio EPA stated that it would not develop a TMDL to address the harmful algal bloom problem.") *See also* proposed First Suppl. Compl. ¶ 18 (citing the amended 2016 list at 9, "Ohio EPA has flatly stated that it would not move forward with the development of a TMDL."); *id.* ¶ 77 (citing the amended 2016 list at 9, "Ohio EPA specifically indicated it would *not* develop a TMDL for western Lake Erie"); *id.* ¶¶ 92-93 ("in its May 4, 2018, submission," "Ohio EPA . . . has

definitively stated it will not develop a TMDL").

What Ohio EPA actually said is worth quoting in full:

> Given the complexity of the algae bloom problem, Ohio believes the best approach for solving the issues in western Lake Erie is through the collaborative process established under Annex 4 of the Great Lakes Water Quality Agreement and the Domestic Action Plans as they afford a holistic, multi-jurisdictional perspective that does not exist in a traditional TMDL process. If the current collaborative processes fail to restore the designated use attainment *we recognize that a TMDL or other approach allowed by the USEPA to address impaired waters under the CWA will ultimately be required.*

2016 Integrated Report Amendment at 9 (emphasis added).

This is not a situation where the Court must resolve an ambiguity or draw an inference. The only support offered for the key assertion underlying Plaintiffs' position in fact says the opposite of what Plaintiffs claim. Ohio has neither abandoned its obligation to produce a TMDL for western Lake Erie, nor has Ohio refused to develop a TMDL. Without this factual predicate of an express refusal to develop a TMDL, there can be no EPA action approving the alleged state refusal, as there is no refusal to approve or disapprove.

Second, even if the Court were to ignore Ohio's recognition that it might in the future develop a TMDL, and find Plaintiffs' assertion that

the lack of a current TMDL submission necessarily constitutes a refusal to do so, Plaintiffs' proposed count one is still futile because there was no final agency action regarding the purported "no TMDL" statement.

In its approval letter, EPA noted that the amended Section 303(d) list "discusses how Ohio will continue to address nutrient loadings to Lake Erie." Letter from Cathy Stepp, Regional Administrator, to Tiffani Kavalec, Chief, Division of Surface Water, Ohio EPA, May 10, 2018, at 1-2. But EPA's letter goes on to state that EPA finds that Ohio EPA's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking" under 40 C.F.R. § 130.7(b)(4). *Id.* at 2.

When EPA reviews a state's Section 303(d) list, the agency simply confirms that the state has included a priority ranking that, consistent with EPA's regulations, "tak[es] into account the severity of the pollution and uses to be made of such waters." 40 C.F.R. § 130.7(b)(4). *See* 2006 Assessment Guidance, at 63 ("EPA will review the priority ranking but will not take action to approve or disapprove it."). EPA does not weigh the relative merits of the state's ranking, and the

statute "provides no specific mechanism for reviewing this prioritization." *Sierra Club v. McLerran*, No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015). EPA's acknowledgement that Ohio did prioritize the impaired waters of Lake Erie (which Plaintiffs do not challenge) does not itself represent either the consummation of EPA's decisionmaking on whether Ohio has abandoned its obligation to produce a TMDL or represent a conclusion that determines rights or obligations or has legal consequences. In fact, Plaintiffs themselves note that EPA did not "even mention[] the State of Ohio's failure to comply with its TMDL responsibilities." Pl. Mem. at 2. Contrary to Plaintiffs' assertions, EPA's lack of reference to the absence of a submission that Ohio did not yet have any obligation to provide is not surprising. Instead, EPA simply recognized what Ohio EPA did: the state included the segments on its list of impaired waters impaired "still requiring TMDLs", 40 C.F.R. § 130.7(b)(2), and assigned a prioritization to the open waters of western Lake Erie.

Plaintiffs rely heavily on the *McLerran* case, arguing that it refutes Ohio's approach. But *McLerran* involved materially different

facts. Instead of a Section 303(d) list, in *McLerran* the state developed a draft TMDL, but finalized the document as a "Strategy" which involved the creation of a task force, and stated that it "is not currently planning to develop" a TMDL. 2015 WL 1188522 at *3. Sierra Club requested EPA to determine whether the state had abandoned the TMDL, and EPA concluded the state had not, and that the strategy and task force were "an acceptable alternative to a TMDL." *Id.* *4. The court agreed with EPA that the state had not abandoned the TMDL – a point to which we will return in the discussion of Plaintiffs' proposed count two – but found under the APA that EPA's approval of the task force was arbitrary. *Id.* *10. This separate approval document, issued in response to a specific request to determine whether a state had abandoned a specific TMDL, is materially different than the general statement at issue here, in the different context of EPA's approval of a Section 303(d) list of impaired waters. Unlike in *McLerran*, EPA's acknowledgement that Ohio's 303(d) list "discusses how Ohio will continue to address nutrient loadings to Lake Erie" is not an explicit decision on the precise question of abandonment, and is therefore not a

final agency action. The fact is that Ohio was not obligated to submit a TMDL simultaneously with its submission of its Section 303(d) list and thus EPA had no need to approve or reject that non-submission.

Because Plaintiffs cannot support their assertion that Ohio decided it will not develop any TMDL for western Lake Erie, and because EPA has not taken any final agency action regarding Ohio's statement that a TMDL "will ultimately be required," Plaintiffs' proposed count one fails to state a claim and allowing Plaintiffs to supplement the complaint would be futile.

III. Plaintiffs' Proposed Count Two Does Not Identify A Nondiscretionary Duty.

Plaintiffs' proposed count two asserts that EPA violated a nondiscretionary duty to act within 30 days because Ohio EPA allegedly decided "not to undertake development of a TMDL for western Lake Erie." Proposed Supplemental Compl. ¶ 103.

Plaintiffs' motion to add their proposed count two should be denied for their failure to follow the required process. As EPA has previously explained, such a claim requires 60-day statutory notice before filing suit, 33 U.S.C. § 1365(b)(2): this requirement cannot be

waived. Plaintiffs did not provide the requisite notice.

Even if Plaintiff had somehow satisfied that requirement, Plaintiffs' proposed count two still fails to state a claim. In their motion, Plaintiffs explain that they seek to include their proposed count two "as a protective measure" in the event that there is no final agency action "regarding Ohio EPA's decision not to submit a TMDL." Pl. Mem. at 11 n.1. Plaintiffs' proposed count two assumes no final agency action by EPA and is therefore based on the same faulty reading of Ohio's amended 2016 Section 303(d) list by assuming that a TMDL must be submitted with a 303(d) list.

Plaintiffs argue that some courts have found that a state's decision not to submit a TMDL is a "constructive submission" of "no TMDL," thereby triggering EPA's nondiscretionary duty to approve or disapprove of that "constructive submission." *See, e.g.*, Proposed Supplemental Compl. ¶ 104. For example, in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984), the court found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure may amount to the 'constructive submission' by that state of no TMDL's

[sic]." *Id.* The long passage of time – six years, in that case – "raises the possibility that the states have determined that TMDL's for Lake Michigan are unnecessary." *Id.* at 997.

Like *Scott*, most courts that have applied the constructive submission theory have looked at a state's entire TMDL program. *See, e.g., Ohio Valley Envir. Coal. v. Pruitt,* No. 17-1430, 2018 WL 3039954 (4th Cir., June 20, 2018) (in light of West Virginia's good faith efforts, "we cannot conclude that West Virginia has 'clearly and unambiguously' refused to submit TMDLs"). Plaintiffs do not assert that Ohio has failed to submit any TMDLs, but instead point to the only court decision that has considered whether a state could trigger a constructive submission by refusing to submit a single, particular TMDL: *McLerran*. That decision held that "a state's failure to prepare a particular TMDL [can] ripen into a constructive submission." 2015 WL 1188522 at *7. However, as noted above, *McLerran* found that the State of Washington had not constructively submitted no TMDL, because there were "information gaps . . . such that [the state] could not confidently issue a TMDL at any point in the near future." *Id.* at *8. In particular, the

court noted that the state "lacked sufficient scientific data and had not satisfied certain pre-submission requirements, *i.e.*, public notice and consultation." *Id.* In contrast, if a TMDL were "essentially complete and ready for submission, a last-minute pivot to an illusory alternative may indicate a decision to abandon the TMDL." *Id.*

Here, Ohio has only recently listed western Lake Erie as impaired, and Plaintiffs do not, and cannot, contend that Ohio has already developed the scientific data necessary for a TMDL, much less that Ohio has completed the required public notice requirements. Thus, even if the Court were to accept the constructive submission theory and the *McLerran* court's extension of that theory to a single TMDL, Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.

IV. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

As noted in Defendants' May 11, 2018, Status Report, Doc. 30 at 2, EPA's May 10, 2018, action approving Ohio's Section 2016 303(d) list, as amended, moots Plaintiffs' claims as pled in Plaintiffs' original complaint, to the extent the Court has jurisdiction over those claims.

See April 11, 2018, Order (Doc. 29) at 24 n.15 (citing *Anacostia Riverkeeper, Inc. v. Jackson*, 713 F. Supp.2d 50, 51 n.1 (D.D.C. 2010)). If the Court denies Plaintiffs' motion to supplement the complaint, nothing is left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should deny Plaintiffs' motion to file a supplemental complaint because neither of Plaintiffs' proposed supplemental counts state a claim upon which relief may be granted, and should grant Defendants' cross motion for summary judgment and terminate the case because EPA's approval of Ohio's amended 2016 Section 303(d) list moots Plaintiffs' original claims.

Respectfully submitted this 10th day of July 2018.

JEFFREY H. WOOD
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Environment & Natural Resources Division

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Attorneys for Defendants

CERTIFICATE OF SERVICE

I hereby certify that on July 10, 2018, I electronically filed the foregoing MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
Daniel R. Dertke

UNITED STATES DISTRICT COURT
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[1] *See also* April 11, 2018, Order, Doc. 29 at 8.

themselves. Thus, while an integrated report typically contains the Section 303(d) list, including a priority ranking of water quality limited segments still requiring TMDLs and the state's schedule for which TMDLs will be developed over the next two years, the TMDLs themselves are not part of the integrated report (or the Section 303(d) list), nor are they typically submitted with that report.

The timing provisions for Section 303(d) lists and for TMDLs are also distinct. The statute sets a deadline for the initial list of "waters identified" and the initial "loads established" based on when EPA first identifies relevant pollutants under Section 304(a)(2)(D) of the Act, but otherwise Section 303(d) lists and TMDLs are due "from time to time" under the statute. 33 U.S.C. § 1313(d)(2). EPA regulations require states to submit Section 303(d) lists every two years, but there is no similar regulatory deadline for states to submit additional TMDLs. 40 C.F.R. § 130.7(d)(1). Instead, TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." *Id.* There is no statutory or regulatory timeframe, deadline, or other restriction on

the timing for states to submit TMDLs, or for states and EPA to determine schedules.

Therefore, as explained by longstanding EPA guidance, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, at 63 (July 29, 2005) ("2006 Assessment Guidance"), available at https://www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf.[2] This guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57. EPA has also explained that "[i]n some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the

[2] The 2006 Assessment Guidance focuses on how to assess, categorize, and report on water quality attainment and supporting data and information. 2006 Assessment Guidance at 6. It does not address how to develop or submit TMDLs.

applicable standard is met)." *Id.*

Once a state submits a Section 303(d) list, or a TMDL, EPA must approve or disapprove the submission within 30 days. 33 U.S.C. § 1313(d)(2). If EPA disapproves a Section 303(d) list, EPA must identify the water quality limited segments that should be on the list, and must do so within 30 days after the date of disapproval. *Id.* EPA must then "promptly issue a public notice" and take comment on the water quality limited segments so identified. 40 C.F.R. § 130.7(d)(2). Finally, after considering the comments received, EPA must then make any appropriate revisions to the list. Similarly, if EPA disapproves a state TMDL, EPA must establish its own TMDL within 30 days after EPA's disapproval. *Id.*

If EPA approves a Section 303(d) list or disapproves a list and identifies waters for the state or approves or disapproves a TMDL that has been publicly noticed, those actions are final agency actions that an interested party may challenge under the Administrative Procedure Act. If EPA fails to act, an interested party can sue EPA for its failure to perform "any act or duty under this chapter which is not

discretionary with [EPA]." 33 U.S.C. § 1365(a)(2). However, no such action may be commenced "prior to sixty days after the plaintiff has given notice of such action to the Administrator [of EPA]." *Id.* § 1365(b)(2). EPA's regulations specify the form and content of the required notice. *See, e.g.*, 40 C.F.R. § 135.2(a)(3) (notice must be accomplished by certified mail and sent to specific recipients); 40 C.F.R. § 135.3(b) (notice must identify the statutory provision which requires the nondiscretionary action and describe with "reasonable specificity" the action taken or not taken).

B. Factual Background

Ohio submitted its 2016 integrated report (including its 2016 Section 303(d) list) on October 20, 2016. EPA approved Ohio's 2016 Section 303(d) list on May 19, 2017, but withdrew that approval on January 12, 2018. Ohio supplemented its 2016 Section 303(d) list on May 4, 2018, and EPA approved that amendment on May 10, 2018.

On June 1, 2018, Ohio submitted its 2018 integrated report (and 2018 Section 303(d) list), and on July 9, 2018, EPA approved Ohio's 2018 Section 303(d) list. In both the 2016 Section 303(d) list (as

amended and approved in May 2018) and the 2018 Section 303(d) list, Ohio listed as impaired three assessment units for the open waters of Lake Erie: the Western Basin, the Sandusky Bay area, and the Central Basin. These open water assessment units are in addition to several shoreline assessment units, including public drinking water supply intake zones, that are also identified in both reports as impaired.

ARGUMENT

Although leave to supplement a pleading "shall be freely given when justice so requires," a motion to supplement under Fed. R. Civ. P 15 should be denied if the amendment would be futile, *i.e.*, if the amendment "could not withstand a Rule 12(b)(6) motion to dismiss." *Riverview Health Institute LLC v. Medical Mutual of Ohio*, 601 F.3d 505, 520 (6th Cir. 2010) (internal citations and quotations omitted). Because neither of the proposed additional counts state a claim on which relief may be granted, the amendment would be futile and should be denied.

I. Both of Plaintiffs' Proposed New Counts Are Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Both of Plaintiffs' proposed counts fail to state a claim because

they challenge EPA's approval of Ohio's 2016 Section 303(d) list, but that list (and EPA's approval thereof) has been superseded by the 2018 list (and EPA's approval thereof). In *Blue Water Baltimore*, 266 F. Supp. 3d at 180-181, the court found that EPA's approval of a state's 2014 303(d) list superseded its approval of the preceding 2012 303(d) list, thus mooting plaintiffs' challenge to EPA's approval of the 2012 list. This Court should do the same, and hold that Ohio's 2018 Section 303(d) list, once approved by EPA, supersedes Ohio's 2016 list and moots Plaintiffs' challenges to EPA's approval of the 2016 list.

II. Plaintiffs' Proposed Count One Does Not Challenge a Final Agency Action Reviewable Under the APA.

As this Court has explained, to be "final," an agency action must mark the consummation of the agency's decisionmaking process and must determine rights or obligations from which legal consequences will flow. April 11, 2018, Order, Doc. 29, at 20-21.

EPA's approval of Ohio's 2016 Section 303(d) list, as amended, is certainly final agency action with respect to the actual listing of impaired waters, which is the subject of Plaintiffs' original complaint. However, EPA did not take any final agency action with respect to what

Plaintiffs now seek to challenge: Ohio's purported decision refusing to develop a TMDL for western Lake Erie. Contrary to Plaintiffs' arguments, there is no final agency action regarding that, for two reasons.

First, the factual predicate for Plaintiffs' argument is expressly contradicted by the one, and only, source of information on which Plaintiffs rely: Ohio's amended 2016 Section 303(d) list. Plaintiffs assert that "in that submission," *i.e.*, the amended 2016 Section 303(d) list, Ohio "refused to develop and establish a [TMDL] for the phosphorus pollution" in western Lake Erie. Pl. Mot. at 1. *See also* Pl. Mem. at 1 ("in the same submission," *i.e.*, the amended 2016 Section 303(d) list, "Ohio EPA stated that it would not develop a TMDL to address the harmful algal bloom problem.") *See also* proposed First Suppl. Compl. ¶ 18 (citing the amended 2016 list at 9, "Ohio EPA has flatly stated that it would not move forward with the development of a TMDL."); *id.* ¶ 77 (citing the amended 2016 list at 9, "Ohio EPA specifically indicated it would *not* develop a TMDL for western Lake Erie"); *id.* ¶¶ 92-93 ("in its May 4, 2018, submission," "Ohio EPA . . . has

definitively stated it will not develop a TMDL").

What Ohio EPA actually said is worth quoting in full:

> Given the complexity of the algae bloom problem, Ohio believes the best approach for solving the issues in western Lake Erie is through the collaborative process established under Annex 4 of the Great Lakes Water Quality Agreement and the Domestic Action Plans as they afford a holistic, multi-jurisdictional perspective that does not exist in a traditional TMDL process. If the current collaborative processes fail to restore the designated use attainment *we recognize that a TMDL or other approach allowed by the USEPA to address impaired waters under the CWA will ultimately be required.*

2016 Integrated Report Amendment at 9 (emphasis added).

This is not a situation where the Court must resolve an ambiguity or draw an inference. The only support offered for the key assertion underlying Plaintiffs' position in fact says the opposite of what Plaintiffs claim. Ohio has neither abandoned its obligation to produce a TMDL for western Lake Erie, nor has Ohio refused to develop a TMDL. Without this factual predicate of an express refusal to develop a TMDL, there can be no EPA action approving the alleged state refusal, as there is no refusal to approve or disapprove.

Second, even if the Court were to ignore Ohio's recognition that it might in the future develop a TMDL, and find Plaintiffs' assertion that

the lack of a current TMDL submission necessarily constitutes a refusal to do so, Plaintiffs' proposed count one is still futile because there was no final agency action regarding the purported "no TMDL" statement.

In its approval letter, EPA noted that the amended Section 303(d) list "discusses how Ohio will continue to address nutrient loadings to Lake Erie." Letter from Cathy Stepp, Regional Administrator, to Tiffani Kavalec, Chief, Division of Surface Water, Ohio EPA, May 10, 2018, at 1-2. But EPA's letter goes on to state that EPA finds that Ohio EPA's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking" under 40 C.F.R. § 130.7(b)(4). *Id.* at 2.

When EPA reviews a state's Section 303(d) list, the agency simply confirms that the state has included a priority ranking that, consistent with EPA's regulations, "tak[es] into account the severity of the pollution and uses to be made of such waters." 40 C.F.R. § 130.7(b)(4). *See* 2006 Assessment Guidance, at 63 ("EPA will review the priority ranking but will not take action to approve or disapprove it."). EPA does not weigh the relative merits of the state's ranking, and the

statute "provides no specific mechanism for reviewing this prioritization." *Sierra Club v. McLerran*, No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015). EPA's acknowledgement that Ohio did prioritize the impaired waters of Lake Erie (which Plaintiffs do not challenge) does not itself represent either the consummation of EPA's decisionmaking on whether Ohio has abandoned its obligation to produce a TMDL or represent a conclusion that determines rights or obligations or has legal consequences. In fact, Plaintiffs themselves note that EPA did not "even mention[] the State of Ohio's failure to comply with its TMDL responsibilities." Pl. Mem. at 2. Contrary to Plaintiffs' assertions, EPA's lack of reference to the absence of a submission that Ohio did not yet have any obligation to provide is not surprising. Instead, EPA simply recognized what Ohio EPA did: the state included the segments on its list of impaired waters impaired "still requiring TMDLs", 40 C.F.R. § 130.7(b)(2), and assigned a prioritization to the open waters of western Lake Erie.

Plaintiffs rely heavily on the *McLerran* case, arguing that it refutes Ohio's approach. But *McLerran* involved materially different

facts. Instead of a Section 303(d) list, in *McLerran* the state developed a draft TMDL, but finalized the document as a "Strategy" which involved the creation of a task force, and stated that it "is not currently planning to develop" a TMDL. 2015 WL 1188522 at *3. Sierra Club requested EPA to determine whether the state had abandoned the TMDL, and EPA concluded the state had not, and that the strategy and task force were "an acceptable alternative to a TMDL." *Id.* *4. The court agreed with EPA that the state had not abandoned the TMDL – a point to which we will return in the discussion of Plaintiffs' proposed count two – but found under the APA that EPA's approval of the task force was arbitrary. *Id.* *10. This separate approval document, issued in response to a specific request to determine whether a state had abandoned a specific TMDL, is materially different than the general statement at issue here, in the different context of EPA's approval of a Section 303(d) list of impaired waters. Unlike in *McLerran*, EPA's acknowledgement that Ohio's 303(d) list "discusses how Ohio will continue to address nutrient loadings to Lake Erie" is not an explicit decision on the precise question of abandonment, and is therefore not a

final agency action. The fact is that Ohio was not obligated to submit a TMDL simultaneously with its submission of its Section 303(d) list and thus EPA had no need to approve or reject that non-submission.

Because Plaintiffs cannot support their assertion that Ohio decided it will not develop any TMDL for western Lake Erie, and because EPA has not taken any final agency action regarding Ohio's statement that a TMDL "will ultimately be required," Plaintiffs' proposed count one fails to state a claim and allowing Plaintiffs to supplement the complaint would be futile.

III. Plaintiffs' Proposed Count Two Does Not Identify A Nondiscretionary Duty.

Plaintiffs' proposed count two asserts that EPA violated a nondiscretionary duty to act within 30 days because Ohio EPA allegedly decided "not to undertake development of a TMDL for western Lake Erie." Proposed Supplemental Compl. ¶ 103.

Plaintiffs' motion to add their proposed count two should be denied for their failure to follow the required process. As EPA has previously explained, such a claim requires 60-day statutory notice before filing suit, 33 U.S.C. § 1365(b)(2): this requirement cannot be

waived. Plaintiffs did not provide the requisite notice.

Even if Plaintiff had somehow satisfied that requirement, Plaintiffs' proposed count two still fails to state a claim. In their motion, Plaintiffs explain that they seek to include their proposed count two "as a protective measure" in the event that there is no final agency action "regarding Ohio EPA's decision not to submit a TMDL." Pl. Mem. at 11 n.1. Plaintiffs' proposed count two assumes no final agency action by EPA and is therefore based on the same faulty reading of Ohio's amended 2016 Section 303(d) list by assuming that a TMDL must be submitted with a 303(d) list.

Plaintiffs argue that some courts have found that a state's decision not to submit a TMDL is a "constructive submission" of "no TMDL," thereby triggering EPA's nondiscretionary duty to approve or disapprove of that "constructive submission." *See, e.g.*, Proposed Supplemental Compl. ¶ 104. For example, in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984), the court found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure may amount to the 'constructive submission' by that state of no TMDL's

[sic]." *Id.* The long passage of time – six years, in that case – "raises the possibility that the states have determined that TMDL's for Lake Michigan are unnecessary." *Id.* at 997.

Like *Scott*, most courts that have applied the constructive submission theory have looked at a state's entire TMDL program. *See, e.g., Ohio Valley Envir. Coal. v. Pruitt,* No. 17-1430, 2018 WL 3039954 (4th Cir., June 20, 2018) (in light of West Virginia's good faith efforts, "we cannot conclude that West Virginia has 'clearly and unambiguously' refused to submit TMDLs"). Plaintiffs do not assert that Ohio has failed to submit any TMDLs, but instead point to the only court decision that has considered whether a state could trigger a constructive submission by refusing to submit a single, particular TMDL: *McLerran*. That decision held that "a state's failure to prepare a particular TMDL [can] ripen into a constructive submission." 2015 WL 1188522 at *7. However, as noted above, *McLerran* found that the State of Washington had not constructively submitted no TMDL, because there were "information gaps . . . such that [the state] could not confidently issue a TMDL at any point in the near future." *Id.* at *8. In particular, the

court noted that the state "lacked sufficient scientific data and had not satisfied certain pre-submission requirements, *i.e.*, public notice and consultation." *Id.* In contrast, if a TMDL were "essentially complete and ready for submission, a last-minute pivot to an illusory alternative may indicate a decision to abandon the TMDL." *Id.*

Here, Ohio has only recently listed western Lake Erie as impaired, and Plaintiffs do not, and cannot, contend that Ohio has already developed the scientific data necessary for a TMDL, much less that Ohio has completed the required public notice requirements. Thus, even if the Court were to accept the constructive submission theory and the *McLerran* court's extension of that theory to a single TMDL, Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.

IV. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

As noted in Defendants' May 11, 2018, Status Report, Doc. 30 at 2, EPA's May 10, 2018, action approving Ohio's Section 2016 303(d) list, as amended, moots Plaintiffs' claims as pled in Plaintiffs' original complaint, to the extent the Court has jurisdiction over those claims.

See April 11, 2018, Order (Doc. 29) at 24 n.15 (citing *Anacostia Riverkeeper, Inc. v. Jackson*, 713 F. Supp.2d 50, 51 n.1 (D.D.C. 2010)). If the Court denies Plaintiffs' motion to supplement the complaint, nothing is left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should deny Plaintiffs' motion to file a supplemental complaint because neither of Plaintiffs' proposed supplemental counts state a claim upon which relief may be granted, and should grant Defendants' cross motion for summary judgment and terminate the case because EPA's approval of Ohio's amended 2016 Section 303(d) list moots Plaintiffs' original claims.

Respectfully submitted this 10th day of July 2018.

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CERTIFICATE OF SERVICE

I hereby certify that on July 10, 2018, I electronically filed the foregoing MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
Daniel R. Dertke

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

TABLE OF CONTENTS

TABLE OF AUTHORITIES ii

INTRODUCTION AND SUMMARY 1

BACKGROUND 2

ARGUMENT 5

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie 5

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act On Ohio's Plans To Address Nutrient Pollution in Lake Erie 12

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List 13

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie 16

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment 19

CONCLUSION 20

TABLE OF AUTHORITIES

CASES

Blue Water Baltimore v. Pruitt,
266 F. Supp. 3d 174, 180-81 (D.D.C. 2017),
judgment amended, 293 F. Supp. 3d 1 (D.D.C. 2017) 14

Ohio Valley Envtl. Coalition, Inc. v. Pruitt,
893 F.3d 225 (4th Cir. 2018) 5, 6, 7

San Francisco Baykeeper v. Whitman,
297 F.3d 877 (9th Cir. 2002) 6, 11

Scott v. Hammond,
741 F.2d 992 (7th Cir. 1984) 6, 7, 11, 12

Sierra Club v. McLerran,
No. 11-cv-1759, 2015 WL 1188522
(W.D. Wash., March 16, 2015) 7, 8, 9, 10, 17, 18

STATUTES

33 U.S.C. § 1313(d)(2) 3, 6

33 U.S.C. § 1314(a)(2)(D) 3

CODE OF FEDERAL REGULATIONS

40 C.F.R. § 130.7(b)(4) 4, 17

40 C.F.R. § 130.7(d)(1) 3

FEDERAL REGISTER

57 Fed. Reg. 33,040 (July 24, 1992) 5

LEGISLATIVE HISTORY

H. R. Rep. No. 92-911 (1972) 4

INTRODUCTION AND SUMMARY

The two motions before the Court essentially ask whether Ohio has made a "constructive submission" of no TMDL for nutrient pollution in the open waters of western Lake Erie. Plaintiffs' two new proposed claims assert that Ohio has not yet begun a TMDL for the lake's open waters, but Plaintiffs have not and cannot credibly assert that Ohio has clearly and unambiguously refused to ***ever*** prepare such a TMDL, and that makes all the difference. Ohio has not refused to prepare a TMDL for the western basin of Lake Erie and indeed expressly recognizes that a TMDL is needed and may be developed in the future. Therefore, even under the most expansive expressions of the so-called constructive submission theory articulated in *McLerran* and the other cases Plaintiffs cite, Plaintiffs' proposed Count Two fails to assert the facts necessary to state a claim that Ohio has constructively submitted no TMDL.

Plaintiffs also assert that when EPA approved Ohio's 2016 Section 303(d) list of impaired waters, EPA also approved certain statements Ohio made in its 2016 Integrated Report. Although EPA certainly

acknowledged Ohio's statements regarding the State's plans to address nutrient pollution in the lake's open waters, EPA neither approved nor disapproved them. Instead, EPA followed its regulations, which require EPA to approve or disapprove of the actual list of impaired waters still requiring TMDLs and the inclusion of priority rankings, *i.e.*, Ohio's Section 303(d) list. EPA has no formal role in reviewing the other parts of a state's Integrated Report. Plaintiffs' proposed Count One therefore fails to state a claim because Plaintiffs cannot point to any judicially reviewable final agency action regarding Ohio's plans to reduce nutrient pollution.

Finally, even if the Court finds that EPA did take final agency action regarding Ohio's plans, EPA's approval of Ohio's 2018 Section 303(d) list supersedes its approval of Ohio's 2016 list, which moots Plaintiffs' claim.

BACKGROUND

As we explained in our opening memorandum, ECF No. 39, the CWA sets a deadline for states to submit their initial TMDLs and Section 303(d) lists based on when EPA first identifies relevant

pollutants under 33 U.S.C. § 1314(a)(2)(D). After that, the statute requires states to submit subsequent Section 303(d) lists and TMDLs "from time to time." 33 U.S.C. § 1313(d)(2). While EPA's regulations specify that states must submit Section 303(d) lists every two years, *see* 40 C.F.R. § 130.7(d)(1), there is no similar regulatory requirement for TMDLs. Nor is there any requirement for states to submit additional TMDLs with their Section 303(d) list or as part of an integrated report. Instead, EPA's regulations simply provide that TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." 40 C.F.R. § 130.7(d)(1). Thus, there is no firm statutory or regulatory timeframe, deadline, or other restriction on the timing for states to submit TMDLs.

Nor is there any requirement for a state to begin work on a TMDL as soon as a water quality limited segment is listed as impaired. Plaintiffs argue that because Ohio has not yet started work on a nutrient TMDL, Ohio is not complying with a statutory requirement "to promulgate a [TMDL]." Pl. Combined Memo (ECF No. 40) at 1; *see also*

id. at 3 (asserting Ohio's "refusal to begin the TMDL process" is "illegal"). But in assembling their Section 303(d) lists, states must identify "waters targeted for TMDL development in the next two years," which allows waters to remain on a state's list for *more* than 2 years before waters are "targeted for TMDLs development." 40 C.F.R. § 130.7(b)(4). And as explained by longstanding EPA guidance interpreting the statutory and regulatory framework, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* at 63 (July 29, 2005) ("2006 Assessment Guidance") (relevant excerpts attached as Exhibit 1).

There is good reason for this flexibility because, as Congress understood when it enacted the TMDL program into law, "it is extremely difficult to apportion the discharge load from all point sources along a waterway or section of a waterway." H. R. Rep. No. 92-911, at 105-06 (1972). This is especially true of "'complex' TMDLs that may cover a large watershed or address particularly challenging pollution

problems," as opposed to comparatively "routine or 'simple' TMDLs that may be developed as part of an NPDES permit reissuance." Surface Water Toxics Control Program and Water Quality Planning and Management Program, 57 Fed. Reg. 33,040, 33,044 (July 24, 1992). For those TMDLs that require "complex analysis," it is appropriate to "allow time to collect necessary information and complete the analysis." 2006 Assessment Guidance at 63; *see also Ohio Valley Envtl. Coalition, Inc. v. Pruitt*, 893 F.3d 225, 231 n.4 (4th Cir. 2018) ("TMDLs may require substantial time and resources to develop."). The same guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57.

ARGUMENT

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie.

Plaintiffs repeatedly argue that Ohio has refused to begin the TMDL process for the open waters of western Lake Erie. *See, e.g.*, Pl. Combined Memo at 2, 3, 4, 5, 6. But, as explained below, the relevant legal question is whether Ohio has "'clearly and unambiguously'"

indicate[d] that it will not 'submit any TMDLs and has no plans to remedy this situation.'" *Ohio Valley Envir. Coal.,* 893 F.3d at 230 (quoting *S.F. Baykeeper v. Whitman*, 297 F.3d 877, 882 (9th Cir. 2002)). Plaintiffs have not and cannot point to any statement, action, or inaction by Ohio that clearly and unambiguously shows that Ohio will never prepare a TMDL for nutrient pollution in the open waters of western Lake Erie.

Plaintiffs rely on the constructive submission theory, which began in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984). In *Scott*, the State of Illinois had failed to submit any TMDLs, not even the initial ones for which the CWA does impose a deadline. However, the CWA does not provide a cause of action to sue a state if a state fails to submit a TMDL, so the plaintiffs in *Scott* sued EPA. EPA argued that once a state submits a TMDL, EPA must approve or disapprove the submission within 30 days, under 33 U.S.C. § 1313(d)(2), but if a state does not submit anything, EPA has no statutory duty to act. 741 F.2d. at 997-98. The Seventh Circuit found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure

. . . raises the possibility that the states have determined that [TMDLs] . . . are unnecessary." *Id.* at 997.

Almost every court which has adopted the legal fiction of a constructive submission has examined whether a state has abdicated its TMDL program statewide. *See Ohio Valley Envir. Coal.,* 893 F.3d at 229-30 (collecting cases). In a recent decision, the Fourth Circuit Court of Appeals reviewed the constructive submission caselaw and observed that courts "have declined to find a 'constructive submission' of no TMDLs where a state (1) has produced at least some TMDLs and (2) has a credible plan in place to produce others." *Id.* Plaintiffs do not, and cannot, allege that Ohio has failed either of those prongs, let alone both of them.

Plaintiffs instead argue that Ohio has constructively refused to submit a particular TMDL. Only one court, *Sierra Club v. McLerran,* No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015), has indicated that a state like Ohio, with an otherwise robust TMDL program, can nonetheless trigger a constructive submission. No court in this Circuit has adopted the constructive submission theory, much

less *McLerran*'s unprecedented extension of it, and the Court should not do so now. But even if the Court were to adopt the theory, and to take the additional step of following *McLerran*, not even that case supports Plaintiffs' attempt to state a constructive submission claim.

In *McLerran*, the court considered a citizen suit to compel EPA to disapprove the State of Washington's alleged constructive submission of no TMDLs for PCBs in the Spokane River. Although the court went beyond the constructive submission theory as articulated by the Fourth and Seventh Circuits, and other courts, to conclude there could be a constructive submission of no TMDL when a state "clearly and unambiguously indicate[s] that it will not produce a particular TMDL," the court actually held that such a situation had not occurred, even though the Spokane River was first listed for PCBs in 1996. *Id.* at *2, 7-9. In the court's view, where "information gaps persisted such that [the state] could not confidently issue a TMDL at any point in the near future, adopting an alternative may, under some circumstances, represent a reasonable interim measure rather than an abandonment of any future plans to prepare a TMDL." *Id.* at *8.

Assuming for the sake of argument that the Court agrees with *McLerran*'s view of the constructive submission theory, Plaintiffs have not alleged the specific facts necessary to meet *McLerran*'s standard. Ohio's 2018 Integrated Report explains "why a TMDL is not being pursued *immediately*," Ohio 2018 Integrated Water Quality Monitoring and Assessment Report ("2018 Integrated Report") (relevant excerpts attached as Exhibit 2) at D-31 (emphasis added). Ohio also lists most of the lake's assessment units as "Impaired, needs TMDL." *Id.* at J-16. As in *McLerran*, the State has not "abandon[ed] any future plans" to produce a TMDL for the open waters and Plaintiffs have alleged no specific facts to the contrary.

Plaintiffs also claim that Ohio is merely giving "lip service to the idea that it may establish a TMDL at some undetermined future time," Pl. Combined Memo at 1, but Plaintiffs have absolutely no support for that statement, and certainly nothing to show that the State has "clearly and unambiguously *abandoned* its obligation to produce a TMDL." *McLerran*, 2015 WL 1188522, at *7 (emphasis in original). Ohio's 2018 Integrated Report explains in detail the efforts Ohio is

making to address nutrients in Lake Erie. 2018 Integrated Report at J-10. These efforts include the Great Lakes Water Quality Agreement, the Lake Erie Collaborative Agreement, Ohio's Domestic Action Plan for Lake Erie, TMDLs for 22 of the 32 watersheds that feed into the lake, and numerous other nutrient reduction efforts. *Id.* at J-10 to J-15. Plaintiffs have identified nothing in the Clean Water Act that would strip Ohio of its "considerable flexibility" to pursue these nutrient pollution control efforts before developing a TMDL for the western basin of Lake Erie.

Plaintiffs dismiss these efforts out of hand, as simply a means of indefinitely delaying a TMDL, again relying on *McLerran*. Pl. Combined Memo at 1. But *McLerran* cannot save Plaintiffs' constructive submission claim, for two reasons. First, as just explained, the court in *McLerran* found that the State of Washington's exploration of an alternative to a TMDL did *not* amount to a constructive submission of no TMDL. Second, the waterbody in *McLerran* had been on the state's Section 303(d) list for 19 years. 2015 WL 1188522 *10. Here, in contrast, the open waters were first listed this year. While

Plaintiffs may argue that the lake's open waters should have been listed in 2016, they cannot dispute that the obligation to develop a TMDL cannot precede a waterbody's listing as impaired.

If Plaintiffs are allowed to state a claim for a constructive submission by alleging that Ohio has not begun work on a TMDL less than a year after the lake's open waters were listed, the constructive submission theory would be stretched far beyond what any judicial decision, including *McLerran*, has held. It would amount to a rule that a state must begin developing a TMDL as soon as a waterbody is listed. That would upend the states' statutory prioritization process and would go beyond anything that the CWA, EPA's regulations, or the caselaw requires. *Cf. San Francisco Baykeeper v. Whitman*, 297 F.3d 877, 885 (9th Cir. 2002) (Section 303(d) contains no "requirement of simultaneous submission of the list of polluted waters with the TMDL to correct each polluted water"). Such a holding would also effectively place Ohio's water quality program under a proxy conservatorship, something that no court has endorsed, which is precisely why the constructive submission theory has always been predicated on a state's "fail[ure]

over a long period of time to submit" TMDLs required by law. *Scott*, 741 F.2d at 996 (emphasis added).

Instead, Plaintiffs' motion to add their proposed Count Two should be denied because Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.[1]

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

In order for Plaintiffs' proposed Count One to state a claim, Plaintiffs must allege a judicially reviewable final agency action. Plaintiffs argue that the statements Ohio made in its 2016 Integrated Report regarding the State's plans to address nutrient pollution in Lake

[1] Plaintiffs' proposed Count Two suffers from the additional flaw that it only asserts that Ohio's 2016 section 303(d) list is a constructive submission of no TMDL. First Suppl. Compl. ¶¶ 103-104; Pl. Combined Memo at 2, 4, 5. In Argument II we explain why EPA's approval of the 2016 list is not a final agency action with respect to Ohio's nutrient pollution reduction plans and why EPA's approval of Ohio's 2016 list is moot, but a constructive submission argument depends on Ohio's intent, and that should be evaluated based on Ohio's most current statements. In other words, proposed Count Two also fails to state a claim because it fails to assert Ohio's *present* intentions regarding a TMDL for the open waters of western Lake Erie.

Erie amount to a constructive submission for EPA to approve or disapprove, separate and apart from Ohio's 2016 Section 303(d) list of impaired waters. Pl. Combined Memo at 9. Plaintiffs also argue that EPA in fact approved those statements when EPA approved the 2016 list. *Id.*

Plaintiffs' argument presents two problems. First, EPA's approval of Ohio's 2016 list is moot, so if EPA took any reviewable final agency action regarding a constructive submission (which it has not), that final agency action could only be EPA's approval of the 2018 list. Second, even if EPA's approval of the 2016 list is not moot, Ohio's statements regarding its plans to address nutrient pollution in Lake Erie are not a constructive submission of no TMDL, and EPA did not take any final agency action regarding Ohio's statements.

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Like Count Two, Plaintiffs' proposed Count One challenges EPA's approval of Ohio's 2016 Section 303(d) list. Plaintiffs argue that even though EPA has now approved a 2018 list, EPA's approval of the 2016 list is not moot because it is an action that is capable of repetition yet

evading review. Pl. Combined Memo at 7-8. Plaintiffs downplay the mootness argument as a "flurry of procedural claims that amount to nothing," *id.* at 6, but mootness is an essential question of subject matter jurisdiction that a court cannot simply waive aside.

Plaintiffs' challenge to EPA's approval of the 2016 list is moot. *See Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174, 180-81 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017). The plaintiffs in *Blue Water* sought to challenge "the reclassifications in [a] 2012" report, but EPA addressed those reclassifications in "both the 2012 and 2014" reports. 266 F. Supp. 3d at 180-81; *see also id.* (the 2014 report "reiterated the rationale stated in the 2012 [report] regarding the reclassification and de-listings at issue"). The court held that "a decision may be superseded by a subsequent decision based on the same rationale because the subsequent decision replaces the prior decision, rendering it void." *Id.* Just as the 2014 report in *Blue Water* "replace[d] the previous list," *id.*, Ohio's 2018 list replaced its 2016 list, so the 2016 list has "no further legal effect." *Id.*[2] The Court cannot

[2] Plaintiffs add in a footnote that the Court could allow them to amend

order any effective relief with respect to the 2016 list.

Plaintiffs assert that they satisfy the capable of repetition yet evading review exception to mootness. They argue that any legal defect in EPA's approval of the 2016 list is capable of repetition because the approval of the 2018 list "merely duplicates" EPA's prior approval, and that it evades review because it is too short in its duration to litigate. Pl. Combined Memo at 6, 8.

But any reading of Ohio's 2016 submission and EPA's 2016 approval to suggest that Ohio constructively submitted no TMDL by expressly disclaiming any responsibility to develop one, is resoundingly refuted by the 2018 Integrated Report and EPA's 2018 approval. The sole support for Plaintiffs' constructive submission claim – statements taken out of context from Ohio's 2016 Integrated Report and misconstrued as definitive statements that Ohio will never develop a TMDL for the western basin of Lake Erie – are *not* repeated in the 2018

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proposed Count One to address EPA's approval of the 2018 list, as the *Blue Water* court did, Pl. Combined Memo at 9 n.2. EPA agrees that this would resolve any mootness concerns, but that amendment would be futile. As we explain below, when EPA approved Ohio's 2018 list EPA took no action on Ohio's future TMDL plans, so Plaintiffs fail to identify a reviewable final agency action regarding either approval.

Integrated Report. Indeed, as noted *supra* at 9, the 2018 Integrated Report classifies all of the Lake Erie assessment units as "Impaired, needs TMDL." 2018 Integrated Report at J-16. Ohio also wrote that where the nutrient reductions from TMDLs in tributaries to Lake Erie "are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps." *Id.* at J-12. And EPA stated in its 2018 Approval that it "expects that under those circumstances [*i.e.*, the inadequacy of Ohio's current nutrient pollution reduction plans] such 'next steps' *would* include TMDL development for the Lake Erie Assessment Units directly." 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) ("EPA 2018 Approval") (ECF No. 40-1, attached as Exhibit A to Pl. Combined Memo), at 18 (emphasis added); *see also* 2018 Integrated Report at D-31 (recognizing that if the water quality in the western basin fails to improve, "a TMDL may ultimately be required").

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

Even if EPA's approval of Ohio's 2016 list were not moot, EPA's

statements regarding Ohio's plans do not amount to final agency action on whether Ohio constructively submitted no TMDL. Instead, EPA's approval is final agency action on exactly what it purports to be: the State's section 303(d) list of impaired waters, no more, no less.

Plaintiffs point out that EPA made a finding that Ohio's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking." Pl. Combined Memo at 10. As we noted in our opening memo, EPA simply confirms that the state has included a priority ranking that "tak[es] into account the severity of the pollution and uses to be made of such waters." 40 C.F.R. § 130.7(b)(4). EPA does not actually approve the ranking, much less Ohio's "discussion of its prioritization." *See* 2006 Assessment Guidance at 63 ("EPA will review the priority ranking but will not take action to approve or disapprove it."); *McLerran*, 2015 WL 1188522 at *6 (there is "no specific mechanism for reviewing [a state's] prioritization").

Plaintiffs also point to EPA's "blanket determination" that Ohio's 2016 list met the statutory and regulatory requirements. Pl. Combined Memo at 10. Plaintiffs argue that *McLerran* is analogous and refutes

Ohio's "flawed" approach. *id.* at 11, but Plaintiffs skip an essential step: in *McLerran* there was no question that EPA had taken final agency action on whether the state had made a constructive submission. The court in *McLerran* reviewed a separate approval document, issued outside the regular Section 303(d) review process and in response to a specific request to determine whether a state had abandoned a specific TMDL, in which EPA made the explicit conclusion that the state's strategy and task force were "an acceptable alternative to a TMDL." 2015 WL 1188522 at *4. This is materially different than the general statement at issue here, in the context of an Integrated Report. Unlike in *McLerran*, there is no final agency action on whether Ohio has abandoned a TMDL for the open waters of western Lake Erie, and without a final agency action, Count One fails to state a claim.

Plaintiffs raise the possibility of supplementing their complaint with yet a different count, addressing EPA's approval of Ohio's 2018 list, Pl. Combined Memo at 9 n.2, but that would also be futile. *See supra* n.2. In EPA's approval of Ohio's 2018 list, EPA noted Ohio's acknowledgment that TMDLs are required for any assessment units

that are listed as impaired. EPA 2018 Approval at 18. EPA's approval also explains that removing a segment from the Section 303(d) list may be warranted in some cases. For example, a TMDL would not be required if Ohio's efforts "result in the attainment of water quality standards prior to the development of a TMDL." *Id.* However, the substance of EPA's action was, like in 2016, an approval of Ohio's actual Section 303(d) list of impaired waters and its inclusion of a priority ranking of those waters, not an approval of the State's nutrient pollution reduction efforts as an alternative to a TMDL. *Id.* at 20.

Plaintiffs' proposed Count One therefore fails to state a claim, whether Plaintiffs plead Count One as a challenge to EPA's approval of Ohio's 2016 list or as a challenge to EPA's approval of Ohio's 2018 list.

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

Because Plaintiffs' two new proposed claims both fail to state a claim, and because EPA's approval of Ohio's 2016 Section 303(d) list, as amended, mooted Plaintiffs' claim that Ohio failed to list the open waters of western Lake Erie as impaired, there is nothing left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should grant Defendants' cross motion for summary judgment.

Respectfully submitted this 6th day of August 2018.

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CERTIFICATE OF SERVICE

I hereby certify that on August 6, 2018, I electronically filed the foregoing REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
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Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act

July 29, 2005

Watershed Branch
Assessment and Watershed Protection Division
Office of Wetland, Oceans and Watersheds
Office of Water
United States Environmental Protection Agency

This document provides EPA's guidance for preparing the 2006 Integrated Report. The Integrated Report is intended to satisfy the listing requirements of sections 305(b) and 314 of the Clean Water Act (CWA). This guidance document discusses existing requirements of the CWA and EPA's implementing regulations. Those statutory and regulatory provisions contain legally binding requirements. This document describes those requirements; it does not substitute for them. The recommendations in this document are not binding; indeed, there may be other approaches that would be appropriate in particular circumstances. When EPA makes a decision on a state's section 303(d) list, it will make each decision on a case-by-case basis and will be guided by the applicable requirements of the CWA and implementing regulations, taking into account comments and information presented at that time by interested persons regarding the appropriateness of applying these recommendations to the particular situation.

CONTENTS

Section Page

ABBREVIATIONS AND ACRONYMS v

I. INTRODUCTION 6

II REPORTING REQUIREMENTS UNDER THE CLEAN WATER ACT SECTIONS 303(D), 305(B), 314 AND CORRESPONDING REGULATIONS 9

III. RECOMMENDED ORGANIZATION OF AN INTEGRATED REPORT 13
EXECUTIVE SUMMARY 14
PART A. INTRODUCTION 14
PART B. BACKGROUND INFORMATION 14
PART C SURFACE WATER MONITORING AND ASSESSMENT. 17
PART D. GROUND WATER MONITORING AND ASSESSMENT 25
PART E. PUBLIC PARTICIPATION 25

IV. ISSUES CONCERNING THE DEVELOPMENT AND USE OF AN ASSESSMENT METHODOLOGY 29

V. FIVE-PART CATEGORIZATION OF WATERS 46

VI. REPORTING RESULTS 65

GLOSSARY 66

APPENDIX: DATA ELEMENTS FOR 2006 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT AND DOCUMENTATION FOR DEFINING AND LINKING SEGMENTS TO THE NATIONAL HYDROGRAPHY DATASET
. 70

TABLES

Table		Page
2-1	SUMMARY OF STATE REPORTING REQUIREMENTS UNDER CWA SECTIONS 303(D), 305(B) AND 314 AND CORRESPONDING REGULATIONS	11
3-1	ATLAS	15
3-2	SIZE OF SURFACE WATERS ASSIGNED TO REPORTING CATEGORIES	19
3-3	ATTAINMENT RESULTS CALCULATED USING PROBABILISTIC MONITORING DESIGNS	20
3-4	SEGMENT/POLLUTANT COMBINATIONS REMOVED FROM STATE'S YEAR 2004 SECTION 303(D) LIST	21
3-5	TMDL DEVELOPMENT STATUS	21
3-6	INDIVIDUAL DESIGNATED USE SUPPORT SUMMARY	22
3-7	SIZE OF WATERS IMPAIRED BY CAUSES	22
3-8	SIZE OF WATERS IMPAIRED BY SOURCES	23
3-9	TROPHIC STATUS OF SIGNIFICANT PUBLICLY OWNED LAKES	24
3-10	TRENDS IN LAKE WATER QUALITY	24
3-11	SUMMARY OF WATER QUALITY REPORTING ELEMENTS OF AN INTEGRATED REPORT	27
5-1	RECOMMENDED WATER QUALITY INDICATORS FOR GENERAL DESIGNATED USE CATEGORIES	52
5-2	DOCUMENTATION OF "GOOD CAUSE" TO MOVE SEGMENTS FROM CATEGORY 5.	58

FIGURES

Figure		Page
4-1	USING MULTIPLE TYPES OF DATA TO ASSESS ATTAINMENT	45

EXHIBITS

Exhibit		Page
3-1	RECOMMENDED ORGANIZATION FOR YEAR 2006 INTEGRATED REPORT SUBMITTALS	13
5-1	2006 INTEGRATED REPORTING GUIDANCE: SEGMENT CATEGORIZATION GUIDE	48

ABBREVIATIONS AND ACRONYMS

ADB	Assessment Database
AU	Assessment Unit
CALM	Consolidated Assessment and Listing Methodology
CPP	Continuing Planning Process
CFR	Code of Federal Regulations
CWA	Clean Water Act
DQO	Data Quality Objectives
DU	Designated Use
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
FGDC	Federal Geographic Data Committee
GPRA	Government Performance Report Act
IR	Integrated Report
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NSSP	National Shellfish Sanitation Program
OW	Office of Water
PPG	Performance Partnership Grant
PWS	Public Water Supply
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RIT	Reach Indexing Tool
SDWA	Safe Drinking Water Act
STORET	STORage and RETrieval
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WQC	Water Quality Criteria
WQS	Water Quality Standard

I. INTRODUCTION

The *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* was developed specifically for the 2006 reporting cycle. The objective of this document is to provide to states, territories, authorized tribes, and interstate commissions[1] a recommended reporting format and a suggested content to be used in developing a single document that integrates the reporting requirements of the Clean Water Act (CWA) section 303(d) and section 305(b). This guidance for developing the Integrated Report (IR) supports the Environmental Protection Agency's (EPA) strategy for achieving a broad-scale, national inventory of water quality conditions. Use of the IR format will serve to report on water quality standards (WQS) attainment status of assessed waters, document availability of data and information for each segment, identify trends in water quality conditions, and provide information to managers in setting priorities for future actions to protect and restore the health of our nation's aquatic resources.

EPA has established a goal that all fifty-six states and territories utilize the integrated reporting format by 2008. EPA continues to promote this comprehensive assessment approach in order to enhance the states' ability to track both programmatic and environmental goals of the CWA, and ideally, to increase the pace of achieving these important environmental goals. This document includes recommendations designed to allow states and other interested stakeholders to track the progress of interim management actions by employing the multi-category reporting framework. By issuing this guidance well in advance of the April 1, 2006 deadline for submission of CWA section 303(d) lists and section 305(b) reports, EPA intends to encourage the broadest possible adoption of the integrated reporting approach.

EPA continues to advocate the use of the five-part categorization format for sorting waters (see box below for brief description and Section V). While this document is more comprehensive than previous Integrated Report Guidance, there are clarifications to the previous (2004) Integrated Report Guidance. Specifically, this guidance provides:

- increased emphasis on the use of the Assessment Database (ADB) or compatible electronic data format (the ADB is being modified to accommodate the recent format, content, and multi-category listing option that the guidance suggests),
- greater clarity on the content and the format of those components of the IR that are recommended and required under CWA sections 303(d), 305(b), and 314,
- greater clarity on issues associated with data solicitation, collection, consideration, and interpretation of water quality standards,
- additional information on the option to report water quality status of individual segments in more than one category (e.g., to show that some designated uses of a water are being attained and some designated uses are not),[2] and
- additional clarity and flexibility on undertaking and reporting alternatives to total maximum daily loads (TMDLs) for attaining water quality standards (e.g., utilization of reporting "Category 4b").

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[1] In the remainder of this document, unless specified otherwise, *states* also refers to authorized tribes, territories and interstates commissions.

[2] In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality, although note that states determine their section 303(d) list (i.e., Category 5) consistent with 40 CFR 130.7 (b)(3).

It is important to note that certain components of the recommended format and content for the 2006 IR document are based on requirements of the CWA and EPA's implementing regulations (e.g., the submission of an approvable section 303(d) list), whereas other components are based on Agency recommendations. In section II of this guidance, those components *required* by the CWA sections 303(d), 305(b), 314, and the corresponding regulations are identified.

In addition to identifying the required components in the 2006 IR submission, this guidance will indicate the components of the 2006 IR document for which EPA recommends states provide an opportunity for *public review and comment* (e.g., the list of impaired waters requiring TMDLs and the assessment methodology used by the state to develop their IR document).

Five Reporting Categories

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Integrated Monitoring and Assessment

The Clean Water Act requires states to provide every two years an assessment of the quality of all their waters (section 305(b)) and a list of those that are impaired or threatened (section 303(d)). To efficiently meet this charge, EPA recommends that states, tribes, and other water quality monitoring collaborators use a combination of monitoring and assessment techniques to:

1. increase the percentage and types of waters assessed;
2. reliably estimate the overall condition of all waters within a state; assess changes over time; and measure progress toward the "fishable-swimmable" goal of the Clean Water Act (section 305(b));
3. comprehensively identify all impaired and threatened waters to support section 303(d) listing requirements; and
4. prioritize site-specific assessments needed to confirm the location of both high quality and impaired waters, and support control, restoration, and prevention actions.

EPA has strongly encouraged states to use integrated monitoring and assessment techniques. These include probability-based assessments and other predictive tools, as well as site-specific assessments. The use of probability assessments can eliminate the risk of generating a biased picture of water quality conditions state-wide and provide a cost-effective bench mark of state water quality program effectiveness. The probability-based assessment results can also help a state decide if it should target certain waters for further assessment or if limited resources for water quality assessment could be used more effectively in other ways. States currently using broad-scale probability-based assessment to complement their site-specific assessment include VA, SC, KY, and IN, among others.

V. FIVE-PART CATEGORIZATION OF WATERS

Use of the Integrated Report format and the use of the five-part categorization scheme envisions that each state provides a comprehensive description of the water quality standards attainment status of all segments within a state. In this guidance, the term "segment" is synonymous with the term "assessment unit" (AU) used in previous IR Guidance. Fundamental to this accounting is the use of a consistent and rational segmentation and geo-referencing approach for all segments including rivers, streams, lakes, wetlands, estuaries, and coastal waters. There is no single approach to the development of a segmentation scheme. However, it is important that the selected segmentation approach be consistent with the state's water quality standards and be capable of providing a spatial scale that is adequate to characterize the WQS attainment status of the segment. The IRG provides some recommendations on how states may develop a segmentation scheme for monitoring, assessing and categorizing water quality conditions. Additionally, the IRG provides recommendations for assigning individual segments to the five-category system.

A. Recommendations for Segmenting Waters

EPA recommends that states consider using the National Hydrography Dataset (NHD)[15] coding scheme to georeference their segments, where segments may comprise part of an NHD reach, an individual NHD reach, or a collection of NHD reaches or parts of reaches. Alternatively, if a state has already developed a comparable Geographic Information System (GIS) framework, EPA requests that states provide any relevant information necessary to allow consistent georeferencing. Additionally, this information should be included in the state's ADB submission. States generally partition waters to represent homogeneity in physical, biological or chemical conditions. This segmentation may reflect an *a priori* knowledge of factors such as flow, channel morphology, substrate, riparian condition, adjoining land uses, confluence with other waterbodies, and potential sources of pollutant loadings (both point and nonpoint). While there is no single default dimension for a segment size, states have utilized these or similar principles when they defined the segments used in their water quality standards. Other factors may include the following:

- The expected natural variability of the measured criteria associated with the WQSs.
- The type of water (e.g., a small stream, a wide river, a tidal and stratified estuary, and coastal shoreline).
- Time of travel of a parcel of water in the waterbody or segment or the magnitude of any tidal excursions.
- The amount of and type of data and information necessary to provide a reasonably accurate characterization of the criteria (or core indicators) associated with the designated uses in the segment or waterbody.
- Any expected changes in significant influences in the watershed (land use, point or nonpoint sources of pollutants).
- Any site-specific concerns such as patchy or unique habitat distribution patterns or biological population distributions.

[15] By making this recommendation, EPA is not equating availability of geographical information on a water segment in the NHD with the legal definition of water of the U.S. under CWA.

Using NHD or other comparable GIS framework, a state should assign a discrete "address" or geo-location to each segment, and document the process used for defining water segments in their methodologies. The physical boundaries (beginning and end points) of a segment should be defined in such a manner that a scientifically valid assessment of each and every segment can be made. The individual size of a segment will vary based upon methodologies. Segments should, however, be larger than a sampling station but small enough to represent a relatively homogenous parcel of water (with regard to hydrology, land use influences, point and nonpoint source loadings, etc.).

B. How should segments be assigned to EPA's five reporting categories?

EPA continues to advocate the use of the five category approach for classifying the WQS attainment status for each segment. In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality. A segment is considered impaired when WQS[16] are not being supported and/or met, and is considered threatened when WQS are not expected to be fully supported and/or met in the next listing cycle. In classifying the status of water quality in 2006, states have the option to report each segment in one or more categories. EPA recommends that states use the following five reporting categories to classify segments as meeting or not meeting applicable WQS:

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Exhibit 5-1 provides an example of how to consider designated uses in the categorization process. EPA believes that the placement of segments into the five reporting categories best allows states to document attainment of applicable WQSs, and to develop monitoring strategies that effectively respond to the needs identified in the assessment, while ensuring that the attainment status of each water quality standard applicable to a particular segment is addressed.

[16] Water quality standards include designated use(s), criteria, and the antidegradation policy. Water quality criteria are important elements of water quality standards and attainment of criteria should also be evaluated in making listing decisions (See 40 CFR 130.7 (b)(3)). Failure to meet WQC warrant listing of waters under section 303(d). EPA has not developed guidance at this time on determining attainment status for antidegradation policies. EPA recognizes that such policies, while an important part of WQS, may not lend themselves to "attainment" determinations on a segment specific basis.

Exhibit 5-1. 2006 Integrated Reporting Guidance: Segment Categorization Guide

The following schematic describes a process states might consider using for determining the placement of segments into the Integrated Report (IR) Categories. The process begins with the assessment of the water quality standard attainment status (designated use(s), criteria) of each segment, and concludes with the placement of each segment into one or more of the five IR Categories. The assessment of the water quality standards attainment status should be consistent with the state's assessment and listing methodology and must ensure that segments not meeting or not expected to meet applicable water quality standards are identified. While the schematic focuses on the assessment of designated uses (DU) for each segment, as previously stated all components of the water quality standard are considered in the categorization of a segment.

Step-by-step process to categorize a segment

1. For each segment, assemble and consider all existing and readily available data and/or information to determine the support status for each individual designated use.
2. Based on the data and information available, make support decisions for each DU in the segment and assign the appropriate symbol (✔+, ✔-, ?, T, 4a, 4b, 4c – See *Symbols and Definitions*).
3. Using the results of Step 2, place the segment into the appropriate category or categories.

Symbols and Definitions:

✔+ = The existing data and information shows that a use ***is supported***.

✔- = The existing data and information shows that a use ***is not supported.***

? = There is insufficient existing data and information to make a use support determination, consistent with the state's assessment and listing methodology.

T = A use in this segment is currently being supported, but is **THREATENED** and it is projected not to be supporting by the next scheduled list submission date.

4a = A TMDL to address a specific segment/pollutant combination has been approved or established by EPA.

4b = A use impairment caused by a pollutant is being addressed by the state through other pollution control requirements.

4c = A use is impaired, but the impairment is not caused by a pollutant.

In the following schematic, each box represents one (1) segment. Each segment may contain one or more DUs. After compiling and considering all existing and readily available data and information for each DU in a specific segment, support decisions are made. Placement of the segment into the appropriate category or categories is based on the sufficiency of the data and information, and the analysis of whether the data demonstrates that the DU is supported.

SEGMENT #1 (1 DU) → **ASSESSMENT**

DU1 → ✔+

SEGMENT #2 (2 DUs) → **ASSESSMENT**

DU1, DU2 → T, ✔-

SEGMENT #3 (3 DUs) → **ASSESSMENT**

DU1, DU2, DU3 → ✔+, ✔+, ?

SEGMENT #4 (4 DUs) → **ASSESSMENT**

DU1, DU2, DU3, DU4 → ✔-, 4a, ?, ✔+

SEGMENT CATEGORIZATION

	DU1	DU2	DU3	DU4	Single Category	Multi-Category
SEGMENT 1	✔+				C1	C1
SEGMENT 2	T	✔-			C5	C5
SEGMENT 3	✔+	✔+	?		C2	C2 & C3
SEGMENT 4	✔-	4a	?	✔+	C5	C5, C4a, C3 & C2

Additional examples are provided below to further illustrate the process of segment classification into multiple categories.

	DU1	DU2	DU3	DU4	Single-Category	Multi-Category
SEGMENT A	✔+	✔+	✔+	✔+	C1	C1
SEGMENT B	✔-	✔-	✔-	✔-	C5	C5
SEGMENT C	✔-	✔-	✔-	T	C5	C5
SEGMENT D	?	?	?	?	C3	C3
SEGMENT E	4b	✔-	✔-	✔-	C5	C4b, C5
SEGMENT F	✔+	✔+	✔-	✔-	C5	C2 & C5
SEGMENT G	✔+	✔+	?	?	C2	C2 &C3
SEGMENT H	?	?	?	✔-	C5	C3 & C5
SEGMENT I	✔+	✔+	✔+	4c	C4c	C2, C4c
SEGMENT J	?	?	4c	T	C5	C3, C4c, & C5
SEGMENT K	✔+	?	?	✔-	C5	C2, C3, & C5
SEGMENT L	✔+	✔+	?	T	C5	C2, C3 & C5
SEGMENT M	✔+	?	4b	✔-	C5	C2, C3, C4b & C5

States have the option to place segments into more than one of the five categories when appropriate. The placement of segments into more than one category will allow states to:

1. Demonstrate progress in the efforts to develop TMDLs,
2. Track progress as segments incrementally attain some, but not all water quality standards, and
3. Identify those segments where there is a need to obtain additional data and information for purposes of determining attainment status of some water quality standards.

While EPA recommends that states adopt and utilize the IR format for reporting the status of their water quality in 2006, states may choose to submit separate 303(d) and 305(b) reports. Furthermore, even if a state chooses to use the IR format, it may choose to place each segment into only one category and rely on the reporting capability of ADB to provide detail on the support status of all individual uses. More detailed guidance for determining the appropriate categorization of segments is provided below. It is important to note that states must consider all existing and readily available data and information in developing their section 303(d) lists, and may choose to assess a segment and assign the segment to a category using data and information other than monitored data (e.g., land use, pollutant loading coefficients, remote sensing data, modeling, etc.).

C. May a state use subcategories or additional categories in its Integrated Report?

Yes, in order to refine their classifications, states may choose to establish new or additional subcategories in addition to the proposed five major categories. For example, a state may decide to divide Category 3 into two subcategories in order to distinguish between those segments for which no data and/or information exist from those segments for which some data and/or information exist, but the data are insufficient to make a determination whether the segment is attaining applicable standards. A state may also choose to use subcategories for segments placed into Category 3 when establishing monitoring priorities. For example, the state may place its segments into different subcategories depending on whether the segment is high, medium, or low priority for follow-up monitoring based on information from probability-based monitoring, landscape or water quality models, land use data, or limited site-specific monitoring.

D. Which segments should states include in Category 1?

Segments may be placed into Category 1 if all designated uses are supported, and no use is threatened. When a segment meets the Category 1 requirements, the state has concluded, consistent with their water quality standards (and their assessment methodology) that sufficient data and information exist to determine that ***all applicable water quality standards are being attained,*** thereby making the use of Category 2 unnecessary for this segment, (see Category 2 discussion below). By placing a segment into Category 1, the state is also concluding that there are adequate data and there is sufficient information to make a determination for any water quality standard, making the use of Category 3 unnecessary for this segment (see Category 3 discussion below).

1. *In order to place a segment in Category 1, must states have specific data and information regarding the status of each water quality standard?*[17]

No. States may describe in either their assessment methodology or in their water quality standards a subset or hierarchy of indicators (as described in the CALM guidance and *Elements of a State Water Monitoring and Assessment Program*) that serve to characterize whether conditions in a segment are capable of meeting all applicable water quality standards.

Because limited resources affect the design of water quality monitoring programs, the state should use a tiered approach to monitoring that includes a core set of baseline indicators selected to represent each applicable designated use, plus supplemental indicators selected according to site-specific or project-specific decision criteria. Using this tiered approach, the state should be able to make the best use of its resources to meet water quality decision needs, including assessing water quality standards attainment and designated use support, identifying needed changes to water quality standards, describing causes and sources of impairments, developing water quality-based source controls, and assessing whether water quality standards are attained. Where the assessment of the supplemental indicators applicable to every designated use in a segment documents that all uses are supported and no use is threatened, that segment should be placed into Category 1.

The monitoring strategy should define a core set of indicators (e.g., water quality parameters) for each water resource type that include physical/habitat, chemical/toxicological, and biological/ecological endpoints as appropriate, that reflect designated uses, and that can be used routinely to assess attainment with applicable water quality standards throughout the state. This core set of indicators is monitored to provide Statewide or basin/watershed level information on the fundamental attributes of the aquatic environment and to assess water quality standards attainment/impairment status. Previously, chemical and physical indicators were emphasized; however, biological monitoring and assessment should assume a prominent role in state monitoring as well.

The monitoring strategy should also describe the process the state uses for identifying supplemental indicators to monitor. Supplemental indicators are often key to identifying causes and sources of impairments and targeting appropriate source controls. These supplemental indicators may include each water quality criteria in the state's water quality standards, any pollutants controlled by the National Pollutant Discharge Elimination System (NPDES), and any other constituents or indicators of concern.

Table 5-1 presents examples of recommended core and supplemental water quality indicators. The Consolidated Assessment and Listing Methodology provides additional information on considerations for selection of supplemental indicators (see http://www.epa.gov/owow/monitoring/calm.html, Chapter 10).

[17] Part D(1) of Section V has been adapted from Section II (Part D) of *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

Table 5-1. Recommended Water Quality Indicators for General Designated Use Categories

	Aquatic Life & Wildlife	Recreation	Drinking Water	Fish/Shellfish Consumption
Recommended Core Indicators	*Condition of biological communities (EPA recommends the use of at least two assemblages) *Dissolved oxygen *Temperature *Conductivity *pH *Habitat assessment *Flow *Nutrients *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Eutrophic condition Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Pathogen indicators (E. coli, enterococci) *Nuisance plant Growth *Flow *Nutrients *Chlorophyll *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Secchi depth Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Trace metals *Pathogens *Nitrates *Salinity *Sediments/TDS *Flow *Landscape conditions (e.g., % cover of land uses)	*Pathogens *Mercury *Chlordane *DDT *PCBs *Landscape conditions (e.g., % cover of land uses)
Supplemental Indicators	*Ambient toxicity *Sediment toxicity *Other chemicals of concern in water column or sediment *Health of organisms	*Other chemicals of concern in water column or sediment *Hazardous chemicals *Aesthetics	*Volatile organic compounds (VOCs) (in reservoirs) *Hydrophyllic pesticides *Nutrients *Other chemicals of concern in water column or sediment *Algae	*Other chemicals of concern in water column or sediment

Source: *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

2. Should states use biosurvey data to list a segment as in attainment for aquatic life use support?

EPA encourages the use of biosurvey data in concert with other specified and supplemental indicators for making an aquatic life use attainment determination. Properly developed biosurvey data can provide direct evidence of aquatic life use support. States may develop, consistent with their assessment methodology and water quality standards, their own bioassessment approach to assessing aquatic life use support. CALM and the 2003 *Elements of a State Water Monitoring and Assessment Program,* recommend the use of at least two assemblages (e.g., fish and macroinvertebrates) in such assessments (See Table 5-1 taken from *Elements of a State Water Monitoring and Assessment Program*).

3. What data should states have to determine that a segment is meeting a "fish consumption" use?

Assessment determinations regarding fish/shellfish consumption uses should be based on parameter-specific data for two groups of pollutants: (1) human pathogens, or indicators thereof, and (2) chemicals with high bioaccumulation potential. Among the bioaccumulative pollutants, EPA recommends mercury, chlordane, Dichloro-diphenyl-trichloroethane (DDT), and polychlorinated biphenyls (PCBs) as core indicators.

E. Which segments should states include in Category 2?

Segments should be placed in Category 2 if the state determines that available data and/or information indicate that some, but not all of the designated uses are supported. If the state has chosen to use the multi-category approach, segments reported in Category 2 may also be reported in Categories 3, 4, or 5 depending upon the results of the analysis of all available data and information on the other uses in the segment. However, if a single-category approach is used, Category 5 takes precedence over all other categories.

F. Which segments should states include in Category 3?

Segments should be placed in Category 3 when there is insufficient available data and/or information to make a use support determination. Category 3 is consistent with and responds to one of the recommendations in the National Research Council's (NRC) report, Assessing the TMDL Approach to Water Quality Management (2001), in which the authors suggested that a category be created for those segments where there existed insufficient data and/or information to assess the use. The state should identify those segments that are higher and lower priority for followup monitoring, and may do so using predicative tools such as probability surveys or landscape models. Category 3 provides states with the flexibility to monitor these segments in a manner consistent with their overall monitoring strategy and schedule.

G. Which segments should states include in Category 4?

Segments may be placed in Category 4 if available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed. States may place segments that meet this definition in one of the following three subcategories:

- a state developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination (Category 4a);

- other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time (Category 4b);
- the non-attainment of any applicable water quality standard for the segment is the result of pollution and is not caused by a pollutant (Category 4c).

1. Which segments should states include in Category 4a?

Segments should be placed in Category 4a when a TMDL to address a specific segment/pollutant combination has been approved or established by EPA. Once the TMDL has been approved or established, the state should implement the TMDL as soon as practicable. Additionally, EPA encourages states to provide monitoring schedules for these segments to ensure that sufficient data and information are obtained to document progress of the implementation actions towards meeting the applicable water quality standards. Segments in this category may also be included in other categories, as appropriate (See Exhibit 5-1).

2. Which segments should states include in Category 4b?

EPA regulations recognize that alternative pollution control requirements may obviate the need for a TMDL. Segments are not required to be included on the section 303(d) list if technology-based effluent limitations required by the Act, more stringent effluent limitations required by state, local, or federal authority, or "[o]ther pollution control requirements (e.g., best management practices) required by local, State or Federal authority" are stringent enough to implement applicable water quality standards (see 40 CFR 130.7(b)(1)) within a reasonable period of time. This guidance acknowledges that the most effective method for achieving water quality standards for some water quality impaired segments may be through controls developed and implemented without TMDLs (referred to as a "4b alternative"). The discussion below focuses on the use of "other pollution control requirements" as a basis for the conclusion that a segment does not need a TMDL.

a. What demonstration does EPA expect a state to make to support a successful Category 4b proposal?

EPA will evaluate on a case-by-case basis a state's decisions to exclude certain segment/pollutant combinations from Category 5 (the section 303(d) list) based on the 4b alternative. States should provide in their submission the rationale which supports their conclusion that there are "other pollution control requirements" sufficiently stringent to achieve applicable water quality standards within a reasonable period of time.

Specifically, this rationale should include: (1) a statement of the problem causing the impairment, (2) a description of the proposed implementation strategy and supporting pollution controls necessary to achieve water quality standards, including the identification of point and nonpoint source loadings that when implemented assure the attainment of all applicable water quality standards, (3) an estimate or projection of the time when water quality standards will be met, (4) a reasonable schedule for implementing the necessary pollution controls, (5) a description of, and schedule for, monitoring milestones for tracking and reporting progress to EPA on the implementation of the pollution controls, and (6) a commitment to revise as necessary the implementation strategy and corresponding pollution controls if progress towards meeting water quality standards is not being shown. EPA acknowledges that the level of rigor necessary to support the state's rationale will vary depending on the complexity of the

water impairments and corresponding implementation strategies. Note that a state could pursue water quality trading under 4b, so long as it follows the principles described in the Agency's relevant guidance.

If the Agency determines that the controls are not, in fact, "requirements," or that they will not result in attainment of applicable water quality standards within a reasonable time, then EPA may disapprove the state's failure to include the segment at issue on the section 303(d) list (i.e., Category 5) and add the segment to the list. In subsequent list submissions, EPA may determine that a segment that has been placed into Category 4b must go back into Category 5, if the circumstances have changed such that the state can no longer support its original 4b demonstration.

b. What constitutes acceptable "pollution control requirements" to support Category 4b alternatives?

Because of the case-specific nature of water quality impairments and controls designed to address such impairments, EPA cannot identify classes of controls that will always be adequate to support a conclusion that a segment is not required to be included in Category 5. In evaluating whether a particular set of pollution controls are in fact "requirements" as specified in EPA's regulation, the Agency will consider a number of factors including: (1) authority (local, state, federal) under which the controls are required and will be implemented with respect to sources contributing to the water quality impairment (examples may include: self-executing state or local regulations, permits, and contracts and grant/funding agreements that require implementation of necessary controls), (2) existing commitments made by the sources to implementation of the controls (including an analysis of the amount of actual implementation that has already occurred), (3) the availability of dedicated funding for the implementation of the controls, and (4) other relevant factors as determined by EPA depending on case-specific circumstances.

Since the overriding objective of the 4b alternative is to promote implementation activities designed to achieve water quality standards in a reasonable period of time, for all of the factors listed above, EPA will evaluate each 4b alternative on a case-by-case basis, including in particular the existence of identifiable consequences for the failure to implement the proposed pollution controls. Depending on the specific situation, "other pollution control requirements" may be requirements other than those based on statutory or regulatory provisions, as long as some combination of the factors listed above are present and will lead to achievement of WQSs within a reasonable period of time. For example, established plans of government agencies that require for attainment of WQS with a reasonable period of time may qualify even when their components include incentive-based actions by private parties. States may also choose to rely on controls that have already been implemented where there is sufficient certainty that implementation will continue until WQS are achieved and will not be reversed. Because the controls are already in place and achieving progress, EPA may consider such controls to be requirements even if their implementation did not occur pursuant to binding legal authority.

c. What constitutes a reasonable period of time for purposes of 4b?

EPA expects that segments impaired by a pollutant but not listed under section 303(d) based on the implementation of existing control requirements will attain WQSs within a reasonable period of time. What constitutes a "reasonable time" will vary depending on factors such as the initial severity of the impairment, the cause of the impairment (e.g., point source discharges, in place sediment fluxes, atmospheric deposition, nonpoint source runoff), riparian condition, channel condition, the nature and behavior of the specific pollutant (e.g., conservative, reactive), the size and complexity of the segment (a

simple first-order stream, a large thermally-stratified lake, a density-stratified estuary, and tidally-influenced coastal segment), the nature of the control action, cost, public interest, etc. States should consider such factors and provide, as stated in Section IV.G.2.A. above, a time estimate by which the controls will result in WQS attainment, including an explanation of the basis for their conclusion. EPA will evaluate on a case-specific basis whether the estimated time for WQS attainment is reasonable.

d. What are some examples to illustrate how the preceding guidance would be applied?

EPA will evaluate on a case-specific basis each set of controls a state uses to support a decision to include a segment in Category 4b. The following circumstances are examples of controls which may be sufficient to support such a decision, depending on the facts of the specific case:

- A waterbody is impaired solely by point sources. Each point source has an NPDES permit containing limits sufficient to implement WQS in that waterbody by the end of the permit terms.
- A waterbody is impaired by nonpoint source sediment input. The state has adopted regulations requiring sources to implement certain best management practices (BMPs), and can enforce the regulatory requirements under state law. The state demonstrates that implementation of BMPs by these sources will result in meeting WQS in the waterbody in a reasonable time.
- A waterbody is impaired by nonpoint sources and the state has entered into contracts for source remediation. Implementation of the contract terms will result in attainment of WQS in the waterbody in a reasonable time. While the state cannot obtain specific performance as a contract remedy, it can file a claim for significant monetary damages if the terms are not met.
- A waterbody is impaired by nonpoint sources which have already implemented some or all of certain measures that will result in attainment of WQS in that waterbody in a reasonable time. The controls are unlikely to be removed or reversed (e.g., watershed restoration measures pursuant to 319 grant).
- A waterbody is impaired by nonpoint sources within federal lands where a forest management plan has been developed and is being implemented. In this case, certain elements are included in the forest management plan emphasizing BMP certification programs, require adaptive adjustments of practices, and specify monitoring options needed to demonstrate compliance with state water quality standards.

3. Which segments should states include in Category 4c?

Segments should be placed in Category 4c when the states demonstrates that the failure to meet an applicable water quality standard is not caused by a pollutant, but instead is caused by other types of pollution. Segments placed in Category 4c do not require the development of a TMDL. Pollution, as defined by the CWA is "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water" (section 502(19)). In some cases, the pollution is caused by the presence of a pollutant and a TMDL is required. In other cases, pollution does not result from a pollutant and a TMDL is not required. States should schedule these segments for monitoring to confirm that there continues to be no pollutant associated with the failure to meet the water quality standard and to support water quality management actions necessary to address the cause(s) of the impairment. Examples of circumstances where an impaired segment may be placed in Category 4c include segments impaired solely due to lack of adequate flow or to stream channelization.

EPA encourages the state to collect or assemble additional data and/or information to verify the initial placement of the segment, and to re-categorize the segment based on the assessment of the additional data and/or information where appropriate.

H. Which segments should states include in Category 5?

This category constitutes the section 303(d) list that EPA will review and approve or disapprove pursuant to 40 CFR 130.7. States must include on their section 303(d) list those waters required to be listed by the Clean Water Act and EPA's implementing regulations. Segments must be placed in Category 5 when, based on existing and readily available data and/or information, technology-based effluent limitations required by the Act, more stringent effluent limitations, and other pollution control requirements are not sufficient to implement an applicable water quality standard and a TMDL is needed. 40 CFR 130.7(b)(1).

A segment that is included in Category 5 may also be included in other categories where appropriate. For example, the segment may be attaining some applicable standards, in which case it may also be included in Category 2. As the state develops and EPA approves TMDLs for the pollutants identified as causing a Category 5 segment to exceed an applicable standard, the segment can be placed in Category 4a, but must also remain in Category 5 if it is exceeding any applicable standard and a TMDL needs to be developed for the pollutant causing that exceedance. However, note that Category 5 takes precedence if the state chooses to list a segment in only one category.

1. Is Category 5 of the Integrated Report for 2006 a new section 303(d) list, and must the state account for all segments previously listed as needing a TMDL in the 2004 list?

The section 303(d) list (segments in Category 5) once approved (or, if necessary, established by EPA following disapproval of a state's list) is a new list that replaces the previous list. The time frame for establishing TMDLs should be 8 to 13 years from the date of the original listing. For example, a segment originally included on the 1998 section 303(d) list, and still identified on the 2006 submission as requiring a TMDL, should be addressed by 2011.

Segments included on previous 303(d) lists or previously placed in Category 5 should be accounted for in subsequent submissions. However, the fact that a segment was previously included in Category 5 (or on the 303(d) list) does not necessarily mean that it must remain in Category 5 until a TMDL is established. In some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the applicable standard is met). Alternatively, the state may determine that other required control measures are sufficient to implement the applicable standard, and therefore may move the segment to Category 4b. The state may also determine based on the assessment of new data and information that pollutants do not cause or contribute to the impairment of the segment and therefore may move the segment to Category 4c. The state may also demonstrate that the original Category 5 listing was erroneous (i.e., not consistent with its assessment methodology or WQSs).

EPA may request, as discussed below, that the state demonstrate good cause for not including individual segments (including previously listed segments) in Category 5 (40 CFR 130.7(b)(6)(iv)). EPA may request this demonstration if the state does not develop an adequate record supporting the basis for

the decision or does not specifically explain its decision to move segments previously listed in Category 5 to other categories.

2. *What constitutes good cause for not including in the current submission segments that were previously included in Category 5 (the section 303(d) List)?*

To provide interested stakeholders with a more complete understanding of the changes that may have occurred from one IR cycle (or 303(d) submission) to the next, and to help expedite EPA's review and approval/disapproval action for those segments in Category 5, EPA recommends that states submit with their IR (or their 303(d) list) a table documenting changes in segment placement or categorization from the 2004 IR, and a brief summary of the basis for those changes. Table 5-2 provides an example of how states might do this.

Table 5-2. Documentation of "Good Cause" to Move Segments from Category 5.

Segment previously in Category 5	New placement in 2006	Explanation for change
Segment 214	Category 4a	TMDL completed and approved by EPA for Chromium.
Segment 266	Category 4c	The analysis of new data concluded that the aquatic life use impairment is solely due to low river flow.
Segment 321	Category 4b	The state has proposed an alternative approach to attain WQS by implementing required controls via NPDES permits.
Segment 349	Category 1	The assessment of new data documents that applicable WQS are now being attained.
Segment 350	Category 3	Previous listing in Category 5 was inconsistent with assessment methodology. Available data insufficient to determine attainment status.

In addition, EPA may request that states provide "good cause" for not including on the 2006 section 303(d) list (Category 5) submission segments that were previously included on the list. If EPA makes such a request, the state must explain its basis for not including the segment on the list. Consistent with 40 CFR 130.7(b), "good cause" for not including segments in Category 5 may be based on the following determinations:

- The assessment and interpretation of more recent or more accurate data in the record demonstrate that the applicable WQS(s) is being met.
- The results of more sophisticated water quality modeling demonstrate that the applicable WQS(s) is being met.
- Flaws in the original analysis of data and information led to the segment being incorrectly listed.
- A demonstration pursuant to 40 CFR 130.7(b)(1)(ii) that there are effluent limitations required by state or local authorities that are more stringent than technology-based effluent limitations, required by the CWA, and that these more stringent effluent limitations will result in the attainment of WQSs for the pollutant causing the impairment.

- A demonstration pursuant to 40 CFR 130.7(b)(1)(iii) that there are other pollution control requirements required by state, local, or federal authority that will result in attainment of WQSs for a specific pollutant(s) within a reasonable time (i.e., 4b).
- Documentation that the state included on a previous section 303(d) list an impaired segment that was not required to be listed by EPA regulations, e.g., segments where there is no pollutant associated with the impairment.
- Approval or establishment by EPA of a TMDL since the last section 303(d) list.
- A state inappropriately listed a segment that is within Indian country, as defined in 18 U.S.C. section 1151.
- Other relevant information that supports the decision not to include the segment on the section 303(d) list.

EPA has the authority to disapprove a submission if EPA identifies existing and readily available information that shows a segment is required by the CWA and EPA regulations be included in Category 5 (the section 303(d) list). In that situation, EPA will partially disapprove the state's list and identify additional segments for inclusion in Category 5.

3. Can previously listed segments (without new data or information) be delisted solely because they have not yet been assessed with a new methodology?

No. EPA does not believe it would be appropriate to remove segments previously listed in Category 5 (without new data or information) ***solely*** because they have not yet been assessed with a new methodology. However, there are some situations where a segment may be removed from Category 5 without relying on data and information collected after the date of the previous list. For example, if the state evaluates the pre-existing data and information using a new or revised methodology that accurately reflect the applicable WQS, and the results of that evaluation provide a "good cause" basis for not including the segment on the 2006 section 303(d) list, the segment would no longer need to be included in Category 5. However, the delisting should only occur if it is determined that the basis for the decision is consistent with the state's applicable WQSs and is reasonable.

4. Must Category 5 include threatened segments?

Yes, states must include threatened segments in Category 5 where appropriate (40 CFR 130.7(b)). The definition of "water quality limited segment" in EPA's regulations implementing CWA section 303(d) includes waters not expected to meet applicable water quality standards, which EPA refers to as "threatened" waters. 40 CFR 130.2(j). EPA recommends that states consider as threatened those segments that are currently attaining WQS, but are projected as the result of applying a valid statistical methodology to exceed WQS by the next listing cycle (every two years). For example, segments should be listed if the analysis of existing data and information demonstrates a declining trend in the segment's WQS, and the projected trend will result in a failure to meet that standard by the date of the next list (i.e., 2008 for purposes of the 2006 assessment cycle). The state assessment and listing methodology should describe how the state identifies threatened segments.

5. *Must Category 5 include an impaired segment if the specific pollutant causing the impairment has not been identified?*

Yes, if a designated use is not supported and the segment is impaired or threatened, the fact that the specific pollutant is not known does not provide a basis for excluding the segment from Category 5. These segments must be listed unless the state can demonstrate that no pollutant(s) causes or contribute to the impairment. Prior to establishing a TMDL for such segments the pollutant causing the impairment must be identified.

If the assessment of the new data and information demonstrates that the use impairment is not associated with a pollutant and is attributable only to other types of pollution (e.g., flow or habitat alteration) the segment may be placed into Category 4c. EPA has developed guidance to assist states in identifying the causes of a biological impairment. This document, "Stressor Identification Guidance," was released in December 2000 (EPA 822-B-00-025). This document is also available on the Internet at: http://www.epa.gov/ost/waterscience/biocriteria/stressors/stressorid.pdf.

6. *When should Category 5 include segments covered by fish and shellfish consumption advisories?*

EPA generally believes that fish and shellfish consumption advisories and certain shellfish growing area classifications based on segment specific information demonstrate impairment of CWA section 101(a) "fishable" uses. This applies to fish and shellfish consumption advisories and certain shellfish area classifications for all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. Furthermore, advisories based on the results from probability surveys or other predictive tools having a high degree of confidence (i.e., 95%) may also form the basis of listing segments as impaired. States, on their own prerogative, may choose to place segments into Category 5 (or on the section 303(d) list) using probability surveys when fish and shellfish consumption advisories and certain shellfish area classifications constitute potential risks to human health.

For purposes of determining whether a segment is impaired and should be included on section 303(d) lists states are required to consider all existing and readily available data and information (see 40 CFR 130.7). This should include physical, chemical and biological data, including data on pathogens (such as bacteria and phytotoxins) as well as fish and shellfish tissue concentration data, where such data are existing and readily available. States collect several types of monitoring data to help determine if segments are attaining or maintaining applicable water quality standards. If a state does not consider particular existing and readily available data and information in deciding which segments are impaired and must be placed on the section 303(d) list, they must provide an explanation to EPA of why they did not use such data and information.

While numeric human health criteria for ambient water column concentrations of pollutants are a basis for determining impairment, the attainment of such criteria does not always mean that designated uses are being protected. Segment-specific factors sometimes cause pollutants, including pathogens, to accumulate in fish and shellfish tissue at higher levels than predicted by the methodology used to derive the numeric human health criteria. Examples of such factors include water temperature, nutrient levels, food web structure, the concentration of dissolved organic carbon in the ambient water, and accumulations in the sediment. Hence, a segment can be meeting numeric ambient water quality criteria, but not attaining the designated uses because fish or shellfish tissue concentrations exceed levels that are protective of human health. In instances where tissue concentrations indicate an impairment of the

designated use, even though ambient water column concentrations of pollutants do not indicate an exceedance, EPA recommends states translate the applicable narrative criteria on a site- specific basis or adopt site specific numeric criteria to account for higher than expected exposures from contaminated fish or shellfish tissue and protect designated uses.

Applicable shellfish growing area classifications should be used as part of determinations of attainment of water quality standards and listing of impaired segments. Shellfish growing area classifications are developed by the National Shellfish Sanitation Program (NSSP) using water column and tissue data (where available), and information from sanitary surveys of the contributing watershed, to protect public health. The states review these NSSP classifications every three years. There are certain NSSP classifications and data that do not necessarily indicate WQS violation. These include: "Prohibited" classifications set as a precautionary measure due to the proximity of wastewater treatment discharges, or absence of a required sanitary survey; shellfish tissue pathogen data (which can fluctuate based on short-term conditions not representative of general water quality); or short-term actions to place growing areas in the closed status.

When deciding whether to identify a segment as impaired, states need to determine whether there are impairments of designated uses and narrative criteria, as well as the numeric criteria. Although the CWA does not explicitly direct the use of fish and shellfish consumption advisories or NSSP classifications to determine attainment of water quality standards, states are required to consider all existing and readily available data and information to identify impaired segments on their section 303(d) lists. For purposes of determining whether a segment is impaired and should be included on a section 303(d) list, EPA considers a fish or shellfish consumption advisory, a NSSP classification, and the supporting data, to be existing and readily available data and information that demonstrates non-attainment of a section 101(a) "fishable" use when:

- the advisory is based on fish and shellfish tissue data,
- a lower than "Approved" NSSP classification is based on water column and shellfish tissue data (and this is not a precautionary "Prohibited" classification or the state water quality standard does not identify lower than "Approved" as attainment of the standard),
- the data are collected from the specific segment in question, and
- the risk assessment parameters (e.g., toxicity, risk level, exposure duration and consumption rate) of the advisory or classification are cumulatively equal to or less protective than those in the state's water quality standards.

This applies to all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. However, for fish/shellfish advisories for "dioxin and dioxin-like compounds", due to unique risk characterization issues, listing decisions should be made on a case-by-case basis.

EPA acknowledges that in some cases, fish and shellfish consumption advisories may not demonstrate that a section 101(a) "fishable" use is not being attained in an individual segment. For example, a state may have issued a statewide or regional warning regarding fish tissue contaminated with a bioaccumulative pollutant, based on data from a subset of segments. A state may use a higher fish consumption value in determining the need for an advisory compared to the value used in establishing water quality criteria for the protection of human health. As noted above, a state may also classify shellfish growing areas "Prohibited" as a precautionary measure due to the proximity of wastewater treatment discharges or where a required sanitary survey has not been conducted. In such instances, these

segments need not be listed as impaired under section 303(d) unless there are segment specific data (and the data were not considered during the development or review of a non-precautionary NSSP classification), showing non-attainment of section 101(a) uses.

Some fish and shellfish consumption advisories and NSSP classifications are based on Food and Drug Administration (FDA) action levels as opposed to EPA's risk-based methodology for the protection of human health. FDA action levels are established to protect consumers of interstate shipped, commercially marketed fish and shellfish rather than fish and shellfish caught and consumed within the state. FDA action levels also include non-risk based factors (e.g., economic impacts) in their derivation, while water quality criteria must protect the designated uses without regard to economic impacts.

Where tissue contamination that triggers an advisory based on FDA action levels indicates an exceedance of state human health criteria, the advisory is an indication that section 101(a) "fishable" uses are not attained, and therefore, these segments should be placed into Category 5 or included on the 303(d) list.

7. How should Category 5 handle segments for which WQS are being revised or where temporary variances are in place?

The attainment decision must be based on the applicable WQS. In the case of a standard that is being revised, that standard is not applicable until it has been approved by EPA. 40 CFR 131.21. Therefore states must include in Category 5 segments that do not meet an applicable WQS at the time of listing, even if the new standard is in the process of being revised to be less stringent, until such time as EPA approves the revised standard. However, these segments would not have to be considered a high priority for TMDL scheduling. If EPA approves a revised standard in the future, the segment may be removed from the section 303(d) list at that time provided the segment does not meet the listing requirements with respect to the new standard. With respect to variances, which are temporary and usually apply to a particular discharger, but may also apply to a segment, the applicable WQS typically is the underlying standard, and therefore the segment should be placed in Category 5 if it does not support one or more of the designated uses in the underlying standard.

8. Must Category 5 include a segment where the criterion has been exceeded, but the exceedance is the result of background or natural conditions?

In some cases, a segment may exhibit water quality characteristics or chemical concentrations approaching or exceeding those levels established in the state's water quality standards due solely to non-anthropogenic causes. If the state's water quality standards include a specific exclusion for exceedances caused by "natural conditions", these segments would not be considered impaired (i.e., they could be excluded from Categories 4 and 5). These segments should instead be placed into Categories 1 through 3 as appropriate. For such segments, these background or natural conditions can be defined by assessing the results of water quality monitoring efforts, by the use of predictive models, or a characterization based on data from a watershed with similar hydrologic, land use, and pollutant loading characteristics.

9. What additional information is needed for segments in Category 5?

Identification of Pollutants

Section 130.7(b)(4) requires states to identify, for each segment included on the section 303(d) list (Category 5), the "pollutants causing or expected to cause violations of the applicable water quality standards." For the 2006 listing cycle, segments identified as impaired or threatened based on biological criteria should be included in Category 5 unless the state demonstrates that a pollutant is not causing the impairment, or inclusion in Categories 4a or 4b is warranted. States must identify all pollutants that are known to be causing the impairment of a segment.

Prioritization and TMDL Schedule

Section 303(d)(1) requires states to "establish a priority ranking" for the segments it identifies on the list, taking into account the severity of the pollution and the uses to be made of such segments, and to establish TMDLs "in accordance with the priority ranking." Consistent with section 130.7(b)(4) each state shall also submit biennially a priority ranking including waters targeted for TMDL development in the next two years. Each listed pollutant-segment combination (i.e., those in Category 5) must receive a clear priority ranking, which EPA recommends be either in the form of a scheduled TMDL completion date or a ranking such as high, medium, or low. States have considerable flexibility in deciding how best to apply these factors in prioritizing their list of waters needing TMDLs. For example, a waterbody with a severe water quality problem may be given a high priority for TMDL development in light of the severity of the concern. Conversely, a severe water quality problem may require complex analysis before developing a TMDL, and the state may therefore choose to give it a lower priority to allow time to collect necessary information and complete the analysis. Thus, the most severe water quality problems or the most toxic pollutants need not always be given the highest priority for TMDL development, if circumstances warrant a lower priority. EPA will review the priority ranking but will not take action to approve or disapprove it.

Federal regulations provide that "schedules for submissions of TMDLs shall be determined by the Regional Administrator and the State" (40 CFR 130.7(d)(1)). Factors such as the state's use of a rotating basin approach or commitments specified in court orders or consent decrees may be considered when states develop priorities and schedules. EPA recommends that states develop a schedule for establishing TMDLs as expeditiously as practicable and that the schedule (1) identifies which TMDLs will be established in each year of the upcoming integrated reporting cycle and (2) estimates the approximate number of TMDLs to be established for each year thereafter. EPA encourages the states to ensure that the schedule provides that all TMDLs for every pollutant-segment combination listed on previous section 303(d) lists be established in a time frame that is no longer than 8 to 13 years from the time the pollutant-segment combination is first identified in Category 5. EPA will not take any action on the schedule. The schedule is intended to help the public and EPA to understand the state's priorities and assist in work planning.

In developing their schedules, states will need to decide which TMDLs are higher priority than others. States need not specifically identify each TMDL as high, medium or low priority. Instead, the schedule itself can reflect the state's priority ranking. The CWA does not prescribe a particular method of expressing a priority ranking, and EPA believes a TMDL schedule is a reasonable, efficient way to demonstrate priority ranking. In some circumstances, the order in which TMDLs are established might be

subject to some modifications as the schedule is implemented, based on logistical efficiencies or data availability.

Ohio Environmental Protection Agency

Ohio 2018 Integrated Water Quality Monitoring and Assessment Report

Lake Erie

Division of Surface Water
Final Report

June 2018

Table of Contents

Section A: An Overview of Water Quality in Ohio A-1

Section B: Ohio's Water Resources
B1: Facts and Figures B-1
B2: 2020 Water Quality Goals B-8

Section C: Managing Water Quality
C1: Program Summary – Surface Water C-1
C2: Program Summary – Environmental and Financial Assistance C-19
C3: Program Summary – Drinking and Ground Waters C-20
C4: Program Summary – Environmental Services C-23
C5: Cooperation among State Agencies and Departments C-23
C6: Funding Sources for Pollution Controls C-24
C7: New 303(d) Vision Implementation in Ohio C-28

Section D: Framework for Reporting and Evaluation
D1: Assessment Units D-2
D2: Evaluation of the Ohio River D-6
D3: Evaluation of Lake Erie D-6
D4: Ohio's Water Quality Standards and Use Designations D-7
D5: Sources of Existing and Readily Available Data D-8
D6: Public Involvement in Compiling Ohio's Section 303(d) List of Impaired Waters D-12
D6.1: Solicitation for External Water Quality Data, 2018 Integrated Report Project (May 23, 2017) D-12
D6.1.1: Web Page with Instructions for Submitting Level 3 Credible Data D-13
D6.2: Web Page Announcing 2018 Integrated Report Preparation D-17
D6.3: Notice of Availability and Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-18
D6.3.1: Response to Comments Received regarding the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-19
D6.3.2: Comments Received during the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-36

Section E: Evaluating Beneficial Use: Human Health (Fish Contaminants)
E1: Background E-1
E2: Rationale and Evaluation Method E-1
E3: Results E-6
E4: Supplemental Information E-25
E4.1: Calculation of Fish Concentrations from Water Quality Standards Inputs E-25
E4.2: What's the difference between the Fish Consumption Advisory decision and the impairment decision? E-29

Section F: Evaluating Beneficial Use: Recreation
F1: Background (Bacteria) F-1
F2: Evaluation Method (Bacteria) F-2
F3: Results (Bacteria) F-8
F3.1: Lake Erie Public Beaches F-8
F3.2: Rivers and Streams F-17
F3.3: Inland Lakes F-22
F4: Recreation Assessment for Algae in Western Lake Erie F-27
F4.1: Background F-27
F4.2: Rationale and Evaluation Method F-27

F4.3: Results F-36

Section G: Evaluating Beneficial Use: Aquatic Life
G1: Background and Rationale G-1
G1.1: Background G-1
G1.2: General Determination of Attainment Status G-2
G2: Evaluation Method G-3
G2.1: Rivers and Streams: Large River Assessment Units (LRAUs) G-3
G2.2: Rivers and Streams: Watershed Assessment Units (WAUs) G-3
G2.3: Lake Erie Shoreline and Islands: Lake Erie Assessment Units (LEAUs) G-6
G3: Results G-7
G3.1: LRAUs G-8
G3.2: WAUs G-10
G3.3: LEAUs G-14

Section H: Evaluating Beneficial Use: Public Drinking Water Supply
H1: Background H-1
H2: Evaluation Method H-1
H2.1 Beneficial Use Designation H-1
H2.2 Water Quality Standards H-3
H2.3 Attainment Determination H-4
H2.4 Data Sources and Requirements H-5
H2.5 Ohio River Assessments H-6
H3: Results H-6
H4: Supplemental Information H-8

Section I: Considerations for Future Lists
I1: Wetlands I-1
I1.1 Documented High-Quality Wetlands I-2
I1.2 Significant Wetland Areas I-2
I1.3 Next Steps I-3
I2: Mercury Reduction at Ohio EPA I-11
I2.1: Ohio Law I-11
I2.2: Ohio Projects I-11
I2.3: Ohio Resources I-12
I2.4: Federal Rules I-12
I3: Inland Lakes and Reservoirs I-12
I3.1: Background of Ohio's Inland Lake Water Quality Monitoring Program I-13
I3.2: Status of Inland Lakes Program I-13
I3.2.1: Lake sampling – Lake Habitat Aquatic Life Use Assessment I-14
I3.2.2: Water Quality Standards for the Protection of Aquatic Life in Lakes I-14
I3.3: Preview of Future Listings I-15
I3.3.1: Methodology Preview: Lake Habitat Use Assessment I-16
I3.3.2: Results I-16
I4: Future Lake Erie Monitoring and Assessment I-19

Section J: Addressing Waters Not Meeting Water Quality Goals
J1: Ohio's 303(d) Listing Framework J-1
J2: Prioritizing the Impaired Waters: the 303(d) List J-3
J3: Addressing Nutrients in Lake Erie J-10
J4: Summary of Results J-16
J5: Changes for the 2018 303(d) List J-20
J6: Schedule for TMDL Work J-26
J6.1: Ohio TMDL Status J-26

J6.2: Long-Term Schedules for Monitoring and TMDLs J-26
J6.3: Short-Term Schedule for TMDL Development J-26

Section K: Maps
Ohio 8-Digit Hydrologic Units
Section 303(d) Human Health (Fish Tissue) Use Categories Watershed Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Large River Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Lake Erie Assessment Units
Section 303(d) Recreation Use Categories Watershed Assessment Units
Recreation Use Index Scores Watershed Assessment Units
Section 303(d) Recreation Use Categories Large River Assessment Units
Recreation Use Index Scores Large River Assessment Units
Section 303(d) Recreation Use Categories Lake Erie Assessment Units
Section 303(d) Aquatic Life Use Categories Watershed Assessment Units
Aquatic Life Use Index Scores Watershed Assessment Units
Section 303(d) Aquatic Life Use Categories Large River Assessment Units
Aquatic Life Use Index Scores Large River Assessment Units
Section 303(d) Aquatic Life Use Categories Lake Erie Assessment Units
Aquatic Life Use Index Scores Lake Erie Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Watershed Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Large River Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Lake Erie Assessment Units
Ohio Total Maximum Daily Load Program Progress

Section L: Summary Tables of Waterbody Conditions; List of Prioritized Impaired Waters; and Category 4B Demonstrations
L1: Status of Watershed Assessment Units L-2
L2: Status of Large River Assessment Units L-42
L3: Status of Lake Erie Assessment Units L-43
L4: Section 303(d) List of Prioritized Impaired Waters (Category 5) L-44
L5: Category 4B Demonstrations Contained in Approved Ohio TMDLs to Date L-85
L5.1: Projects included in the 2012 Integrated Report L-85
L5.2: Projects included in the 2014 Integrated Report L-97

Section M: An Overview of Ground Water Quality in Ohio
M1: Introduction M-1
M2: Ohio's Ground Water Programs M-2
M3: Ohio's Major Aquifers M-4
M4: Site-Specific Ground Water Contamination Summary M-8
M5: Major Sources of Ground Water Contamination M-10
M6: Summary of Ground Water Quality by Aquifer M-15
M7: Conclusions and Future Directions for Ground Water Protection M-40

Section N: References

List of Tables and Figures

Tables

B-1. Ohio's water resource statistics B-1
B-2. List of Ohio's principal streams and large rivers B-4
B-3. 2020 goals for four beneficial uses, Lake Erie and the Ohio River B-9
C-1. OWDA loans administered during calendar years 2015-2016 ..... C-26
D-1. Ohio water quality standards in the 2018 IR D-8
D-2. Data types used in the 2018 IR D-10
D-3. Descriptions of data used in the 2018 IR from sources other than Ohio EPA D-11
E-1. Comparison between fish concentration values and FCA program values E-3
E-2. Example data for calculating a weighted average fish tissue value E-4
E-3. A summary of changes in attainment from 2016 to 2018 IR E-6
E-4. Waters not supporting the human health use because levels of PCBs or mercury in fish tissue exceed the threshold level upon which the WQS criterion is based. These waters are category 5. ..... E-7
E-5. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based. These waters are category 1 ..... E-9
E-6. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based and which were categorized as impaired in the 2016 IR. These waters have become category 1 with the current assessment E-11
E-7. Waters with contaminants other than PCBs and mercury that affect fish tissue (included on the 303(d) list). These waters are category 5 ..... E-11
E-8. Waters for which the existing unimpaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 1h E-11
E-9. Waters for which the existing impaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 5h E-14
E-10. Waters with current fish tissue data where inadequate samples exist to determine impairment status. These waters are category 3i E-20
E-11. Large rivers and their impairment status E-22
E-12. Inland lakes and their impairment status E-23
E-13. Lake Erie assessment units and their impairment status E-25
F-1. Summary of the RU assessment methods F-2
F-2. Determining assessment status of Lake Erie shoreline AUs F-5
F-3. Determining assessment status of WAUs and LRAUs F-7
F-4. Recreation index score matrix F-8
F-5. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the western basin (Sandusky Bay and west) F-11
F-6. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the central basin (east of cedar point) F-12
F-7. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the central basin shoreline AU F-14
F-8. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the western basin shoreline AU F-14
F-9. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the islands shoreline AU. F-15

F-10. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the Sandusky basin shoreline AU. F-15
F-11. Aggregated exceedance frequencies at 65 Lake Erie public beaches from 2013-2017 (pooled by Lake Erie shoreline AU to report use support). F-17
F-12. Annual Ohio EPA *E. coli* sampling effort and RU assessment (using Ohio EPA data) in Ohio streams, rivers and inland lakes, 2011-2017 recreation seasons F-18
F-13. Overall differences in the assessment of RU attainment, 2010-2018 ..... F-18
F-14. Summary assessment status of the RU in Ohio's WAUs by assessment cycle F-20
F-15. Summary assessment status of the RU in Ohio's LRAUs F-21
F-16. Summary assessment status of the RU for inland lakes, 2013-2017 ..... F-22
F-17. Swimming advisory posting at Ohio's inland lake public beaches (2013-2017). F-25
F-18. Proposed Ohio Lake Erie AUs F-28
F-19. Data collected in Ohio waters of Lake Erie that is credible data level 3 or could likely be approved as level 3 with review and coordination F-31
F-20. The number of 10-day time frames exceeding the 30 percent coverage threshold (with 20,000 cells/mL) or greater) in the western basin open water unit for each year beginning in 2012 ..... F-36
G-1. Summary of aquatic life use assessment for Ohio's WAUs, LRAUs and LEAUs: 2002-2018 Integrated Report cycles G-9
G-2. Breakdown by size category of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-3. Breakdown by designated or recommended aquatic life use of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-4. Prevalence of the top five causes of aquatic life use impairment in WAUs and LRAUs based on biological and water quality survey data collected from 2003-2016 ..... G-12
H-1. PDWS attainment determination. H-4
H-2. Waters designated as impaired for (not supporting) the PDWS beneficial use. H-12
H-3. Summary of PDWS assessment results for the nitrate, pesticide and algae indicators H-18
I-1. List of high-quality wetland areas I-3
I-2. List of significant wetland areas I-8
I-3. Proposed lake habitat use criteria I-15
I-4. Summary of the lake habitat use assessment for lakes sampled in 2015-2016 using the draft assessment methodology described in this section I-17
J-1. Category definitions for the 2018 Integrated Report and 303(d) list J-2
J-2. Potential listing opportunities in Ohio's listing framework. J-3
J-3. Priority points for impaired AUs. J-5
J-4. Summary of results for each beneficial use J-16
J-5. Number of AUs removed from or added to the 303(d) list J-20
J-6. Summary of reasons for changes to the 2018 303(d) list J-20
J-7. Removals from the 303(d) list because of a flaw in the original listing J-21
J-8. Removals from the 303(d) list because of new data J-21
J-9. Addition to the 303(d) list because of flaw in original listing J-23
J-10. Additions to the 303(d) list because of new data J-23
J-11. Ohio TMDLs approved by U.S. EPA at the 11-digit hydrologic unit scale J-27
J-12. Ohio TMDLs approved by U.S. EPA at the 12-digit hydrologic unit scale J-31
J-13. Short-term schedule for TMDL development J-33
M-1. Summary of Ohio's Ground water protection programs. M-3
M-2. Ground water contamination summary M-8
M-3. Major sources of potential ground water contamination M-14

M-4. Counts of public water systems where 2007-2017 decadal mean values of compliance data occur in the Watch List and Impaired Category M-17
M-5. Counts of wells where 2007-2017 decadal mean values of AGWQMP data occur in the Watch List and Impaired Category (maximum values used for nitrate). M-27

Figures

B-1. Map of Ohio's principal streams and large rivers. B-2
B-2. Ohio Scenic River System B-3
C-1. Ohio Lake Erie AOCs and major Lake Erie tributaries C-7
D-1. Ohio's large rivers (rivers with drainages greater than 500 mi^2) and their watersheds D-3
D-2. Ohio's 12-digit WAUs and 8-digit hydrologic units D-4
D-3. Ohio's Lake Erie assessment units – western basin, islands, Sandusky basin and central basin shorelines and open water areas D-5
E-1. Illustration of the relationship among the WQS values, the values that trigger issuance of fish consumption advisories (FCAs) and the resulting decision regarding waterbody impairment associated with an FCA. E-2
E-2. Flowchart for the categorization of fish tissue data for the IR E-6
F-1. Lake Erie public beaches sampled under Ohio's bathing beach monitoring program. F-3
F-2. Erie and Sandusky County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-3. Cuyahoga and Loraine County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-4. Example of bacteria sampling locations, upper Walhonding River study area (2010) F-6
F-5. Frequency of advisory postings at Ohio's Lake Erie public beaches F-16
F-6. Histogram of RU index scores for Ohio's WAUs F-19
F-7. New Ohio Lake Erie AUs F-29
F-8. Monitoring locations in the western basin of Lake Erie in 2017 ..... F-30
F-9. Bloom severity observed and projected (with 40 percent TP reduction) since 2002 ..... F-35
G-1. Flowchart for determining if WAU score can be derived based on available sampling locations. G-5
G-2. Percent attainment status and goal progress ("100 percent by 2020") for monitored miles of Ohio's LRAUs (23 rivers/38 AUs/1247.54 miles total) G-10
G-3. Average full attainment watershed score for Ohio's HUC11 WAUs (IR cycles 2002-2010) and HUC12 WAUs (IR cycles 2010-2018). G-13
G-4. Breakdown by designated or recommended aquatic life use of sites in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 (n= 3,911 sites) G-13
G-5. Status and trend of aquatic life use "80 percent by 2020" goal for wading and principal stream and river sites in Ohio based on the last five IR cycles. G-14
G-6. Average IBI scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-16
G-7. Average MIwb scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-17
H-1. Ohio WAUs, LRAUs and LEAUs that contain at least one active surface water drinking water intake. H-2
H-2. AUs with nitrate indicator results H-9
H-3. AUs with pesticide indicator results H-10
H-4. AUs with algal toxin indicator results H-11
I-1. Supplemental weekly sampling locations for chlorophyll and microcystin; sampled by University of Toledo and the Ohio State University/Stone Laboratory (boxed sites) researchers in 2017 ..... I-20
J-1. Listing by smaller AUs and individual beneficial uses J-3
J-2. Priority points assigned based on use impairment or other factors (extra points). J-4

J-3. Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey. J-7
J-4. Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey. J-9
J-5. Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009. J-10
J-6. Key steps in the state TMDL and binational Annex 4 processes. J-13
J-7. Summary of 2018 IR results for watershed AUs by beneficial use. J-17
J-8. Summary of 2018 IR results for large river AUs by beneficial use. J-18
J-9. Summary of 2018 results by AU type. J-19
J-10. Summary of reasons for changes to the 2016 303(d) list. J-21
M-1. Aquifer types in Ohio modified from ODNR glacial and bedrock aquifer maps. M-4
M-2. Iron distribution in AGWQMP wells, overlain on major aquifers. M-5
M-3. Manganese distribution in AGWQMP wells, overlain on major aquifers. M-6
M-4. Distribution of public water systems on impaired list for arsenic for both treated and raw waters. M-34
M-5. Distribution of public water systems in impaired category and on the watch list for sulfate in raw water. M-35
M-6. Distribution of public water systems on fluoride MCL watch list for treated and raw water. M-36
M-7. Distribution of public water systems with maximum nitrate in treated and raw water greater than the MCL. M-37

List of Acronyms and Abbreviations

AmphIBI	amphibian index of biotic integrity
AMP	Atrazine monitoring program
AOC	Area of Concern (as identified under the Great Lakes Water Quality Agreement)
ARRA	American Recovery and Reinvestment Act of 2009
AU	assessment unit
BAV	beach action value
BEACH	Beaches Environmental Assessment and Coastal Health (Act)
BMP	best management practice
BNR	biological nutrient removal
BUI	Beneficial Use Impairment (as described in the Great Lakes Water Quality Agreement)
CABB	Center for Applied Bioassessment and Biocriteria
CAFO	Concentrated Animal Feeding Operations
CDBG	Community Development Block Grant
CDC	Center for Disease Control
cfu	colony forming unit
Corps	U.S. Army Corps of Engineers
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSO	combined sewer overflow
CSP	Conservation Stewardship Program
CWH	coldwater habitat
CWA	Clean Water Act
DDAGW	Division of Drinking and Ground Waters
DDT	dichlorodiphenyltrichloroethane
DEFA	Division of Environmental and Financial Assistance
DES	Division of Environmental Services
DLG	digital line graph
DRG	digital raster graphic
DSW	Division of Surface Water
EAG	External Advisory Group
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
EWH	exceptional warmwater habitat
FCA	fish consumption advisory
FFY	federal fiscal year
FSA	Farm Service Agency
FWPCA	Federal Water Pollution Control Act
GIS	Geographic Information System
GLLA	Great Lakes Legacy Act
GLRC	Great Lakes Regional Collaboration
GLRI	Great Lakes Restoration Initiative
GLSM	Grand Lake St. Marys
GLWQA	Great Lakes Water Quality Agreement
GRP	Grassland Reserve Program
GRTS	Generalized Random Tessellation Stratified (survey design)
HAB	harmful algal bloom
HSD	honest significant difference
HUC	hydrologic unit code

IBI	index of biotic integrity
ICI	invertebrate community index
IDP	indirect discharge permit
IR	Integrated Report
kg	kilogram
L	liter
LA	load allocation
LAMP	lakewide action and management plan
LCI	Lake Condition Index
LDI	Landscape Development Intensity
LEAU	Lake Erie assessment unit
LEC	(Ohio) Lake Erie Commission
LENT	Lake Erie nutrient targets
LEPF	(Ohio) Lake Erie Protection Fund
LH	lake habitat
LHD	local health district
LRAU	large river assessment unit
LRW	limited resource water
LTCP	long-term control plan
MBI	Midwest Biodiversity Institute
MF	membrane filter
mg	milligram
mi^2	square miles
mL	milliliter
MIwb	modified index of well-being
MOR	monthly operating data
MPN	most probable number
MRBI	Mississippi River Basin Initiative
MS4	municipal separate storm sewer systems
MWH	modified warmwater habitat
NARS	National Aquatic Resource Survey
NCCA	National Coastal Condition Assessment
NCWQR	National Center for Water Quality Research
NEORSD	Northeast Ohio Regional Sewer District
ng	nanogram
NHD	National Hydrography Dataset
NLCD	National Land Cover Dataset
NOAA	National Oceanic and Atmospheric Administration
NOI	notice of intent
NPDES	National Pollutant Discharge Elimination System
NPS	nonpoint source
NRCS	Natural Resources Conservation Service
NSMP	Nonpoint Source Management Plan
NSSP	National Shellfish Sanitation Program
NWI	National Wetland Inventory
NWQI	National Water Quality Initiative
OAC	Ohio Administrative Code
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
OMZA	outside mixing zone average

ORC	Ohio Revised Code
ORSANCO	Ohio River Valley Water Sanitation Commission
OSIP	Ohio Statewide Imagery Program
OTMP	Ohio Tributary Monitoring Program
OWDA	Ohio Water Development Authority
OWRC	Ohio Water Resources Council
PAHs	polyaromatic hydrocarbons
PHA	public health advisory
ppb	parts per billion
PCB	polychlorinated biphenyls
PCR	primary contact recreation
PDWS	public drinking water supply
POTW	publicly owned treatment works
PS	point source
PTI	permit to install
PTO	permit to operate
PWS	public water supply
QA	quality assurance
QC	quality control
QDC	qualified data collector
QSC	Quicksilver Caucus
RAP	Remedial Action Plan
RAS	return activated sludge
RF3	Reach File Version 3
RM	river mile
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SFY	state fiscal year (July 1 to June 30)
SIU	significant industrial user
sq mi	square miles
SSM	single-sample maximum
STORET	STOrage and RETtrieval (a U.S. EPA water quality database)
STV	statistical threshold value
SWIF	Surface Water Improvement Fund
SWIMS	Surface Water Information Management System
TDS	total dissolve solids
TMDL	total maximum daily load
TNTC	too numerous to count
TOC	total organic carbon
µg	microgram
USDA	United States Department of Agriculture
U.S. EPA	United States Environmental Protection Agency
USC	United States Code
USGS	U.S. Geological Survey
UV	ultraviolet
VIBI	vegetation index of biotic integrity
VIBI-FQ	VIBI – floristic quality
WAS	waste activated sludge
WAUs	watershed assessment unit
WBLE	western basin of Lake Erie

WEG	(Ohio EPA's) wetland ecology group
WHIP	Wildlife Habitat Incentives Program
WHO	World Health Organization
WLA	wasteload allocation
WPCLF	Water Pollution Control Loan Fund
WQ	water quality
WQC	Water Quality Certification (Section 401)
WQM	Water Quality Management (plan)
WQPSD	Water Quality Permit Support Document
WQS	water quality standards
WRP	Wetlands Reserve Program
WRRSP	Water Resource Restoration Sponsor Program
WSRLA	Water Supply Revolving Loan Account
WWH	warmwater habitat
WWTP	wastewater treatment plant

Executive Summary

The *Ohio Integrated Water Quality Monitoring and Assessment Report* summarizes water quality conditions in the State of Ohio. This report satisfies Ohio's water quality reporting requirements under Sections 303(d), 305(b) and 314 of the federal Clean Water Act. This report was last updated in 2016. **Analysis and listing changes are based on data collected during 2015 and 2016 for aquatic life and human health (fish tissue) uses; recreation and public drinking water supplies uses consisted of data from 2016 and 2017**.

Using methods devised to determine the suitability of waters for four specific uses—aquatic life (fish and aquatic insects), recreation (such as boating and swimming), human health (related to fish tissue contamination) and public drinking water supplies—available data were compared with water quality goals. The results indicate which waters are meeting goals and which are not. Waters not meeting the goals for one or more of the four types of uses are referred to as *impaired.* The waters found to be impaired are prioritized and scheduled for further study and restoration.

This report describes the methods used to judge impairment of each type of use and have evolved in each reporting cycle as the Agency gains access to more data and develops better ways to interpret them.

Results are reported for 1,538 watershed units, 38 large river units (in Ohio's 23 rivers that drain more than 500 square miles) and seven Lake Erie units. Additional information on streams draining between 20 and 500 square miles is also presented as this subset of waterbodies is used to calculate and track progress of Ohio's 80 percent full attainment by 2020 goal for wading and principal streams and rivers.

The percent of monitored miles of Ohio's large rivers in full attainment stayed steady compared to the same statistic reported in the 2016 IR. The 100 percent full attainment by 2020 aquatic life goal statistic for Ohio's largest rivers now stands at 87.5 percent, compared to 87.4 percent from the 2016 report. Conversely, smaller streams continue to improve with the percent of assessed sites in full aquatic life use attainment increasing from 66.1 percent to 69.3 percent. The top reasons for aquatic life impairment continue to be sediment, nutrients, habitat modification, hydromodification and organic enrichment.

For the human health use (fish tissue), polychlorinated biphenyl (PCB) contamination in fish is the cause of most of the human health impairments in Ohio. Mercury is the second leading cause.

The chemicals of concern causing impairment of the public drinking water supply use include nitrate, atrazine and cyanotoxin (due to certain algae). The primary source of the chemicals is nonpoint source runoff from agricultural land use. Additional sources of nitrate include home and commercial fertilizer application, failing septic systems, unsewered areas and wastewater treatment plant discharges. Of the 119 public drinking water supply assessment units, 37 are now listed as impaired by algae, with another 17 on the watch list for algae.

The recreation (bacteria) use analysis focuses on the number of bacteria in the water. For Lake Erie public beaches, the frequency of swimming advisories varies widely, ranging from 1.2 percent to more than 50 percent. Generally, beaches located near population centers have the most problems. Results are also reported for streams and inland lakes.

The recreation use has also been assessed for algae impacts in the western basin of Lake Erie. The western basin shoreline, the islands shoreline and the western basin open water assessment units are all listed as impaired by algae.

Of the 6,316 possible category assignments, the 2018 303(d) list includes changes in 209, with 69 delistings and 135 new listings. Most 303(d) removals and new listings are due to new data.

Changes since the 2016 Integrated Report

Changes made between the 2016 Integrated Report and the 2018 Integrated Report are as follows:

- This report contains revised assessment units for the entire Ohio portion of Lake Erie in Section D1.
- This report also discusses future methodology development for recreation assessment of Lake Erie based on algae blooms in Section I.
- The methodology for evaluating the recreation (bacteria) use has been updated to include the revised *E. coli* water quality criteria, effective January 2016, in Section F1.
- A new subcategory, 5p, was added to track which impairments are based on threatened status, primarily for nutrients.

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

D7. Public Comments and Responses to Comments on Draft Report

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

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

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

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

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

Comments Related to Specific Watersheds

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Addressing Waters Not Meeting Water Quality Goals

The federal Clean Water Act (CWA) requires that states identify waters not meeting water quality goals and then prioritize them for action to restore their beneficial uses[1]. The resulting list of prioritized impaired waters is known as the 303(d) list. Ohio's 2018 303(d) list is presented in Section L4 of this report.

Ohio made substantial changes to its listing process in 2010 (see Sections A and J in the *2010 Integrated Report* [Ohio EPA, 2010]); Ohio's *2012 Integrated Report* and 303(d) list (Ohio EPA, 2012) contained relatively few changes compared to the major adjustments made in 2010. A significant change to the 2014 report included the addition of a new indicator (algae) to the public drinking water supply (PDWS) use. The 2016 report contained changes in how the information was organized and what data sets were used (for instance, 2015 data was included for both recreation and PDWS uses) and was amended to include new open water assessment units for Lake Erie and a new recreation assessment methodology based upon algae. In 2018, the most significant changes are to the recreation use assessments and how Lake Erie Assessment Unit are defined (increased from six to seven units). The assessment based on bacteria has been updated to comply with the new *E. coli* WQS which include a 90-day geometric mean and statistical threshold value (see Sections F1-F3). In addition, an assessment method for recreation based on algae for the western basin of Lake Erie has been added in Section F4.

This section outlines the listing framework, lays out the prioritizing and delisting processes and results and reports on the status of Ohio total maximum daily load (TMDL) efforts including schedules for future TMDLs in Ohio.

J1. Ohio's 303(d) Listing Framework

The process of listing involves assigning a condition status (a category) for each of four beneficial uses for each assessment unit (AU). Data requirements, descriptions of available data, assessment methodologies and results were discussed and reported by individual beneficial use in Sections E, F, G and H.

In 2010, Ohio modified the five-category listing structure suggested by U.S. EPA to accommodate listing by beneficial use and introduced subcategories to give more information about the status of each water. In 2012, one additional subcategory - t - was added to aid reporting the status of AUs relative to approved TMDLs and data availability. In 2014, the "t" subcategory was altered slightly and a new category - d - was added to better reflect circumstances encountered as Ohio EPA revisits watersheds having approved TMDLs. In 2016, a new subcategory in Category 5 (5-alternative or 5-alt) was added to report on alternative restoration approaches for CWA 303(d) listed waters. Such waters will still require TMDLs until water quality standards are achieved. Ohio does not have any AUs listed under 5-alt in this report but anticipates using this subcategory in the future. In 2018, a new subcategory "p" is added under Category 5 to track which impairments are based on threatened status, primarily for nutrients. Table J-1 summarizes the categories and subcategories used in this report.

Also, in 2010, Ohio began listing by beneficial use within each AU and reporting on a smaller AU size. Watershed AUs shifted from an average size of 130 square miles to 27 square miles. Under the old system, an impairment of one beneficial use caused the AU to be Category 5 (impaired) regardless of the status of other uses.

[1] Beneficial uses include aquatic life, human health (fish contaminants), recreation and public [drinking] water supply.

Table J-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[2]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[3] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[4]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

Figure J-1 illustrates the significance of these changes in the listing procedures. A = aquatic life use; R = recreation use; H = human health use; and P = public water supply use. The numbers refer to the categories described in Table J-1 above. In the example, an AU listed in 2008 as impaired (category 5) appeared on the 2010 303(d) list as five units with four uses each; thus, reporting one piece of information changed to reporting 20 pieces of information. Whereas the 2008 list indicated only that the unit was impaired, the new listing indicates all the following information:

- Aquatic life use is impaired (5) in one unit, not impaired (1) in one and unknown (3) in one. A TMDL to address impairments has been completed in one unit (4A) and the impairment in the remaining unit is being addressed in some other way (4B, for example, a discharge permit).
- Recreation use is impaired (5) in three units, unknown (3) in one and a TMDL to address the impairment in one unit has been completed (4A).
- Human health results based on fish tissue analysis indicate that four of the five units are impaired (5) and one is unknown (3).
- Public drinking water supplies exist in only two of the five units and one of those is impaired (5). The status of the other is unknown (3).

[2] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[3] HUC means hydrologic unit code.
[4] Ohio currently has no waters that are listed under this subcategory.

For the aquatic life use, Ohio EPA continues the transition that began in 2010 of translating data evaluated at the 11-digit hydrologic unit size to the smaller 12-digit size. We expect that the few remaining relic categories will be dealt with as those areas are monitored again.

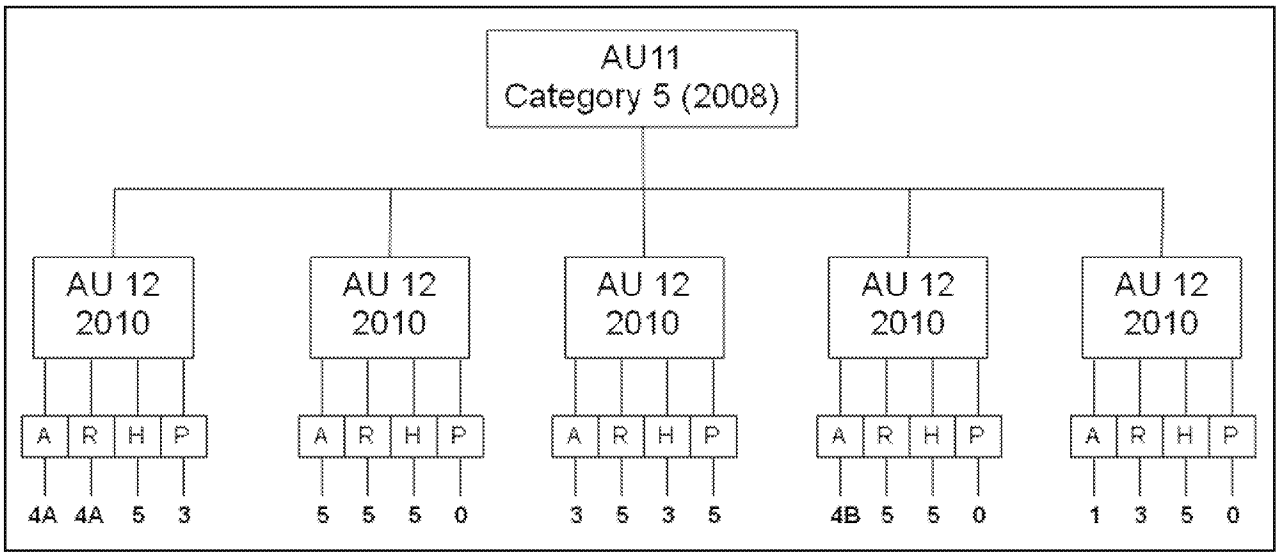

Figure J-1 — Listing by smaller AUs and individual beneficial uses.

Table J-2 shows the number of potential listings that could result from the combination of smaller AUs and listing by individual use.

Table J-2 — Potential listing opportunities in Ohio's listing framework.

	2008 and Before			2010 and After		
AU Types	Number of AUs	Status Reports per Unit	Total Number of Possible Listings	Number of AUs	Status Reports per Unit	Total Number of Possible Listings
Watershed	331	1	331	1538	4	6,152
Large river	23	1	23	38	4	152
Lake Erie shore	3	1	3	3	4	12
Totals	357	1	357	1,579	4	6,316

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

As previously stated, the impaired waters are identified and assigned a category by individual beneficial use in Sections E, F, G and H. After waters are identified as impaired and it is determined that a TMDL is required, the waters are prioritized to produce the 303(d) list (see Section L4). Because Ohio uses a highly integrated monitoring and TMDL linkage to ensure efficient use of resources, it makes sense to continue to set priorities by AU rather than by individual use.

Ohio River and Open Waters of Lake Erie

ORSANCO has lead responsibility for the multi-jurisdictional Ohio River water quality as outlined in Section D2. Binationally, the U.S. and Canada are working together under the GLWQA to address water quality issues in Lake Erie. Ohio EPA is actively participating in TMDLs for tributaries as well as many other actions for Lake Erie outlined in Section J3, so priority for Ohio EPA-initiated TMDLs is assigned a low priority for these waters. TMDLs in watersheds that drain to the Ohio River and Lake Erie will reduce the pollutant load delivered to each water.

Inland Waters and Lake Erie Shoreline

A point system is used to assign priority to impaired AUs. A total of 22 points could be assigned to an AU, distributed as shown in Figure J-2. The priority results for specific AUs are reported in Section L and in AU summary information available on the web page.

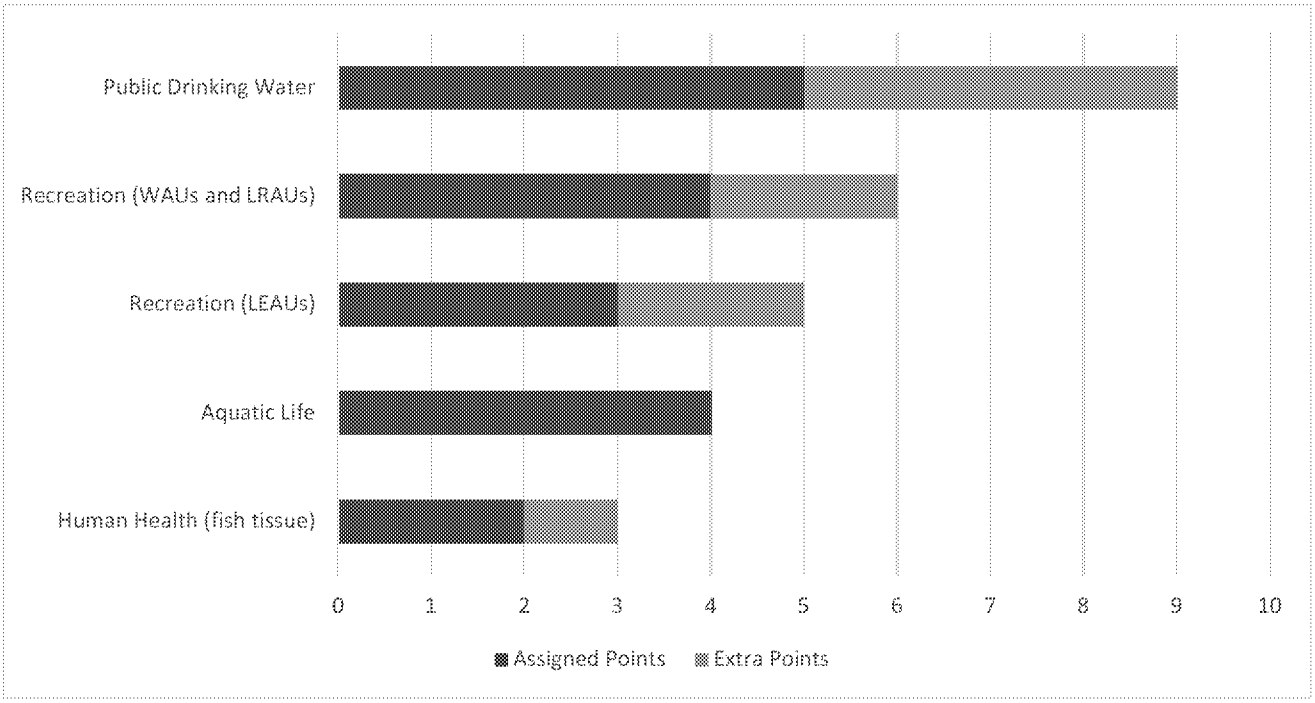

Figure J-2 — Priority points assigned based on use impairment or other factors (extra points).

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.

Two additional points may be awarded to AUs that are impaired for the recreation use and contain Class A waters. Class A waters are those most suitable for recreation, such as popular paddling streams and lakes with public access points developed, maintained and publicized by governmental entities. Priority points for Lake Erie recreation use are calculated based on the bathing water geometric mean for *E. coli* and the percentage of days that the AU exceeded that criteria. An impaired AU gets one point if the percentage of days in exceedance was in the range of 0 to 10 percent; two points if in the range of 10.1 percent to 20

percent; and three points if the percentage of days in exceedance was greater than 20.1 percent. Two additional points may also be awarded to AUs that are impaired for recreation use based on algae.

Table J-3 — Priority points for impaired AUs.

Point Values	Condition	Number of AUs		
		WAUs	LRAUs	LEAUs
Human Health Use impairment (fish tissue contaminants) (maximum of 3 points)				
2	Listed as impaired for Fish Contaminants (Human Health Use)	436	32	4
1	Additional point in AUs that exceed 500 ppb for PCBs or Hg	3	0	0
Recreation Use impairment – WAUs and LRAUs (maximum of 6 points)				
1	Listed as impaired with AU score between 0 and 25	108	0	
2	Listed as impaired with AU score between 75.1 and 100	92	17	
3	Listed as impaired with AU score between 25.1 and 50	271	2	
4	Listed as impaired, with AU score between 50.1 and 75	279	7	
2 extra	Additional points if AU contains Class A waters	74	26	
Recreation Use impairment - LEAUs (maximum of 5 points)				
1	Listed as impaired with 0 to 10% of season exceeding *E. coli* criteria			1
2	Listed as impaired with 10.1% to 20% of season exceeding *E. coli* criteria			1
3	Listed as impaired with > 20.1% of season exceeding *E. coli* criteria			2
2 extra	Additional points if AU is impaired for algae			3
Aquatic Life Use impairment (maximum of 4 points)				
1	Listed as impaired, with AU score between 0 and 25	161	0	2
2	Listed as impaired, with AU score between 75.1 and 100	35	8	0
3	Listed as impaired, with AU score between 25.1 and 50	119	2	2
4	Listed as impaired, with AU score between 50.1 and 75	93	2	0
Public Drinking Water Use impairment (maximum of 9 points)				
5	Listed as impaired for Public Drinking Water Use for one indicator	33	5	6
2 extra	Additional points in AUs impaired for each additional indicator	1	3	0
1	Not listed as impaired, but on watch list; one point for each indicator	33	3	0

As outlined in Section C3, the priority schedule for TMDL projects in Table J-15 was developed considering the above information, as well as the following:

- Social Factors (highly used recreational waters, drinking water supply for significant populations, ongoing/sustained involvement of any local groups or government, etc.)
- Value Added (is a TMDL the most efficient way to achieve improved water quality?)
- Is there an approved watershed action plan – if so how many implemented projects?
- How much regulatory authority exists over sources?
- Is there an alternative way to improve water quality more quickly than a TMDL? (for example, immediate implementation of an existing plan or projects, or imposing more stringent permit limits to address a localized problem)
- Are there other factors in play? Examples include:
    - Pending enforcement for a discharger (possible 4B option)
    - U.S. Army Corps of Engineers modeling of reservoir discharge to improve downstream water quality
    - Local or statewide strategy or requirements in place to address an issue/pollutant (for example, new health department rules for home sewage treatment systems if they are sole/primary source of impairment)

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.

In the *2014 Integrated Report*, Ohio listed waters impaired by algal toxins for the first time. In the 2016 report, more waters are listed, especially lakes and reservoirs. 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.

Based on a review of the inland lakes or reservoirs that were listed as impaired or on the Watch List for algae indicators in the 2014 Integrated Report, as well as the more recent data collected for algae at PDWS with intakes in inland lakes or reservoirs that led to the 303(d) listing in this report, the following inland lakes were chosen as Ohio's priorities for the next few years:

- Tappan Lake in Harrison county (upper Little Stillwater Creek)
- W.H. Harsha Lake in Clermont County (Lucy Run - East Fork Little Miami River)
- Clyde/Beaver Creek Reservoir in Seneca County (Beaver Creek, Green Creek)

The impairments (or watch list parameters) cited include nitrate, pesticides and algae indicators. Where there is a TMDL developed, it is older and/or does not include the stream reaches that most impact the lake/reservoir. In most cases, there are active local parties interested and/or there is a sizable population served by these sources. Ohio EPA considers nutrients (primarily phosphorus as the TMDL parameter) to be the priority for the inland lake efforts. However, the cause of impairment in more than one area also includes pesticides and/or nitrates, so other pollutants may be added to the TMDL or alternative plan. These waters are listed on the 303(d) Priority list in Section L4 as follows:

AU Number	AU Name	Sq. Mi. in Ohio	Human Health	Recreation	Aquatic Life	PDW Supply	Priority Points
05040001 15 03	Upper Little Stillwater Creek	29.72	1	1	3	5	5
05090202 12 03	Lucy Run-East Fork Little Miami River	32.48	1	1	5	5	7
04100011 12 02	Beaver Creek	29.3	3i	4Ah	4A	5	5
04100011 12 03	Green Creek	30.78	1	5	4A	5	9

While they do not have the highest priority points, the AUs with higher priority points that include a PDWS impairment already have a TMDL under development or will be addressed through other means such as the Great Lakes Water Quality Agreement Annex 4 nutrient reduction efforts discussed in J3.

Tappan Lake

- Stillwater Creek basin – primarily forest with mining influences.
- 2,350 acres of water surface.
- Provides drinking water to the Village of Cadiz (pop. ~ 3,350).
- Lake is operated by the U.S. Army Corp of Engineers. It is a multipurpose project for flood reduction, recreation and fish and wildlife enhancement.
- Assessed by Ohio EPA in 2012-2013 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin).

2018 IR Update

The Tappan Lake Nutrient Reduction Initiative (TLNRI) was formed at the end of 2017 by the Muskingum Watershed Conservancy District and the Village of Cadiz. TLNRI's goal is to eliminate the presence of harmful algal blooms and their resultant water-borne toxins in Tappan Lake within the next decade. The TLNRI has outlined the following steps toward achieving their goal:

- Phase 1: Comprehensive study of existing water quality data for the watershed and identification of gaps (year one)
- Phase 2: Collection of data to fill gaps, evaluation and selection of remedial actions for the watershed (years two through four)
- Phase 3: Implementation of action plan for the watershed (years five through 10)

Ohio EPA is an active partner in the initiative and will provide support through participation in the four subgroups. The Stillwater Creek watershed is a high priority project for either a TMDL or an alternative plan. The Agency will continue to participate in the TLNRI efforts and determine which approach is most appropriate as that work unfolds.

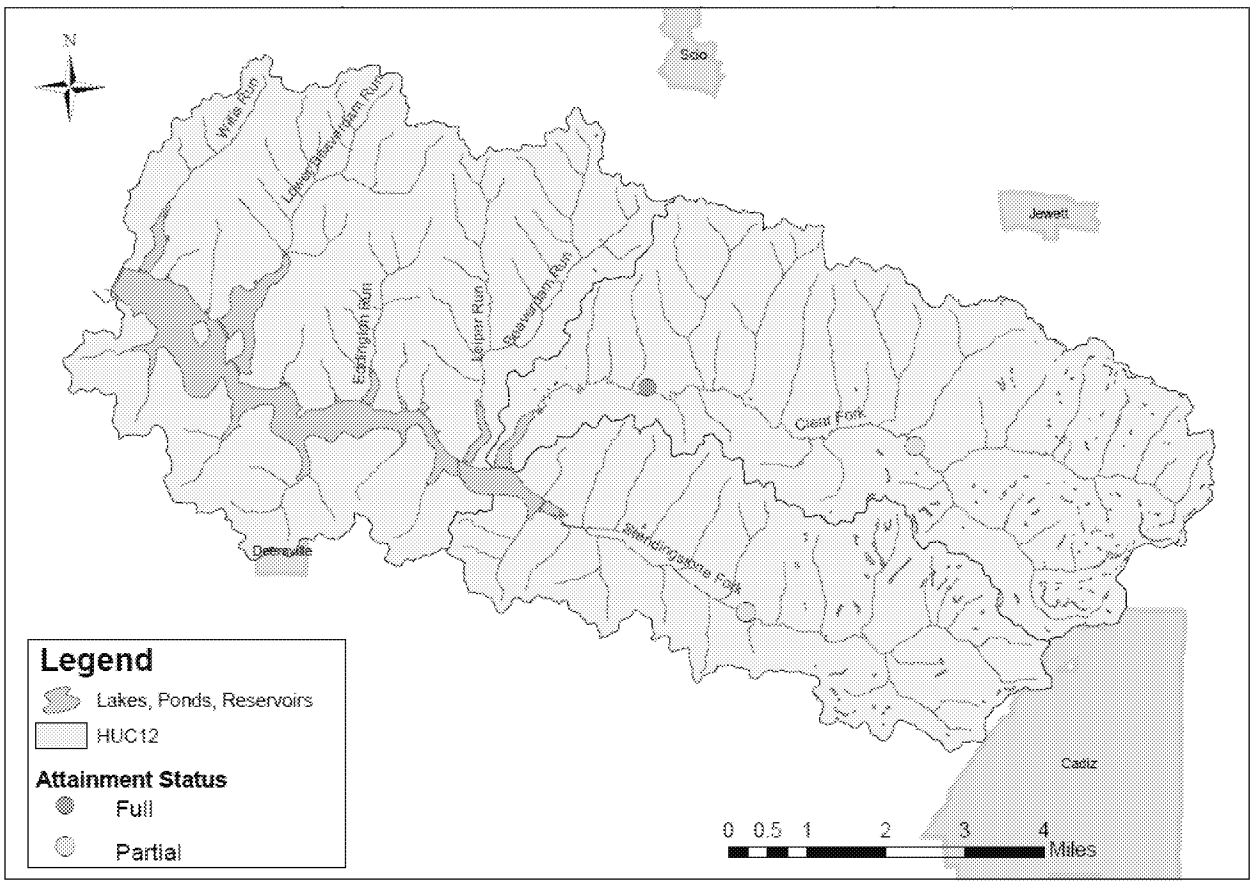

Figure J-3 — Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey.

William H. Harsha Lake

- Located in the East Fork of the Little Miami River watershed – largely agriculture and forest with some urban influence.
- 2,160 acres of water surface.
- Lake is operated by the U.S. Army Corp of Engineers and is a multipurpose project for flood reduction, water supply, recreation and wildlife habitat.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin) and placed it on the watch list for atrazine.

From the *Ohio EPA East Fork Little Miami River Technical Support Document, 2014*:

- Clermont County operates a community public water system that serves a population of approximately 117,097 people. The water supply sells water to the village of Batavia, village of Williamsburg and New Richmond Robin-Grays water system. Clermont County operates two ground water plants and one surface water plant. The BMW surface water plant draws water from an intake structure on Harsha (East Fork) Lake. The system's treatment capacity is approximately 27.5 million gallons per day, but current average production is 12.5 million gallons per day.
- There are several environmental organizations active in the East Fork Little Miami River watershed. The oldest of these is Little Miami Incorporated (LMI) which has been active for 45 years. Most of LMI's activities have involved the purchase of conservation easements or property purchases in the riparian zone of the river. Clermont County and SWCDs in Clermont, Brown, Highland and Clinton counties formed the East Fork Watershed Collaborative to take advantage of ODNR's Watershed Coordinator Program.
- Several research projects have been initiated in the East Fork watershed and Harsha Lake by U.S. EPA's National Exposure Research Laboratory in Cincinnati and the U. S. Army Corps of Engineers. Among other topics research and monitoring are examining HABs and nutrients, impacts on the Clermont County water intake, carbon sequestration, methane release, nutrient trading, environmental tipping points and fish population genetics. Currently, seven different projects are conducting monitoring in Harsha Lake.

2018 IR Update

The East Fork Watershed Cooperative, formed in 2001, continues to be active in addressing water quality issues in the East Fork Little Miami River watershed. The Cooperative is in the process of updating watershed action plans into Nine Element Nonpoint Source Implementation Strategy Plans. The first updated plan for the Fivemile Creek HUC 12, approved by Ohio EPA on July 31, 2017, is located upstream of Harsha Lake. The East Fork Little Miami River watershed is a high priority TMDL project for TMDL development. The Agency plans to initiate the next steps in the TMDL development process by the 2020 IR.

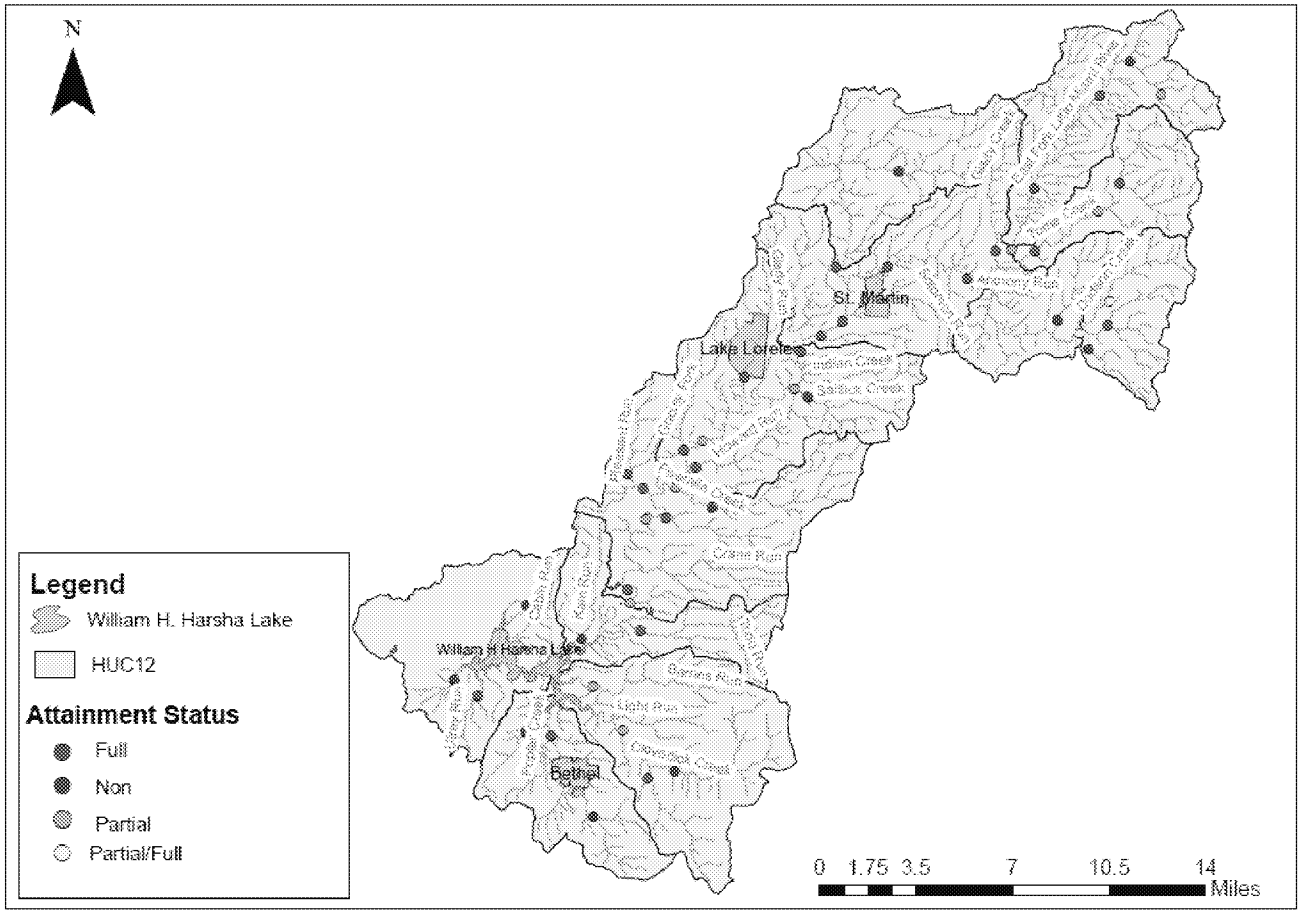

Figure J-4 — Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey.

Clyde/Beaver Creek Reservoir (up-ground)

- Sandusky river watershed - primarily agricultural land use above reservoir.
- 110 acres of water surface.
- Provides drinking water to the City of Clyde (pop. ~6,320).
- Reservoir was assessed by Ohio EPA in 2009-2010 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* placed the lake on the watch list for PDWS use based on algae indicators (microcystin) and nitrates. In the *2016 Integrated Report* it was listed as impaired for PDWS use based on algae indicators.
- The Raccoon Creek reservoir that also serves the City of Clyde is filled with water from Beaver Creek. The Raccoon creek reservoir was listed in the 2014 IR as impaired for PDWS based on algae indicators (microcystin).
- A TMDL for the lower Sandusky River was completed by Ohio EPA and approved by U.S. EPA but did not set specific loads for Beaver Creek since the stream was not listed as impaired.

2018 IR Update

Sampling of Raccoon Creek reservoir was completed in 2016 and 2017 as part of Ohio EPA's inland lakes sampling program. The results of this sampling will be included in the 2020 IR and will be used to direct the next steps in the restoration process for this watershed.

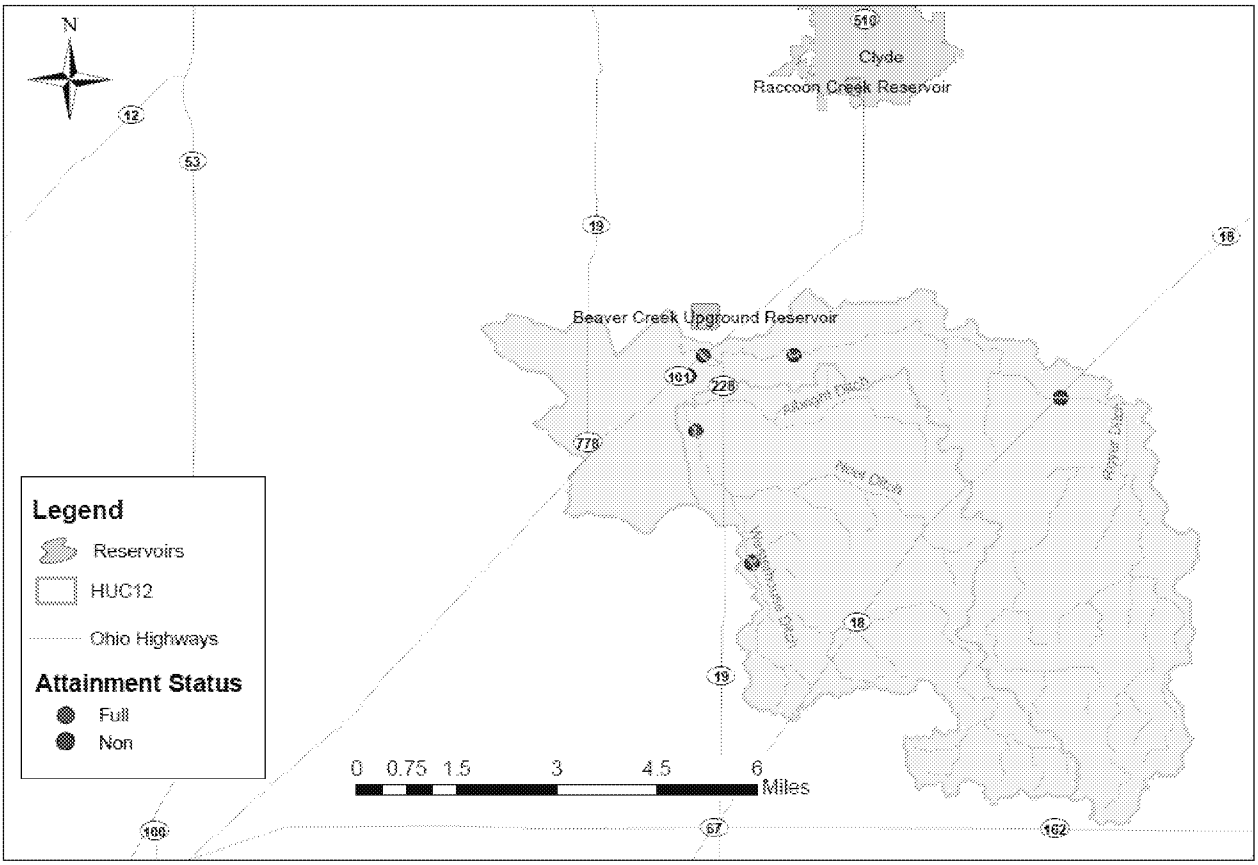

Figure J-5 — Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009.

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 in accordance with the Domestic Action Plan; and active participation on Annex 4 (Nutrients) and other Great Lakes Water Quality Agreement (GLWQA) efforts. Effective lake management and coordinated implementation are needed to address the Western Basin of Lake Erie algal blooms and the Central Basin hypoxia issues, requiring a multi-state and binational effort. Currently, there are many parallel planning and management efforts ongoing at the state, federal and binational level. For the open waters of Lake Erie, respecting and working through the binational governance framework is the appropriate process and Ohio intends to aggressively pursue state measures that complement the process and are neither duplicative nor contradictory.

Great Lakes Water Quality Agreement

Binationally, the U.S. and Canada are working together under the GLWQA to develop nutrient reduction strategies; and create and implement action plans to meet the targets. Annex 4 of the 2012 GLWQA specifically addresses nutrients in the Great Lakes and contains short-term requirements specific for Lake Erie. The U.S. and Canada formally adopted new phosphorus targets for the western and central basins of Lake Erie in February 2016. These targets have been incorporated into Ohio's Domestic Action Plan and are the goals for all the state's efforts to reduce phosphorus loading to the lake.

As water quality has improved through the decades, Ohio EPA has addressed most of the significant point source problems and are now left with primarily nonpoint source related impairments. The current Lake Erie algal blooms and Central Basin hypoxic zone are driven by nutrient loading to the Lake. Recent assessments by the Ohio Phosphorus Task Force (Phases I and II) and Annex 4's Objectives and Targets Task team, as well as a Nutrient Mass Balance Study completed by Ohio EPA in December 2016, 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 waterbody (Lake Erie). To compliment the 40 percent phosphorus reduction goals set forth by the Annex 4 committee, a separate analysis is being done to set seasonal/annual load reductions targets for the smaller tributaries (for example, within the Maumee basin). Ohio is directly involved in developing these goals and reduction targets needed for Lake Erie while moving forward on developing implementation strategies and acting to reduce nutrient contributions to the lake.

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.

Lake Erie Collaborative Agreement

The Lake Erie Collaborative Agreement was another state/province led-initiative; it was signed in June 2015 by Ohio, Michigan and Ontario (*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. One of the goals spelled out in the Collaborative Agreement was to reduce nutrient levels going into Lake Erie by 40 percent. The other was to develop a strategic plan to manage dredge material 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.

Ohio's Domestic Action Plan for Lake Erie

The State of Ohio's Domestic Action Plan expanded upon the *Collaborative Implementation Plan* and was submitted to U.S. EPA on Feb. 7, 2018. The commitment to meet the Collaborative Agreement phosphorus reduction goals of 20 percent by 2020 and 40 percent by 2025 was also incorporated into this plan. The plan is not intended to static but to be revised following the adaptive management philosophy. (*lakeerie.ohio.gov/Portals/0/Ohio DAP/DAP 1-0 Final for USEPA 2018-02-07.pdf*).

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 continue utilizing this tool to target implementation in Ohio's Lake Erie watersheds as it works to meet the Annex 4 phosphorus targets and allocations.

The TMDL document 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.

Ohio has completed TMDLs 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 nutrients and algae and have established phosphorus 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. However, Ohio is working with U.S. EPA, Tetratech (the contractor), Indiana and Michigan to develop a method for setting load reduction goals for the smaller tributaries to Lake Erie (for example, the tributaries to the Maumee river) and evaluate whether the tributary TMDLs will provide the load reductions needed to protect the lake. Where the local TMDL reductions are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps.

The Annex 4 process of developing loading targets and Domestic Action Plans are very similar 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.

State TMDL vs Binational Annex 4

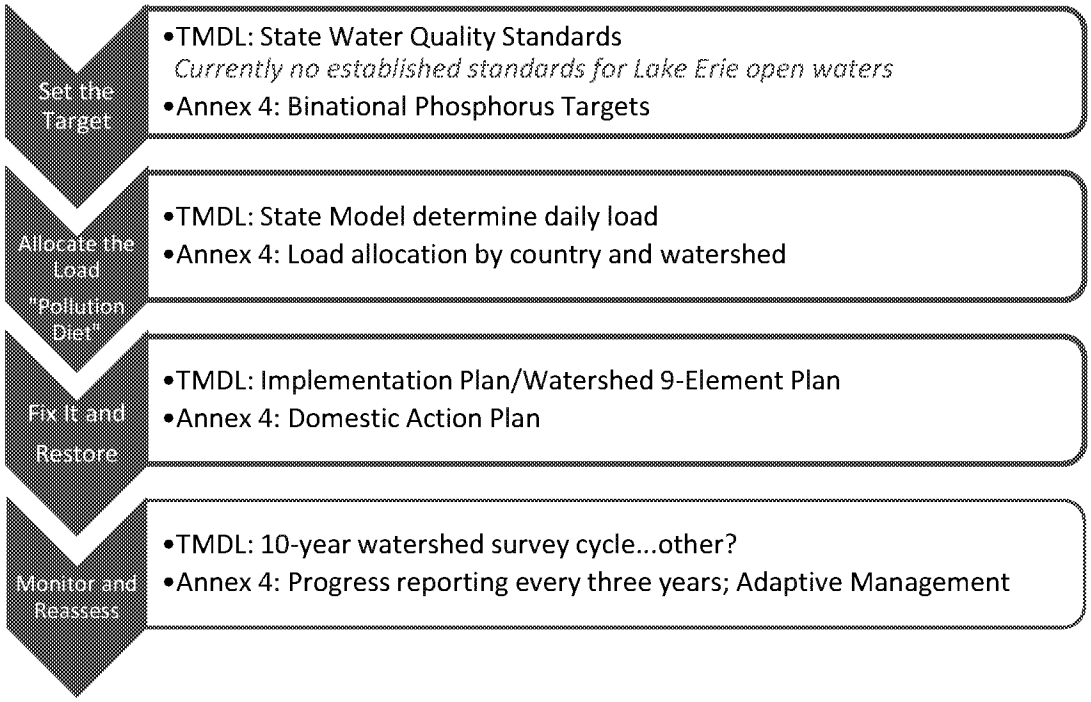

Figure J-6 — Key steps in the state TMDL and binational Annex 4 processes.

Ohio-based Nutrient Reduction Efforts

Ohio EPA's *NPS Management Plan* (Plan) is the Agency's guiding document that outlines recommended strategies, goals and objectives for controlling nonpoint sources of water quality impairment. The Plan was most recently updated in 2014 and identifies specific management activities to be implemented by Ohio EPA's NPS management program. The recent algal blooms on Lake Erie, the Ohio River and across the inland waters of Ohio were caused by excessive nutrients and exacerbated by changing weather patterns such as warmer temperatures and more intense storm events. The long-term solution is to reduce sources of nutrients while holistically restoring stream health and improving the waterway's ability to assimilate and utilize nutrients. This is also known as the stream's assimilative capacity. Restoring stream health will not only reduce the amounts of nutrients that reach the receiving water body, but restoration of in-stream and riparian habitat supports a healthy ecosystem, builds resilience to climate change impacts and improves recreational opportunities. The most current version of Ohio's *NPS Management Plan* is available at *epa.ohio.gov/Portals/35/nps/NPS_Mgmt_Plan.pdf.*

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 in 2010 and has expanded the scope and scale of implementation, developed a statewide strategy, targeted funding and undertaken legislative action to address the problem. As part of the more than $3 billion Ohio has invested comprehensively in the Lake Erie watershed, more than $150 million was made available starting in 2014 to help to public water systems keep drinking water safe and wastewater facilities reduce the amount of phosphorus they discharge into the Lake Erie watershed. In addition, Ohio continues to target millions of dollars to support local health departments to find and fix faulty residential septic systems that are contributing nutrients to Ohio waters.

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

- 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 *epa.ohio.gov/dsw/wqs/NutrientReduction.aspx*.
- GLRI Demonstration and Nutrient Reduction Projects — Nine grants totaling more than $13.9 million were awarded to Ohio. Highlights include: installation of the first two saturated buffers installed in Ohio; installation of approximately 70 controlled drainage structures; development of 52 whole farm conservation plans; planting of more than 9,000 acres of cover crops; installation and planting of 50 acres of reconstructed or restored wetlands; restoration of 3,500 linear feet of stream and 500 feet of streambank stabilization; installation of 4,400 feet of two-stage ditches; installation of rain gardens and vegetated infiltration basins in the Toledo area; and completion of 29 storm water, wetland and stream restoration projects in Cuyahoga County.
- 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[5]; 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.
- Ohio Senate Bill 150 — This bill, effective Aug. 21, 2014, requires, among other things, that beginning Sept. 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.
- Ohio HB 64 — This bill, effective June 30, 2015, required 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 *legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-64*.
- 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.
- 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.
- 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 several recommendations to be implemented during the next several years. For example,

[5] "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.

the report recommends ways for farmers to better manage fertilizers and animal manure and 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 *agri.ohio.gov/topnews/waterquality/docs/FINAL_REPORT_03-09-12.pdf.*

- 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 *lakeerie.ohio.gov/Portals/0/Reports/Task_Force_Report_October_2013.pdf.*
- 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 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 *epa.ohio.gov/portals/35/documents/point_source_workgroup_report.pdf.*

J4. Summary of Results

The consolidated results of the 2018 analysis are shown in Table J-4 and Figure J-7 — Summary of 2018 IR results for watershed AUs by beneficial use. through Figure J-9.

Table J-4 — Summary of results for each beneficial use[6]

	Human Health (fish tissue)	Recreation	Aquatic Life	Public Drinking Water Supply
Watershed assessment units				
Not being used for PDWS	0	0	0	1434
Attains	230	157	500	31
Unknown	872	186	109	39
Impaired, needs TMDL	436	750	411	33
Impaired, TMDL complete	0	445	408	1
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	14	0
Impaired, natural condition	0	0	96	0
Total watersheds considered	**1538**	**1538**	**1538**	**1538**
Large river assessment units				
Not being used for PDWS	0	0	0	29
Attains	6	3	18	0
Unknown	0	3	0	4
Impaired, needs TMDL	32	26	12	5
Impaired, TMDL complete	0	6	5	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	3	0
Impaired, natural condition	0	0	0	0
Total large rivers considered	**38**	**38**	**38**	**38**
Lake Erie assessment units				
Not being used for PDWS	0	0	0	1
Attains	0	0	0	0
Unknown	3	2	3	0
Impaired, needs TMDL	4	5	4	6
Impaired, TMDL complete	0	0	0	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	0	0
Impaired, natural condition	0	0	0	0
Total Lake Erie considered	**7**	**7**	**7**	**7**

[6] 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.

L

Summary Tables of Waterbody Conditions; Lists of Prioritized Impaired Waters; and Monitoring and TMDL Schedules

Section L contains tables showing the 303(d) listing details for each of the assessment unit types and is divided into five sections as follows:

- Section L1: Status of Watershed Assessment Units
- Section L2: Status of Large River Assessment Units
- Section L3: Status of Lake Erie Assessment Units
- Section L4: Section 303(d) List of Prioritized Impaired Waters
- Section L5: Category 4B demonstrations contained in approved Ohio TMDLs to date

In Sections L1 through L4, there are four columns labeled, in order, Human Health, Recreation, Aquatic Life and PDW Supply. These four columns represent each beneficial use included in the 303(d) list of impaired waters and the numbers in the columns represent the category for that assessment unit for that beneficial use. Table L-1 defines the categories and subcategories assigned to each use.

Table L-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[1]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[2] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[3]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

[1] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[2] HUC means hydrologic unit code.
[3] Ohio currently has no waters that are listed under this subcategory.

05090202 90 02	Little Miami River Mainstem (O'Bannon Creek to Ohio River)	1757	5	4Ah	5	0	4

Section L3. Status of Lake Erie Assessment Units							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
041202000101	Lake Erie Islands Shoreline (≤3m)	4.99	5	5	5	5	14
041202000201	Lake Erie Western Basin Shoreline (≤3m)	47.88	5	5	5	5	17
041202000202	Lake Erie Sandusky Basin Shoreline (≤3m)	68.01	5	5	5	5	16
041202000203	Lake Erie Central Basin Shoreline (≤3m)	13.39	5	5	5	0	9
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
041202000302	Lake Erie Sandusky Basin Open Water (>3m)	361.71	3i	3	3	5	5
041202000303	Lake Erie Central Basin Open Water (>3m)	2544.98	3i	3	3	5	5

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 37 of 38. PageID #: 9510

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Section L4. Section 303(d) List of Prioritized Impaired Waters							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
041202000201	Lake Erie Western Basin Shoreline (<=3m)	47.88	5	5	5	5	17
04100009 90 02	Maumee River Mainstem (Beaver Creek to Maumee Bay)	6608	5	5h	5	5	16
041202000202	Lake Erie Sandusky Basin Shoreline (<=3m)	68.01	5	5	5	5	16
04100009 90 01	Maumee River Mainstem (Tiffin River to Beaver Creek)	6058	5	5h	5	5	15
05030103 08 06	Burgess Run-Yellow Creek	20.19	5h	5h	5	5	15
041202000101	Lake Erie Islands Shoreline (<=3m)	4.99	5	5	5	5	14
04100005 90 01	Maumee River Mainstem (IN border to Tiffin River)	2315	5	5h	1	5	13
04100007 12 06	Big Run-Flatrock Creek	48.28	5	5h	5	1	12
05040003 03 04	Delano Run-Kokosing River	32.95	5	5h	5	0	12
05060001 04 06	Glade Run-Scioto River	38.34	5h	5h	5	3i	12
05060001 06 02	Middle Mill Creek	59.91	3	5h	5d	5	12
05090202 10 05	West Fork East Fork Little Miami River	28.88	1h	5h	5	5	12
05030103 90 01	Mahoning River Mainstem (Eagle Creek to Pennsylvania Border)	1075	5	5h	5	0	11
05080002 90 02	Great Miami River Mainstem (Four Mile Creek to Ohio River)	5371	5	5h	5	0	11
04100006 03 03	Flat Run-Tiffin River	33.17	5	5h	5	3i	11
04100007 06 04	Dry Fork-Little Auglaize River	57.07	1	5h	1	5	11
04110002 02 03	Lake Rockwell-Cuyahoga River	61.33	5	5	4Ah	5	11
05060001 90 02	Scioto River Mainstem (Olentangy River to Big Darby Creek)	2641	5	5h	5	0	10
05080001 90 01	Great Miami River Mainstem (Tawawa Creek to Mad River)	1853	5	5h	5	3i	10
04100003 02 04	West Branch St Joseph River	14.76	5	5h	5	0	10
04100004 02 05	Prairie Creek-St Marys River	42.22	5	5h	5	0	10
04100004 03 03	Yankee Run-St Marys River	59.44	5	5h	5	0	10
04100006 05 02	Brush Creek	66.01	5h	5h	5	0	10
04100012 02 04	Mouth Vermilion River	28.13	5	5h	5h	1	10
04110003 01 05	Lower Ashtabula River	18.27	5	5h	5	0	10
05030103 08 05	Headwaters Yellow Creek	19.36	3	5h	5	5	10
05080002 07 04	Dicks Creek	27.71	5h	5h	5	0	10
05090202 02 06	Shawnee Creek-Little Miami River	32.07	5h	5h	5d	0	10
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
05060001 90 01	Scioto River Mainstem (L. Scioto R. to Olentangy R.); excluding O'Shaughnessy and Griggs reservoirs	1068	5	3i	5	5	9
04100001 03 07	Heldman Ditch-Ottawa River	28.15	5	5h	5	0	9
04100003 03 03	Eagle Creek	35.00	5h	5h	5	0	9
04100004 01 02	Center Branch St Marys River	29.00	5h	5h	5	0	9
04100004 02 04	Twelvemile Creek	23.58	5h	5h	5	0	9
04100009 06 03	Haskins Road Ditch-Maumee River	15.73	3	5h	1	5	9
04100011 12 03	Green Creek	30.78	1	5h	4A	5	9
04110001 01 08	Baker Creek-West Branch Rocky River	26.08	5	5h	5	0	9

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 38 of 38. PageID #: 9511

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

JUL 0 9 2018

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

Re: Approval of 2018 Clean Water Act (CWA) Section 303(d) List

Dear Ms. Kavalec:

The U. S. Environmental Protection Agency conducted a complete review of the Ohio Environmental Protection Agency (Ohio EPA's) 2018 CWA Section 303(d) list and supporting documentation and information. Based on this review, EPA determined that Ohio EPA's 2018 list of water quality limited segments still requiring Total Maximum Daily Loads (TMDLs) meets the requirements of Section 303(d) of the CWA and EPA's implementing regulations. Ohio EPA's 2018 Integrated Report also included an updated priority ranking of Ohio's impaired waters still requiring TMDLs. EPA finds that Ohio EPA's discussion of prioritization of its waters, including for Lake Erie, satisfies the requirement to submit a priority ranking consistent with EPA's regulations. *See* 40 C.F.R. 130.7(b)(4). Therefore, EPA hereby approves Ohio EPA's 2018 CWA Section 303(d) list.

The statutory and regulatory requirements, and EPA's review of Ohio's compliance with each requirement, are described in the enclosed decision document.

If you have any questions please contact Mr. Peter Swenson, Chief, Watersheds and Wetlands Branch, at 312-886-0236.

Sincerely,

Linda Holst

Linda Holst
Acting Division Director
Water Division

Enclosure

cc: Cathy Alexander, Ohio EPA

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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 Environmental Protection Agency's (Ohio EPA) 2018 Section 303(d) list and supporting documentation and information. Based upon this review, EPA is approving Ohio's list of Water Quality Limited Segments (WQLS) still requiring total maximum daily loads (TMDLs) under Section 303(d) of the Clean Water Act (CWA or "the Act") and EPA's implementing regulations. Ohio's list appears in Category 5 of the Ohio 2018 Integrated Water Quality Monitoring and Assessment Report (2018 Integrated Report or 2018 IR), and EPA's approval extends only insofar as waterbodies are listed or not in Category 5 of the 2018 Integrated Report.[1] The statutory and regulatory requirements are described in detail below.

For the 2018 list, Ohio identified a new Sandusky Basin shoreline assessment unit (AU), which was previously part of the Western Basin shoreline. The Sandusky Basin shoreline AU is located between the Western Basin and Central Basin shorelines. Ohio EPA has listed the Sandusky Basin shoreline AU for all four of Ohio's designated uses: Human Health (HH), Recreation Use (RU), Aquatic Life Use (ALU), and Public Drinking Water Supply (PDWS). EPA is approving these listings. EPA is also approving Ohio EPA's listing of the Western Basin shoreline for PDWS, which was not included on its amended 2016 list. The bases for these listings are summarized in Section F, H and L of the 2018 IR.

EPA concurs that Ohio's submission accurately reflects the excess of algal indicators of impairment in both the open waters and shoreline AUs of Ohio's portion of Lake Erie, and provides the details of the assessment methodology to determine these impairments, as described in the 2018 IR and within this document.

EPA also concurs with Ohio's revision of its definitions of shoreline AUs to extend to ≤3 meters in depth.[2]

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 their jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) of the Act are not stringent

[1] Ohio EPA, Ohio 2018 Integrated Water Quality Monitoring and Assessment Report (June 2018), available at http://www.epa.ohio.gov/dsw/tmdl/OhioIntegratedReport#1798510016-report

[2] The 2016 IR Amendment included new open water AUs for the Western, Sandusky Bay, and Central Basins. The shoreline AUs were defined as extending 100 meters from the shoreline and 500 yards from drinking water supply intakes, but were revised in the 2018 IR. The Sandusky AU change between the 2016 IR Amendment and the 2018 IR resulted in the Sandusky Basin shoreline and Western Basin shoreline listings for PDWS in the 2018 IR.

enough to implement any applicable water quality standard (WQS), 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) of the Act.

EPA's implementing regulations require states to submit biennially a list identifying WQLSs still requiring a TMDL (40 C.F.R. §§130.7(b)(1), 130.7(d)). 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)).

Evaluation 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, 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 assemble and evaluate any other existing and readily available data and information. EPA's guidance describes categories of water quality-related data and information that may be existing and readily available.[3] 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 not use 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)).

The Ohio 303(d) list of prioritized impaired waters (i.e., Category 5 of the 2018 Integrated Report) is contained in Section L4 of the 2018 Integrated Report. EPA has reviewed Ohio's description of the data and information it assembled and evaluated, its methodology for

[3] EPA, Guidance for Water Quality-Based Decisions: the TMDL Process (April 1991) (hereinafter referred to as EPA's 1991 Guidance).

identifying waters, and any other relevant information including information the State submitted to EPA in response to requests for additional information.

Ohio relied on its credible data law, codified in the Ohio Revised Code (ORC) §§ 6111.50 - 6111.56, in deciding whether or not to use particular data or information in determining whether to list particular waters. That law establishes requirements for the use of external data. The 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 (QDC) and be compliant with the specifications of "Level 3 credible data," in order to be used for listing waters under Section 303(d) of the Act. Those rules, effective March 24, 2006, have been codified in Chapter 3745-4 of the Ohio Administrative Code (OAC). Within Section D6.1 of the 2018 Integrated Report is the memorandum dated May 23, 2017 sent by Ohio to solicit Level 3 data from external sources and all Level 3 QDCs. External sources include State and county health departments, universities, U.S. Geological Survey, Northeast Ohio Regional Sewer District (NEORSD), the Ohio Department of Natural Resources (ODNR), Public Water Supply (PWS) permittees, Syngenta Corp Protection, Inc., Midwest Biodiversity Institute, Enviroscience, Inc., Ohio Department of Transportation, Heidelberg College, EA Science and Technology, Inc., Cleveland Metroparks, and Clermont County Office of Environmental Quality. The data collectors either received training and certification from Ohio EPA to become QDCs, or the entities have submitted data in the past. The Ohio River data collection is through the Ohio River Valley Water Sanitation Commission (ORSANCO), and Ohio EPA uses this ORSANCO data; ORSANCO's non-support and partial support of uses in the Ohio River are considered impaired by Ohio.[4]

In addition to using Ohio EPA data, Ohio's assessment for the 2018 listing cycle used data from other Level 3 entities, or those agencies and entities that could likely be approved as Level 3 QDCs. Data used or protocols reviewed were from EPA, the National Oceanic and Atmospheric Administration (NOAA), NOAA's Great Lakes Environmental Research Lab (GLERL), the ODNR – Department of Water (DOW) Sandusky, charter boat captains, the US Geological Survey (USGS), the Ohio State University, Bowling Green State University, and the University of Toledo. Data and analyses from these entities had been compiled through the Great Lakes Water Quality Agreement (GLWQA) Annex 4 workgroup. The workgroup's efforts resulted in phosphorus reduction targets established under Annex 4 to decrease the occurrence and frequency of algal bloom biomass and cyanobacteria,[5] and the workgroup's results were peer reviewed by an *ad hoc* committee of EPA's Science Advisory Board. Ohio further collaborated with many of the researchers and data collectors in the workgroup to formulate the assessment methodology that Ohio used in Lake Erie impairment assessment in this listing cycle (Section F of the 2018 IR) and the amended 2016 IR.

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[4] ORSANCO, Assessment of Ohio River Water Quality Conditions 2010-2014 (June 2016). http://www.orsanco.org/publications/biennial-assessment-305b-report/ (2016 IR) and Section D of the 2018 Integrated Report

[5] Great Lakes Water Quality Agreement, Annex 4. "Recommended Phosphorus Loading Targets for Lake Erie". Annex 4 Objectives and Targets Task Team Final Report to the Nutrients Annex Subcommittee. May 11, 2015.

EPA concludes that the State has satisfied the regulatory requirement to assemble and evaluate all existing and readily available water quality-related data and information, including data and information relating to the categories of waters specified in 40 C.F.R. §130.7(b)(5). The State assembled and evaluated, but chose not to use existing and readily available data that were not Level 3 because the State was unable to conclude that this data was "credible," "valid," and "useful for their intended purpose." Consistent with EPA regulations at 40 C.F.R. §130.7(b)(6)(iii), EPA finds that this rationale for the State's decision not to use this data and information as a basis for listing waters is reasonable.

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).

II. Description of Ohio's Submission

Listing Methodology and Reporting.

The waterbodies in Category 5, at Section L4 of Ohio's 2018 IR, constitute Ohio's Section 303(d) list. Ohio's 2018 IR discusses several issues that impact Ohio's assessment program. The 2018 IR includes open water assessment units (previously added to the 2016 IR Amendment) for Lake Erie in addition to the previous shoreline assessment units. The most significant additions to the 2018 303(d) list are 1) the PDWS Use impairment in the Western Basin shoreline, and 2) the PDWS Use impairment of the Sandusky Basin shoreline, which is a new AU.[6] Several sections of the 2018 IR are not discussed in this decision document because they do not represent a significant departure from past monitoring and assessment practices.

Section C of the 2018 IR: Managing Water Quality.

Section C provides an update of various surface water quality management programs and Ohio's Lake Erie programs.[7] Each of the Areas of Concern (AOCs) has had reduction or progress

[6] On May 04, 2018, Ohio EPA amended its 2016 IR to include listings of the Western Basin open waters, and Islands Shoreline of Lake Erie as impaired for recreational use due to algae; Ohio also listed the open waters of the Western, Sandusky Bay area, and Central Basins as impaired for PDWS use. On May 10, 2018, EPA approved Ohio's 2016 IR Amendment.
[7] 2018 IR, p. C6-10.

toward reduction of Beneficial Use Impairments (BUIs) since the last listing cycle. These efforts include the ongoing Remedial Action Plans (RAPs) in the AOCs in the Maumee, Black, Cuyahoga and Ashtabula Rivers, all of which flow into Lake Erie. Environmental restoration projects for these tributary rivers are funded under the Great Lakes Restoration Initiative and the Great Lakes Legacy Act (GLLA) to reduce nutrient loadings to Lake Erie, remove contaminated sediments, restore habitat, remove dams, and achieve other water-quality related aims, with the ultimate goal of reducing the BUIs for the AOCs.

Another program highlighted in Section C of the 2018 IR is the Lake Erie Lakewide Action and Management Plan (LAMP) (formerly LaMP), which is focused on loading reductions and restoration of beneficial uses. The Lake Erie LAMP initially concentrated on the reduction of toxic chemical pollutants, but now includes a focus on Nonpoint Source (NPS) and pollutants such as nutrients and habitat alteration. The LAMP outlines management actions needed to assist Lake Erie and its beaches in restoring and maintaining their chemical, physical and biological integrity. The Great Lakes Water Quality Agreement between the United States and Canada (amended in 2012), 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 nearshore monitoring to support a more integrated nearshore monitoring framework. Annex 4 of the GLWQA addresses nutrient loadings to Lake Erie and establishes an interim target for total phosphorus of 15 µg/l for the Western Basin and 10 µg/l for the Central and Eastern Basins, as well as a process to develop final loading targets for total phosphorus and an allocation for each country along with domestic action plans to meet the targets.[8]

Since the last listing cycle, an important issue has been addressed regarding Ohio's TMDL program. On March 24, 2015, the Ohio Supreme Court in *Fairfield Cty. Bd. of Commrs. v. Nally,* 143 Ohio St.3d 93, 2015-Ohio-991[9] stated Ohio EPA must follow the rulemaking procedure under State law before submitting a TMDL to EPA for approval and ultimately for implementation in an National Pollutant Discharge Elimination System (NPDES) permit. This resulted in a backlog of work on TMDL development at the State. On September 29, 2017, the Ohio General Assembly amended State law to: 1) reinstate previously approved TMDLs; 2) require stakeholder outreach at several points during TMDL development; 3) mandate consideration of several technical and financial items; 4) affirm that TMDLs are not actions of the Director and challenges are made through the NPDES permit appeal process; and 5) require Ohio EPA to adopt administrative rules for stakeholder notification and significant public interest by December 2018.[10]

Ohio Senate Bill 1 was passed in July 2015 directing Ohio EPA to implement actions to protect against cyanobacteria in the Western Basin of Lake Erie and in public water supplies pursuant to ORC §3745.50, which authorized the Ohio EPA Director to serve as the coordinator of harmful

[8] Under Annex 4 of the GLWQA, loading targets for phosphorus were developed in 2015 for Lake Erie; a load reduction plan and adaptive management planning via Domestic Action Plans is ongoing.
[9] This decision is available online at supremecourt.ohio.gov/rod/docs/pdf/0/2015/2015-Ohio-991.pdf.
[10] 2018 IR, p. C-16-17.

algae management and response. Ohio adopted new and revised rules, effective June 1, 2016, to meet these requirements. The rules address "analytical protocols, establishment of health advisories and public notification protocols and triggers, sampling, treatment techniques, algaecide application and reporting requirements."[11] In 2016, Ohio established the Division of Drinking and Ground Waters (DDAGW) to protect groundwater systems and ensure that public water systems supply safe drinking water. Ohio EPA has undertaken a number of interagency and interdivision efforts to protect water systems and has implemented the *Public Water System Harmful Algal Bloom Response Strategy.*[12] Communication with the public includes the website ohioalgaeinfo.com and ODH BeachGuard site at http://publicapps.odh.ohio.gov/BeachGuardPublic/Default.aspx.

Ohio EPA also discusses in this Section of the IR the results of algal toxin monitoring and phytoplankton monitoring at inland lakes and Lake Erie. Microcystin and cyanobacteria screening indicate the occurrence of Harmful Algal Blooms (HABs) across the State.[13] Screening and follow up samples showed:

1. Microcystin-producing genes were detected at 56% of source waters; microcystins were detected at 47% of Ohio's PWS source waters;
2. Saxitoxin-producing genes were detected at 38% of source waters; follow up sampling of saxitoxin screening locations showed 18% of the PWS waters had saxitoxins;
3. Cylindrospermopsin-producing genes were detected at two sites; follow up sampling found Cylindrospermopsin-producing genes only at one site.

Under an Ohio EPA-funded program, charter boat captains collected 151 samples in the Western Basin in 2016 and 146 samples in 2017. Ohio also used NOAA satellite imagery as a tool to confirm the presence of HABs, and to assist with quantification of algal bloom densities.

As in 2016, Ohio EPA reviewed its goals in the 2018 IR relative to the EPA 303(d) Vision Framework of December 2013.[14] The Framework goal is to restore high priority waters identified by each state. The Ohio EPA long term general priorities are to:

- Continue to use a rotating basin schedule for field monitoring but on a more limited basis to allow for increased focus on lakes and protecting downstream uses;
- Sharpen focus on Public Water Supply Use;
- Incorporate HAB considerations into priorities (both PDWS use and ultimately Recreation use);
- Concentrate recreation TMDLs on High-Use recreation waters;
- Continue to make mercury and legacy/sediment metals low-priority TMDLs as other approaches are anticipated to be more effective.

[11] 2018 IR, p. C-21.
[12] 2018 IR, p. C-21.
[13] 2018 IR, p. C-22.
[14] Information for assistance with the CWA 303(d) Program Vision, Benita Best-Wong cover letter dated August 13, 2015.

Section D of the 2018 IR: Framework for Reporting and Evaluation.

Ohio continues to use the designated use framework for assessment of aquatic life, recreation, human health, and PDWS. The IR includes the Lake Erie Assessment Units (LEAUs) for all portions of Lake Erie within Ohio's jurisdiction, and the assessment of the LEAUs for impairment of the State's Recreational Use (RU) due to Algae, as described in the amended 2016 IR and slightly modified in the 2018 IR. Lake Erie assessment units include the open waters of the Western, Central, and Sandusky Basins, and delineation of the Sandusky Bay shoreline (formerly included in the Western Basin shoreline).[15]

The LEAUs are described as follows:[16]
o Western Basin shoreline and open water (OH-MI state line to Marblehead);
o Lake Erie islands shoreline (including South Bass Island, Middle Bass Island, North Bass Island, Kelleys Island, West Sister Island and other small islands);
o Sandusky Basin shoreline and open water (Marblehead to Lorain Ridge); and
o Central Basin shoreline and open water (Black River/Lorain Ridge to OH-PA state line).[17]

Section D6 of Ohio's 2018 IR discusses the public involvement in compiling the 2018 303(d) list and summarizes public comments Ohio received on its draft 2018 IR, and responses provided by Ohio EPA. The formal comment period extended from March 23, 2018 through May 4, 2018. The Notice is included in the 2018 Integrated Report in Section D6.1. Section D6.1.1 includes instruction for Level 3 Credible Data and entities and agencies that have contributed data.

Public Comments:

Copies of the full public comments, and a responsiveness summary of the comments received and the State's responses were included in the submittal package to EPA. Comments received primarily focused on the following topics: general comments, those related to the monitoring schedule, and those related to Lake Erie. Public comments received and Ohio EPA's responses are included in Section D6.3.1 and D6.3.2 of the IR.

EPA has reviewed the public comments received and Ohio EPA's responses, and concludes that Ohio EPA adequately addressed the public comments received insofar as they raised any concerns about the State's listing obligations under Section 303(d) and EPA's implementing regulations.

[15] Ohio EPA has redefined the shoreline, to include waters ≤ 3 meters in depth, and open waters are defined as those waters > 3 meters in depth.
[16] 2018 IR, Section D1.
[17] 2018 IR, p. D-2.

Section F of the 2018 IR: Evaluating Beneficial Use - Recreation.

Recreational Use E. coli

Ohio revised its WQS for *E. coli,* which became effective in February 2017 and approved by EPA in June 2017. The standards were moved from OAC §3745-1-07 to §3745-1-37. The revised recreational WQS are based on the protected use associated with the various waterbody types (bathing waters and primary/secondary contact waters) (Table F-1 below). The Statistical Threshold Value (STV) replaces the past single sample maximum methodology.[18]

Table F-1 — Summary of the RU assessment methods.

Bathing Waters		
Indicator	**Criterion (Table 37-2, OAC 3745-1-37)**	**Assessment Method Summary**
E. coli	Geometric mean *E. coli* content* based on samples collected within a 90-day period during the recreation season within a calendar year is 126 cfu/100 mL; statistical threshold value (STV) is 410 cfu/100 mL.	Applied to the four Lake Erie shoreline assessment units and inland lake beaches, exceedance of the geometric mean bathing water criterion or an exceedance of the STV in more than 10 percent of the samples collected during a 90-day period is considered an impairment of the bathing water use, where sufficient data are available**.
Primary Contact and Secondary Contact		
Indicator	**Criterion (Table 37-2, OAC 3745-1-37)**	**Assessment Method Summary**
E. coli	Geometric mean *E. coli* content* based on samples collected within a 90-day period during the recreation season within a calendar year is as follows: Primary Contact Waters 90-day Geometric Mean: 126 cfu/100 mL STV: 410 cfu/100 mL Secondary Contact Waters 90-day Geometric Mean: 1,030 cfu/100 mL STV: 1,030 cfu/100 mL	Applied to streams and inland lake non-beach sites. Data collected within a 90-day period in the recreation season are assessed on a site-by-site basis and compared to the applicable geometric mean and STV *E. coli* criteria whenever sufficient data** are available for the site. Assessment units (AUs) are in full attainment if all sites assessed within the AU meet both the applicable geometric mean and STV criteria and in non-attainment if one or more sites assessed within the AU exceed the applicable geometric mean or STV criteria.

E. coli concentrations are expressed in colony forming units (cfu) per 100 milliliters (mL)
** Five or more samples collected within a 90-day period.

In contrast to Ohio's bathing water recreational use criteria, beach advisory recommendations are based upon a single sample maximum *E. coli* criterion, using the federal bacteria rule promulgated pursuant to the BEACH Act.[19] Section F of the 2018 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 threshold for triggering the issuance of beach advisories has been used since 2006.

Table F-11 below shows Ohio's 65 Lake Erie beaches divided into the four geographical areas. The percentage of days in exceedance of the *E. coli* single sample maximum criterion from 2013 to 2017 was as follows: 15.4% for the Western Basin, 20.2% for the Central Basin, 25.3% for the Sandusky Basin, and 3.9% for the Lake Erie Islands.

[18] The STV represents the 90th percentile of the samples collected in the 90-day period (five or more samples) that cannot be exceeded in more than 10% of the samples.
[19] Water Quality Standards for Coastal and Great Lakes Recreation Waters, 69 Fed. Reg. 67217 (Nov. 16, 2004).

Table F-11 — Aggregated exceedance frequencies at 65 Lake Erie public beaches from 2013-2017 (pooled by Lake Erie shoreline AU to report use support).

	Western Basin	Central Basin	Sandusky Basin	Lake Erie Islands
Number of beaches	7	30	26	2
Total recreation days	3,535	14,857	13,561	1,026
Total days in exceedance	546	3,005	3,426	40
Percentage of days in exceedance	15.4%	20.2%	25.3%	3.9%
Total beach seasons[1]	35	148	129	10
Average # of days *E. coli* BAV exceeded per beach per season[2]	15.6	20.3	26.6	1.0
Number of beaches exceeding 90-d geomean one or more years during reporting cycle[3]	5	22	14	1
Number of beaches exceeding STV within a 90-day period in one or more years during the reporting cycle[3]	5	30	25	2
Attainment status	Does not support	Does not support	Does not Support	Does not Support

[1] 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 2013-2017 reporting period.
[2] Calculated by dividing the total days in exceedance in the basin by the total number of beach seasons in the basin.
[3] Used to determine attainment status.

Table F-13 below shows the *E. coli* results for the five most recent listing cycles for rivers and streams in Watershed Assessment Units (WAUs). For the 170 AUs analyzed for the 2018 IR, shown in the last two columns, 8% fully supported RU with respect to *E. coli* while 92% did not.

Table F-13 — Overall differences in the assessment of RU attainment, 2010-2018.

	2010 Report		2012 Report		2014 Report		2016 Report		2018 Report	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total AUs[a]	1,576	100	1,576	100	1,576	100	1,576	100	1,576	100
Assessed	487	31	588	37	680	43	713	45	170	11
Not Assessed	1,089	69	988	63	896	57	863	55	1,406	89
Supporting Use[b]	65	13	88	15	130	19	73	10	14	8
Not Supporting Use[b]	422	87	500	85	550	81	640	90	156	92

[a] Includes LRAUs.
[b] Note: The percentage of AUs reported as supporting the RU and not supporting the RU are based on the total AUs that were assessed (e.g., 187 in the 2018 analysis).

Beaches at inland lakes are tested less frequently compared to Lake Erie beaches. The overall frequency of exceedances at inland lakes was 13.8% in the most recent five-year reporting period, an increase from 12.4% reported in the 2011-2015 reporting period. There were 28 inland lake beaches where the aggregated exceedance frequency was over 10 percent. The highest frequency was 66% at Brooks Park beach, and 60% at Crystal Beach, both located at Buckeye Lake. There were 13 beaches that exceeded the bathing water *E. coli* criteria over 25 percent of the time over the five-year reporting period total.[20]

Recreational Use Algae - Western Basin

Prior to its amended 2016 list, Ohio assessed for RU based solely on the presence of bacteria. In the current listing cycle, the methodology includes the assessment of RU impairment in the

[20] Site specific data and discussion can be found at 2018 IR, Section F3.3.

Western basin of Lake Erie related to algae.[21] In its assessments prior to its amended 2016 list, Ohio EPA assessed three Lake Erie AUs-the Western Basin, Central Basin, and Lake Erie Islands Shorelines. For its 2016 IR Amendment, Ohio EPA added the Western, Central and Sandusky Basin Open Waters AUs for 303(d) assessment purposes. The Sandusky Basin Shoreline AU was added in the 2018 IR (Table F-18 and Figure F-7 from the 2018 IR below). Table F-18 below describes details of the map of the new AUs in Figure F-7. The Central Basin Shoreline and Open Water AUs extend eastward to the border of Pennsylvania.

Table F-18 — Proposed Ohio Lake Erie AUs.

AU Code	AU Name	Description
041202000201	Western Basin Shoreline (W1)	Lake Erie shoreline from the MI/OH state line to the west side of Catawba Island at depths ≤3m, including Maumee Bay
041202000301	Western Basin Open Waters (W2)	Lake Erie open water from the MI/OH state line to a line between the Marblehead Lighthouse and Pelee Point at depths >3m (U.S. waters only)
041202000100	Islands Shoreline (I1)	Lake Erie island shorelines from the west side of Catawba Island to the Marblehead Lighthouse at depths ≤3m and including, but not limited to the following Islands; West Sister, Bass and Kelleys
041202000202	Sandusky Basin Shoreline (S1)	Lake Erie shoreline from the Marblehead Lighthouse to the Black River at depths ≤3m, including Sandusky Bay
041202000302	Sandusky Basin Open Waters (S2)	Lake Erie open water from a line between the Marblehead Lighthouse and Pelee Point to the Lorain Ridge at depths >3m (U.S. waters only)
041202000203	Central Basin Shoreline (C1)	Lake Erie shoreline from the Black River to the OH/PA state line at depths ≤3m
041202000303	Central Basin Open Waters (C2)	Lake Erie open water from the Lorain Ridge to the OH/PA state line at depths >3m (U.S. waters only)

[21] 2018 IR, Section F.4.

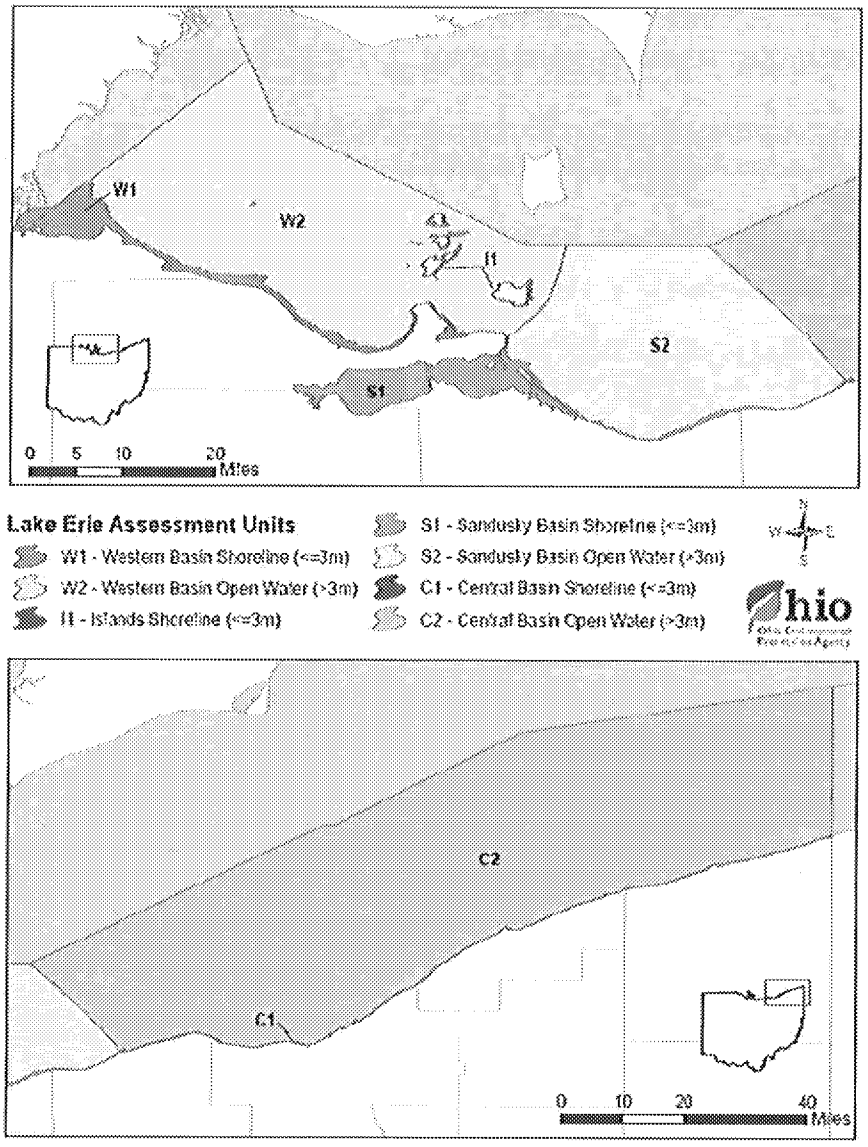

Figure F-7 — New Ohio Lake Erie AUs

Ohio included a table and map of all the sampling sites and sampling frequency for data available from entities that have Level 3 credible data or will be acceptable in the future to have Level 3 data.[22] Table F-19 in the 2018 IR also includes many types of data beyond phosphorus/nutrient and chlorophyll-a, such as phytoplankton, zooplankton, picoplankton, biovolume, species, DNA and taxa for a better understanding of the physical attributes and extent of the algal presence.

[22] 2018 IR, Figure F-8, p. F-30, Table F--19, p. F-31-33.

For the 2018 IR, Ohio EPA used its narrative standards to determine RU impairment due to algae. Ohio EPA narrative water quality standards found in OAC §3745-1-04 state that all surface waters be:

> *(D) Free from substances entering the waters as a result of human activity in concentrations that are toxic or harmful to human, animal or aquatic life or are rapidly lethal in the mixing zone.*
> *(E) Free from nutrients entering the water as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae.*

In order to have a quantitative and objective method for assessing attainment with these narrative water quality standards, metrics were developed by Ohio EPA in consultation with the Ohio State University Sea Grant Program, the University of Toledo, Bowling Green State University and NOAA. Satellite imagery from NOAA had been generated in the recent past (using the Moderate Resolution Imaging Spectroradiometer – MODIS), and values were determined based on targets developed under Annex 4 of the GLWQA.[23] The determination of attainment of the narrative water quality standard is based on two algal measurements:

- algal bloom not to exceed that which occurred in 2004 or 2012 (based on linkage with phosphorus loading); and
- algal cell count not to exceed 20,000 cells/ml (based on higher likelihood that cyanobacteria cell count would produce *Microcystis* blooms).

Related to quantifying the extent of the bloom, Ohio EPA stated:

> To account for the way that algal blooms shift in time and space in a large water body like the western basin, the method developed is as follows:
> • In each 10-day frame, an exceedance means that a bloom with greater than 20,000 cells/mL covers (is present in) more than 30 percent of the western basin open water unit area
> • If more than three 10-day frames have an exceedance in one year (July-Oct.), then that year exceeds the goal (is above the threshold target of the 2004 and 2012 blooms under Annex 4 of the GLWQA)
> • Because of the year-to-year variation, if any two or more years in a rolling six-year window exceeds the goal (is above the threshold target of the 2004 and 2012 blooms under Annex 4 of the GLWQA) then the unit is impaired.... The threshold of 30 percent coverage is based on an examination of the bloom coverage in Lake Erie's western basin since 2002 and which blooms were considered to meet the Annex 4 target severity index (the Target Bloom in Figure F-9). Severity Index (SI) is the measure of the peak bloom biomass over a 30day period (in each year, whichever 30-days captured/represents the most biomass in that year).[24]

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[23] Recommended Phosphorus Loading Targets for Lake Erie, Annex 4 Objectives and Targets Task Team Final Report to the Nutrients Annex Subcommittee (May 11, 2015, available at https://www.epa.gov/sites/production/files/2015-06/documents/report-recommended-phosphorus-loading-targets-lake-erie-201505.pdf.
[24] 2018 IR, pp. F-34, 35.

For quantification of the cell count, Ohio EPA stated[25]:

> Within each 10-day frame, an average percent coverage by a bloom at 20,000 cell/mL or greater was calculated for the western basin open water assessment unit (W2 in Figure F-7). In the western basin, blooms typically begin developing by July 22 and peak between August 10 and September 18 (Wynne and Stumpf, 2015). The 10-day time frames used in the assessment method are:
>
> July 1 – July 10 Aug. 30 – Sept. 8
> July 11 – July 20 Sept. 9 – Sept. 18
> July 21 – July 30 Sept. 19 – Sept. 28
> July 31 – Aug 9 Sept. 29 – Oct. 8
> Aug. 10 – Aug. 19 Oct. 9 – Oct. 18
> Aug. 20 – Aug. 29 Oct. 19 – Oct. 31

The results from the methodology yielded a finding of impairment as shown below in Table F-20 from the 2018 IR.

Table F-20 — The number of 10-day time frames exceeding the 30 percent coverage threshold (with 20,000 cells/mL or greater) in the western basin open water unit for each year beginning in 2012.

	≥30% coverage at ≥20,000 cell/mL	
Year	10-day frames exceeding	total frames
2012	2	12
2013	10	11
2014	6	12
2015	9	11
2016	5	10
2017	7	11

Section G of the 2018 IR: Evaluating Beneficial Use – Aquatic Life Use (ALU).

ALU scores overall are summarized below, using data from 2003-2016:

- WAU sites achieving full attainment increased from 59.3% to 61.8% for the HUC 12 assessments.
- Larger River Assessment Unit (LRAU) miles achieving full attainment was almost unchanged from 87.4% to 87.3%.
- LEAU sites in full attainment increased to 17.0% from 13.3% in the last listing cycle, but for the first time included the Sandusky Bay shoreline, defined as the area between the Central and Western Basin shorelines, as impaired for ALU.

Ohio also provided a breakdown of attainment in watersheds based on watershed size, subcategories of ALU such as Exceptional Warmwater Habitat (EWH) through Limited

[25] 2018 IR, p. F-35.

Resource Waters (LRW), and the top five prevalent causes of ALU impairment (siltation/sedimentation, habitat modification, nutrient enrichment, organic enrichment, and hydromodification).[26]

Lake Erie sampling included 131 fish community collections at 47 sites from 2011-2016. The current cycle impairment values showed that of the 47 sites, only nine are fully attaining the designated EWH ALU. This assessment includes the new assessment units for Lake Erie. Ohio compared recent data collected in 2011-2016 and other electrofishing results from the 1900s and early 2000s, and in general did not find a great difference in medians and ranges in the Index of Biological Integrity (IBI) and Modified Index of Well-Being (MIwb) indices. The IR stated that the largest changes were linked to Lake Erie Island shoreline sites, but that the results are not conclusive due to the small sample sizes. The IR observed that there appears to be a significant change in the proportion of exotic species to native species (i.e. changing the original biotic community).

A breakdown of results reflects the following site attainment status for each of the LEAUs (fish community assessments).

AUID	AU Name	# Sites	# Full	# Partial	# Non
041202000201	Lake Erie Western Basin Shoreline (including Maumee Bay)	9	3	0	6
041202000301	Lake Erie Western Basin Open Water	0	0	0	0
041202000101	Lake Erie Islands Shoreline	4	0	1	3
041202000202	Lake Erie Sandusky Basin shoreline	14	5	5	4
041202000302	Lake Erie Sandusky Basin open water	0	0	0	0
041202000203	Lake Erie Central Basin shoreline	20	1	5	14
041202000303	Lake Erie Central Basin open water	0	0	0	0

Section H of the 2018 IR: Evaluating Beneficial Use: Public Drinking Water Supply.

Attainment determinations for the PDWS Use are based on nitrate, pesticide, other contaminants, algal cyanotoxins, and *Cryptosporidium* indicators. Ohio EPA measures both ambient and treated water collected from 2010 through October 2017.

- For the 2018 IR, Ohio has assessed seven and listed six of the LEAUs of the Lake Erie Shoreline, Islands, and Open Waters assessment units for PDWS use impairment (the seventh AU is not used for public drinking water supply). The AUs are impaired for PDWS use due to microcystin levels measured above threshold values of 1 µg/L. Details of the water quality data and locations of the communities are in Table H-2 in the 2018 IR.[27]
- Western Basin Shoreline – two public water systems (PWS) had at least two raw water sample microcystin exceedances.
- Western Basin Open Waters – four PWS systems had at least two raw water sample microcystin exceedances.

[26] 2018 IR p. G-12.
[27] 2018 IR, pp. H-12 to H-17.

- Lake Erie Islands Shoreline – three PWS had at least two raw water sample microcystin exceedances.
- Sandusky Basin Shoreline – one PWS had a least two raw water sample microcystin exceedances.
- Sandusky Basin Open Waters – two PWS had a least two raw water sample microcystin exceedances.
- Central Basin Open Waters – four PWS had at least two raw water sample microcystin exceedances.

Outside of Lake Erie, new PDWS impairment determinations were included for other waterbodies due to microcystin, cylindrospermopsin, and saxitoxin exceedances (Table H-2).

Section I of the 2018 IR: Considerations for Future Lists.

Ohio updated information regarding the assessment of Lake Erie, including samples collected and a map of sampling sites from the University of Toledo and the Ohio State University/Stone Laboratory.[28] Future actions toward assessment and listing of LEAUs are in alignment with ecosystem objectives for Lake Erie as described in the GLWQA. The sampling of open waters is funded to supplement other existing data used for assessment and potential listing as well as to include four sites in Sandusky Bay for the next two years. Entities will work with Ohio EPA to ensure the data are credible Level 3, to be used in conjunction with satellite imagery from NOAA, to provide a comprehensive assessment method for algal blooms in the open waters for future 303(d) lists, especially to monitor and quantify areal extent and microcystin metrics. NOAA continues to collect data at seven sites in Ohio waters, and the Northeast Ohio Regional Sewer District collects data at eight sites in the Central Basin. Ohio EPA indicates that there will be ongoing collaboration amongst Ohio EPA and state, federal, and local partners and universities in sampling as well as refining assessment methodology.

[28] 2018 IR, p. I-20.

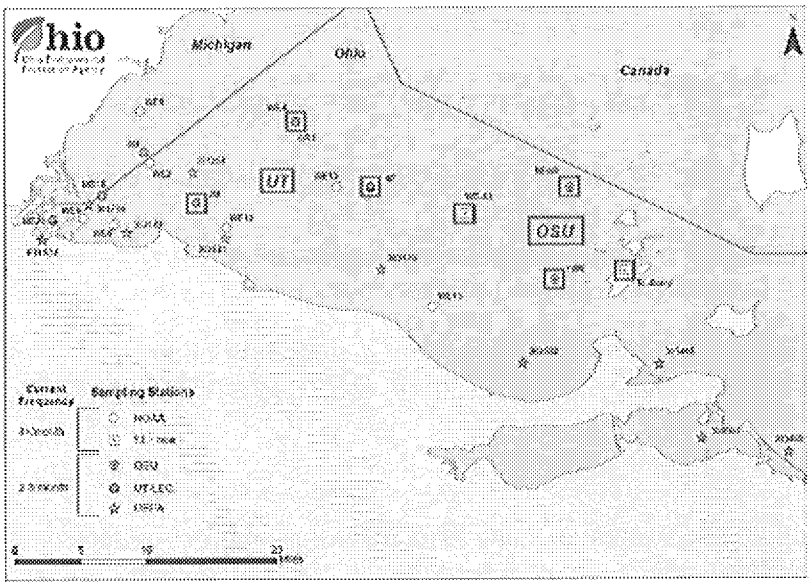

Figure J-1 — Supplemental weekly sampling locations for chlorophyll and microcystin; sampled by University of Toledo and the Ohio State University/Stone Laboratory (boxed sites) researchers in 2017.

Section J of the 2018 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 program and schedule for TMDL development and monitoring. Table J-1 below shows the attainment and listing categories. The 2018 IR includes a new listing category 5p, for protection/preservation of threatened waters, primarily for nutrients.

Table J-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[3] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[4]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

Priority Ranking and Targeting

Ohio has included a discussion of its prioritization process for TMDL development in Sections C and J of the IR, which uses a points-based system that considers the "presence and severity of Human Health impairment, Recreation Use impairment, Public Water Supply impairment and Aquatic Life Use impairment."[29]

Section J2 describes how Ohio increased the priority of the impaired AUs. Extra priority points are given for:

- social factors (high use recreational waters, drinking water supply for large populations, sustained involvement by local groups or government);
- value added (whether a TMDL offers the best way to achieve water quality);
- implemented projects/approved watershed plan;
- alternatives more timely than a TMDL;
- regulatory authority over sources; and,
- other factors (pending enforcement, Corps modeling of a reservoir, local or state strategy such as new rules for home sewage treatment systems).

EPA agrees that, as to the WQLSs included on the 2018 Section 303(d) list, OEPA has satisfied the requirement to submit a priority ranking consistent with EPA's regulations.

Figure J-2 below reflects changes from previous IRs with the addition of the "Recreation LEAUs" that apply to the Lake Erie algal impairments, in addition to the previous recreational use impairments due to excess bacteria impacting primary and secondary contact in WAUs and LWAUs.

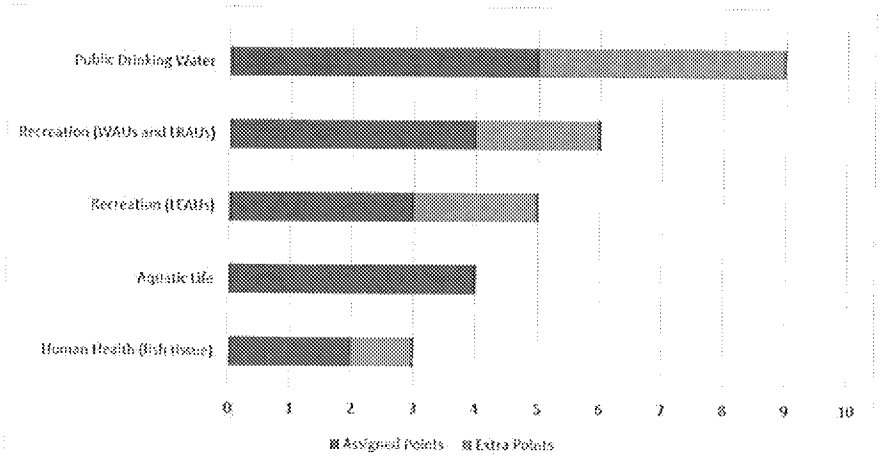

Figure J-2 — Priority points assigned based on use impairment or other factors (extra points).

[29] 2018 IR, p. C-29.

Ohio used a point system in Section J2 of the IR to assign priority to the Lake Erie Assessment Units. That section also discusses how Ohio is developing TMDLs for Lake Erie tributaries as well as many other actions for Lake Erie outlined in Section J3. Lake Erie impaired waters are assigned a low priority for Ohio EPA-initiated TMDLs. As Ohio acknowledges in Section J4, TMDLs are "need[ed]" (i.e. required) for the Lake Erie Assessment Units so long as they remain on the State's 303(d) list. However, states have "considerable flexibility" in deciding when to develop a TMDL based upon the circumstances, particularly for segments that have only recently been added to the list.[30] Furthermore, EPA has explained that "[i]n some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the applicable standard is met)."[31] And so, if efforts such as those described in Section J3 result in the attainment of water quality standards prior to the development of a TMDL, then Ohio may remove those impaired segments from its 303(d) list and a TMDL will no longer be required. But as Ohio EPA observes, where its current efforts to reduce nutrient pollution into Lake Erie, including TMDL development for the Lake's tributaries, are not sufficient to achieve standards, "Ohio will be working with U.S. EPA and other partners to determine next steps."[32] EPA expects that under those circumstances such "next steps" would include TMDL development for the Lake Erie Assessment Units directly.

Ohio EPA also received comments from the public that it should prioritize implementation of TMDLs for the Western Basin of Lake Erie, for either the waters of the Lake and/or the Western Lake Erie watersheds. In response, Ohio EPA described its plans for TMDL development in the near term, including its prioritization of TMDLs for the western basin tributaries, and indicated it will evaluate the need to update older TMDLs in its administrative planning process. The State also referenced the explanation in the IR regarding why a TMDL is not being pursued for the Lake immediately, and that it clearly indicates the western basin load reductions are a priority for the agency and the State. EPA finds these responses to be reasonable, and concludes that Ohio EPA has satisfied the requirement to submit a priority ranking for Lake Erie consistent with the regulations at 40 C.F.R. §130.7(b)(4).

Addition and Removal of Waters from the 303(d) List

Section J of the 2018 IR describes the delisting or addition of waters from the 2016 303(d) list. Table J-5 below shows both delisting and listing of new waters in Ohio's 2018 303(d) list. The new recreational use additions to the 303(d) list greatly increased from 68[33] to 261 in WAUs.

[30] EPA's Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act (July 29, 2005), p. 63.
[31] Ibid., p. 57.
[32] 2018 IR, p. J-12.
[33] Compared to Table J-5 in the 2016 IR.

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

	Number of AUs			
	Watershed	Large River	Lake Erie	Total
Delistings (Remove from 303(d) list)				
Human Health (fish tissue)	15	0	0	15
Recreation	37	1	0	38
Aquatic Life	76	2	0	78
Public Drinking Water Supply	1	0	0	1
Total	130	3	0	132
New Listings (Add to 303(d) list)				
Human Health (fish tissue)	21	0	0	21
Recreation	261	3	0	264
Aquatic Life	31	0	0	31
Public Drinking Water Supply	11	0	2	13
Total	326	3	2	329

Ohio removed waters from its 303(d) list because of 1) a flaw in original listing; 2) new data showing that the waters are meeting the WQS; or 3) new AUs.[34] In evaluating the reasonableness of the State's decision to remove these waters, EPA has evaluated the State's delisting rationale, and information made available to the public during the public notice and comment period, and concludes that the State has demonstrated good cause for removing these waters.

Short term schedule

The 2018 IR included Ohio's short-term schedule for TMDL development for all waters on the State's Category 5 list in Table J-13 of Section J.[35] The TMDLs are expected to be completed in 2019.

EPA reviewed the State's identification of WQLSs targeted for TMDL development and concludes that the State has specifically identified waters targeted for TMDL development in the next two years as required by 40 C.F.R. §130.7(b)(4).

Long term schedule

The 2018 IR discussed Ohio's long-term schedule for TMDL development for all waters on the State's Category 5 list of impaired waters. Because Ohio has had some delay in its submittal of TMDLs due to the court decision referenced above, Ohio is committing staff resources to reduce the resultant backlog of TMDLs, and less frequent waterbody field monitoring events are planned for the near future, to allow the TMDL report backlog to be reduced.

[34] 2018 IR, Tables J-5, J-6, J-7, J-8, J-9 and J-10, pp. J-21-25.
[35] 2018 IR, Section J, Table J-13, p. J-33.

Section L of the 2018 IR: Summary Tables of Waterbody Conditions; Lists of Prioritized Impaired Waters; and Monitoring and TMDL Schedules

This Section includes the waters included on Ohio's 2018 impaired waters list. The most significant change in the amended 2016 IR was the addition of the last three AUs in the table below for the open waters of Lake Erie. These AUs are included in the 2018 IR. The 2018 IR has a total of seven Lake Erie AUs due to the addition of the Sandusky Shoreline, which was previously part of the Western Basin Shoreline AU.

Section L3. Status of Lake Erie Assessment Units							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recreation	Aquatic Life	PWS Supply	Priority Points
041202000101	Lake Erie Islands Shoreline (≤3m)	4.99	5	5	5	5	14
041202000201	Lake Erie Western Basin Shoreline (≤3m)	47.88	5	5	5	5	17
041202000202	Lake Erie Sandusky Basin Shoreline (≤3m)	68.01	5	5	5	5	16
041202000203	Lake Erie Central Basin Shoreline (≤3m)	13.39	5	5	5	0	9
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
041202000302	Lake Erie Sandusky Basin Open Water (>3m)	361.71	3i	3	3	5	5
041202000303	Lake Erie Central Basin Open Water (>3m)	2544.98	3i	3	3	5	5

Conclusion

After full review and evaluation of the information presented by the State in its 2018 submittal, EPA is approving the waters identified in Section L4 of Ohio's 2018 IR as impaired waters still requiring TMDLs. EPA is taking action on the list of Category 5 waters for which available data and/or information indicate that at least one designated use is not being supported or is threatened, and for which a TMDL is still required. Although the information was considered in EPA's review, EPA is not taking any action to approve or disapprove waters identified in Ohio's 2018 IR in categories 1, 2, 3, and 4 in this decision, which does not affect EPA's approval of Ohio's 2018 list of impaired waters still requiring TMDLs.

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Message

From: Baltazar, Debbie [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=74E36010F9E3499AA02EEAABF89E467B-DBALTAZA]
Sent: 7/27/2018 10:16:55 PM
To: CLARK METTLER, MARTHA [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user245f4c8f]; Hollingsworth, Mary [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user5c684f5b]; 'IDEM - Paul Higginbotham' [PHIGGINB@idem.IN.gov]; 'IDEM - Rebecca Reynolds' [ReReynol@idem.in.gov]; 'IEPA - Deana Poe' [deana.poe@illinois.gov]; 'IEPA - Sanjay Sofat' [sanjay.sofat@illinois.gov]; 'MDEQ - Eric Oswald' [oswalde1@michigan.gov]; 'MDEQ - Kim Fish' [FISHK@michigan.gov]; 'MDEQ - Laura Smith' [smithl16@michigan.gov]; 'MDEQ - Phil Argiroff' [ARGIROFFP@michigan.gov]; 'MDEQ - Suzann Ruch' [ruchS@michigan.gov]; Teresa Seidel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=userffbc69ab]; 'MDOH - Randy Ellingboe' [randy.ellingboe@state.mn.us]; 'MDOH - Steve Robertson' [steve.robertson@state.mn.us]; 'MPCA - Rachel Mueller' [rachel.mueller@state.mn.us]; 'MPCA - Shannon Lotthammer' [shannon.lotthammer@state.mn.us]; 'OEPA - Amy Klei' [Amy.Klei@epa.ohio.gov]; beth.messer@epa.ohio.gov [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user139098d4]; 'OEPA - Brian Hall' [Brian.Hall@epa.ohio.gov]; 'OEPA - Kevin Fowler' [Kevin.Fowler@epa.ohio.gov]; 'OEPA - Sue Bodnar' [Sue.Bodnar@epa.ohio.gov]; 'OEPA - Tiffani Kavalec' [tiffani.kavalec@epa.ohio.gov]; 'WDNR - Ashley Hoekstra' [Ashley.Hoekstra@wisconsin.gov]; 'WDNR - Linnea Rock' [Linnea.Rock@wisconsin.gov]; 'WDNR - Patrick Stevens' [Patrick.stevens@wisconsin.gov]; 'WDNR - Sharon Gayan' [sharon.gayan@wisconsin.gov]; Zellmer, James A - DNR [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=userfbeda77a]
CC: R5 WD Management Team [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fa91a273b98d4144bd19df0033c87960-R5 WD Management Team]; Rosado, Elizabeth [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=efaa54a32b3444c886f476544e094c89-ERosado]; Taylor, Jori [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=19b87c4fc1f7441cad0a01e0cc72b742-JTaylo04]; Balasa, Kate [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=97fa4e4009264d0399bd103e5d10d212-KBalasa]
Subject: 8/1 State Directors Call - Agenda and Logistics
Attachments: Approach for Development of National Water Program Core Measures 7-25-18.docx; Summary of Core Measures process 7-25-2018.pdf; National Water Program Measures - Consolidated List 7-25-18.xlsx; National Water Program Measure Definitions 7-25-18.pdf

Call in number: 202-991-0477 Code Conference Code/ Ex. 6

Agenda:

- **Office of Water Core Measures – Linda Holst (see attached documents)**
- **Roundtable**
- **Time for future calls (1-2 CT)?**

Region 5 participants will call in from Room 1507X.

NOTE: Please be aware that EPA has recently switched to a new conference line system and is periodically experiencing connection problems (message that you can't connect, busy signal, etc). Please use the call-in number and code provided above to connect to the call. However, if you attempt to connect to the call tomorrow and encounter problems, please see the attached for alternate ways of connecting to the call.

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National Water Program Measures Review

Strategic Measures and Mission Measures (1-25, ***italicized, greyed, and bolded)*** will be retained.

• Office of Ground Water and Drinking Water (OGWDW)• Office of Science and Technology (OST)• Office of Wastewater Management (OWM)• Office of Wetlands, Oceans and Watersheds (OW

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Description	Reporting Office	Program	FY 2018-2022 Strategic Plan	FY 2019 Annual Performance Plan (Budget)
Watersheds with surface waters not meeting standards.	*OWOW*	*Water Quality*	*SM-4*	*SWP-01*
Number of Community Water Systems out of compliance with Health Based Standards.	*OGWDW*	*Drinking Water*	*SM-2*	*DW-01*
Number of non-federal dollars leveraged by EPA water infrastructure finance programs (CWSRF, DWSRF and WIFIA).	*OGWDW; OWM*	*Infrastructure*	*SM-3*	*INFRA-01*
Systems Out of Compliance Due to Lead and Copper Rule Violations.	*OGWDW*	*Drinking Water*		
Strengthen the technical, managerial and financial capacity of drinking water systems.	*OGWDW*	*Drinking Water*		
Engagements with the water infrastructure community.	*OGWDW*	*Infrastructure*		
Water infrastructure financing tools, training, and resources provided.	*OGWDW*	*Infrastructure*		
Drinking Water Sanitary Surveys.	*OGWDW*	*Drinking Water*		
Reviews of State DWSRF program.	*OGWDW*	*Infrastructure*		
State PWSS rule primacy applications in backlog.	*OGWDW*	*Public Water Systems Supervision*		
Class I, II, III, V, VI UIC DI Well Permits in backlog. *(Note: Individual well class measures omitted from table)*	*OGWDW*	*Underground Injection Control*		
Electronic submission of state Integrated Report.	*OWOW*	*Impaired Waters*		
Outstanding State submission of 303(d) lists.	*OWOW*	*Impaired Waters*		
Backlog of EPA action on 303(d) Lists.	*OWOW*	*Impaired Waters*		
Progress in putting priority TMDLs, alternative restoration plans and protection approaches in place.	*OWOW*	*Total Maximum Daily Load*		
Backlog of EPA action on TMDLs.	*OWOW*	*Total Maximum Daily Load*		
Backlog of EPA action on priority TMDLs.	*OWOW*	*Total Maximum Daily Load*		
Applications for new NPDES individual permits older than 6 months.	*OWM*	*National Pollutant Discharge Elimination System*		
Reviews of State CWSRF.	*OWM*	*Infrastructure*		
Requests for Coverage Under General NPDES Permits in backlog.	*OWM*	*National Pollutant Discharge Elimination System*		
Number of WIFIA LOIs received in response to a Notice of Funding Availability.	*OWM*	*Infrastructure*		
Number of LOIs that address lead and other contaminants for drinking water systems.	*OWM*	*Infrastructure*		
Number of LOIs that address aging infrastructure.	*OWM*	*Infrastructure*		

Administratively Continued (backlogged) Individual NPDES Permits.	***OWM***	***National Pollutant Discharge Elimination System***		
Water Quality Standards actions in the backlog.	***OST***	***Water Quality Standards***		
Percent of community water systems (CWSs) that have undergone a sanitary survey within the past three years (five years for outstanding performers or those ground water systems approved by the primacy agency to provide 4-log treatment of viruses).	OGWDW	Drinking Water		DW-02
Number of tribal community water systems (CWSs) that have undergone a sanitary survey within the past three years (five years for outstanding performers or those ground water systems approved to provide 4-log treatment of viruses).	OGWDW	Drinking Water		
Fund utilization rate [cumulative dollar amount of loan agreements divided by cumulative funds available for projects] for the Drinking Water State Revolving Fund (DWSRF).	OGWDW	Drinking Water		INFRA-02
Number of Drinking Water State Revolving Fund (DWSRF) projects that have initiated operations.	OGWDW	Drinking Water		
Percent of Classes I, II and Class III salt solution mining wells that have lost mechanical integrity and are returned to compliance within 180 days thereby reducing the potential to endanger underground sources of drinking water.	OGWDW	Drinking Water		
Number of Class V motor vehicle waste disposal wells (MVWDW) and large capacity cesspools (LCC) that are closed or permitted.	OGWDW	Drinking Water		
Percent of DWSRF projects awarded to small PWS serving <500, 501-3,300, and 3,301-10,000 consumers.	OGWDW	Drinking Water		
Number and percent of small community water systems and NTNCWS (<500, 501-3,300, 3,301-10,000) with repeat health based Nitrate/Nitrite, Stage 1 D/DBP, SWTR and TCR violations.	OGWDW	Drinking Water		
Number and percent of schools and childcare centers that meet all health-based drinking water standards.	OGWDW	Drinking Water		
Percent of 'person months' (i.e. all persons served by community water systems times 12 months) during which community water systems in Indian country provide drinking water that meets all applicable health-based drinking water standards.	OGWDW	Drinking Water		
Number of drinking water and wastewater utilities and local, state, and federal officials receiving training and technical assistance to enhance emergency preparedness and resiliency to reduce risk from all hazards including those attributed to climate change impacts.	OGWDW	Drinking Water		
Percent of the population served by community water systems that receive drinking water that meets all applicable health-based drinking water standards through approaches including effective treatment and source water protection.	OGWDW	Drinking Water		DW-03
Number of American Indian and Alaska Native homes provided access to safe drinking water in coordination with other federal agencies.	OGWDW	Drinking Water		INFRA-04

Percent of community water systems that meet all applicable health-based standards through approaches that include effective treatment and source water protection.	OGWDW	Drinking Water		
Percent of "person months" (i.e. all persons served by community water systems times 12 months) during which community water systems provide drinking water that meets all applicable health-based drinking water standards.	OGWDW	Drinking Water		
Percent of the population in Indian country served by community water systems that receive drinking water that meets all applicable health-based drinking water standards.	OGWDW	Drinking Water		DW-04
Percent of community water systems where risk to public health is minimized through source water protection.	OGWDW	Drinking Water		
Percent of the population served by community water systems where risk to public health is minimized through source water protection.	OGWDW	Drinking Water		
Number of water and wastewater utilities that have registered to use the Climate Resilience Evaluation and Awareness Tool (CREAT).	OGWDW	Water Quality		
Drinking Water: Percent of State Population Served by Compliant Community Water Systems and Percent of Community Water Systems Meeting All Applicable Health-Based Standards (11 States).	OGWDW	Water Safe to Drink		
Investments in Water Infrastructure: (1) Wastewater and (2) Drinking Water.	OGWDW; OWM	Infrastructure		
Loading of biochemical oxygen demand (BOD) removed (million pounds/year) from the U.S.-Mexico Border area since 2003.	OWM	U.S.-Mexico Border		
Number of additional homes provided safe drinking water in the U.S.-Mexico border area that lacked access to safe drinking water in 2003.	OWM	U.S.-Mexico Border		
Number of additional homes provided adequate wastewater sanitation in the U.S.-Mexico border area that lacked access to wastewater sanitation in 2003.	OWM	U.S.-Mexico Border		
Number and national percent, using a constant denominator, of Combined Sewer Overflow (CSO) permits with a schedule incorporated into an appropriate enforceable mechanism, including a permit or enforcement order, with specific dates and milestones, including a completion date consistent with Agency guidance, which requires: 1) Implementation of a Long-term Control Plan (LTCP) which will result in compliance with the technology and water quality-based requirements of the Clean Water Act; or 2) implementation of any other acceptable CSO control measures consistent with the 1994 CSO Control Policy; or 3) completion of separation after the baseline date.	OWM	Safe for Swimming		
Number, and national percent, of follow-up actions that are completed by assessed NPDES (National Pollutant Discharge Elimination System) programs.	OWM	Water Quality		
Percent of non-tribal facilities covered by NPDES permits that are considered current.	OWM	Water Quality		
Percent of tribal facilities covered by NPDES permits that are considered current.	OWM	Water Quality		
[DRAFT] Backlog of State- and EPA-Issued Individual NPDES Permits.	OWM	National Pollutant Discharge Elimination System		

Number, and national percent, of MS-4s covered under either an individual or general permit.	OWM	Water Quality		
Number of facilities covered under either an individual or general industrial storm water permit.	OWM	Water Quality		
Number of sites covered under either an individual or general construction storm water site permit.	OWM	Water Quality		
Number of facilities covered under either an individual or general CAFO permit.	OWM	Water Quality		
Number, and national percent, of Significant Industrial Users (SIUs) that are discharging to POTWs with Pretreatment Programs that have control mechanisms in place that implement applicable pretreatment standards and requirements.	OWM	Water Quality		
Number, and national percent, of Categorical Industrial Users (CIUs) that are discharging to POTWs without Pretreatment Programs that have control mechanisms in place that implement applicable pretreatment standards and requirements.	OWM	Water Quality		
Fund utilization rate [cumulative loan agreement dollars to the cumulative funds available for projects] for the Clean Water State Revolving Fund (CWSRF).	OWM	Water Quality		INFRA-03
Number and percent of major NPDES wastewater treatment plant permits with nutrient limits.	OWM	Water Quality		
Number and percent of major NPDES wastewater treatment plant permits with nutrient monitoring requirements.	OWM	Water Quality		
Percent of serviceable rural Alaska homes with access to drinking water supply and wastewater disposal.	OWM	Water Quality		
Number of American Indian and Alaska Native homes provided access to basic sanitation in coordination with other federal agencies.	OWM	Water Quality		INFRA-05
Number of WaterSense partners working to improve water use efficiency.	OWM	Water Quality		
Number of CWSRFs/DWSRFs that used financial incentives to promote climate resilience projects in the last year.	OWM	Water Quality		
Number of States that included specific high priority nutrient reduction actions in their PPA/PPG and/or Section 106 grant work plans for FY18.	OWM	Water Quality		
Point Source N&P: Total Pounds of Nitrogen and Phosphorus Discharged from Major NPDES Facilities.	OWM	National Pollutant Discharge Elimination System		
Percent of Major Wastewater Dischargers without Significant Noncompliance (SNC).	OWM	Wastewater		
Total coastal and non-coastal statutory square miles protected from vessel sewage by “no discharge zone(s).”	OWOW	Coastal and Ocean Waters		
Dollar value of “primary” leveraged resources (cash or in-kind) obtained by the NEP Directors and/or staff in millions of dollars rounded to the nearest tenth of a percent.	OWOW	Coastal and Ocean Waters		
Number of active dredged material ocean dumping sites that are monitored in the reporting year.	OWOW	Coastal and Ocean Waters		
Working with partners, protect or restore additional acres of habitat within the study areas for the 28 estuaries that are part of the National Estuary Program (NEP).	OWOW	Coastal and Ocean Waters		

Percent of active dredged material ocean dumping sites that will have achieved environmentally acceptable conditions (as reflected in each site's management plan and measured through on-site monitoring programs).	OWOW	Coastal and Ocean Waters		
Clean up acres of known contaminated sediments.	OWOW	Columbia River Basin		
Demonstrate a reduction in mean concentration of certain contaminants of concern found in water and fish tissue.	OWOW	Columbia River Basin		
Percent of goal achieved in reducing trade-equalized (TE) point source nitrogen discharges to Long Island Sound from the 1999 baseline of 59,146 TE lbs./day.	OWOW	Long Island Sound		
Reduce the size (square miles) of observed hypoxia (Dissolved Oxygen <3mg/l) in Long Island Sound.	OWOW	Long Island Sound		
Restore, protect or enhance acres of coastal habitat from the 2010 baseline of 2,975 acres.	OWOW	Long Island Sound		
Reopen miles of river and stream corridors to diadromous fish passage from the 2010 baseline of 177 river miles by removal of dams and barriers or by installation of bypass structures.	OWOW	Long Island Sound		
Improve water quality and enable the lifting of harvest restrictions in acres of shellfish bed growing areas impacted by degraded or declining water quality. (cumulative starting in FY 06)	OWOW	Puget Sound Basin		
Protect or restore acres or shoreline miles of aquatic habitats including: estuaries, floodplains, marine and freshwater shorelines, riparian areas, stream habitats and associated wetlands. (cumulative starting in FY06)	OWOW	Puget Sound Basin		
Percent increase of sewage treatment facilities and onsite sewage treatment and disposal systems receiving advanced wastewater treatment or best available technology.	OWOW	South Florida Ecosystem		
The number of Everglades Stormwater Treatment Areas (STAs) with the annual total phosphorus (TP) outflow less than or the same as the five-year annual average TP outflow, working towards the long-term goal of meeting the 10 parts per billion annual geometric mean.	OWOW	South Florida Ecosystem		
Achieve 'no net loss' of stony coral cover (mean percent stony coral cover) in the Florida Keys National Marine Sanctuary (FKNMS) and in the coastal waters of Dade, Broward, and Palm Beach Counties, Florida (SE FL), working with all stakeholders (federal, state, regional, tribal, and local).	OWOW	South Florida Ecosystem		
Annually maintain the overall health and functionality of sea grass beds in the FKNMS as measured by the long-term sea grass monitoring project that addresses composition and abundance, productivity, and nutrient availability.	OWOW	South Florida Ecosystem		
At least seventy five percent of the monitored stations in the near shore and coastal waters of the Florida Keys National Marine Sanctuary will maintain Chlorophyll a (CHLA) levels at less than or equal to 0.35 ug l-1 and light clarity (Kd)) levels at less than or equal to 0.20 m-1.	OWOW	South Florida Ecosystem		

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At least seventy five percent of the monitored stations in the near shore and coastal waters of the Florida Keys National Marine Sanctuary will maintain dissolved inorganic nitrogen (DIN) levels at less than or equal to 0.75 uM and total phosphorus (TP) levels at less than or equal to .25 uM .	OWOW	South Florida Ecosystem		
Number of tribes that currently receive funding under Section 106 of the Clean Water Act that have developed and begun implementing monitoring strategies that are appropriate to their water quality program consistent with EPA Guidance.	OWOW	Water Quality		
Estimated annual reduction in million pounds of nitrogen from nonpoint sources to waterbodies (Section 319 funded projects only).	OWOW	Water Quality		
Estimated annual reduction in million pounds of phosphorus from nonpoint sources to waterbodies (Section 319 funded projects only).	OWOW	Water Quality		
Estimated annual reduction in million tons of sediment from nonpoint sources to waterbodies (Section 319 funded projects only).	OWOW	Water Quality		
Number of waterbodies identified by states (in 1998/2000 or subsequent years) as being primarily nonpoint source (NPS)-impaired that are partially or fully restored.	OWOW	Water Quality		
Number of urban water projects initiated addressing water quality issues in the community.	OWOW	Water Quality		
Number of urban water projects completed addressing water quality issues in the community.	OWOW	Water Quality		
Extent of priority areas identified by each state that are addressed by EPA-approved TMDLs or alternative restoration approaches for impaired waters that will achieve water quality standards. These areas may also include protection approaches for unimpaired waters to maintain water quality standards.	OWOW	Water Quality		
State-wide extent of activities leading to completed TMDLs or alternative restoration approaches for impaired waters, or protection approaches for unimpaired waters.	OWOW	Water Quality		
Number of states protecting or improving water quality conditions, as demonstrated by state-scale statistical surveys: On average, water quality is improving or at least not degrading (there is no statistically significant decrease in mean water quality); The percentage of waters in good condition is increasing or remaining constant; and, The percentage of waters in poor condition is decreasing or remaining constant.	OWOW	Water Quality		
Report on the quality of the nation's waters.	OWOW	Water Quality		
Improve water quality in Indian country at baseline monitoring stations in tribal waters (i.e., show improvement in one or more of seven key parameters: dissolved oxygen, pH, water temperature, total nitrogen, total phosphorus, pathogen indicators, and turbidity).	OWOW	Water Quality		
Identify monitoring stations on tribal lands that are showing no degradation in water quality (meaning the waters are meeting tribal water quality objectives).	OWOW	Water Quality		
Number of acres restored and improved, under the 5-Star, NEP, 319, and great waterbody programs.	OWOW	Wetlands		

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Percent of Clean Water Act Section 404 standard permits, upon which EPA coordinated with the permitting authority (i.e., Corps or State), where a final permit decision in FY 08 documents requirements for greater environmental protection than originally proposed.	OWOW	Wetlands		
Number of Actions completed by states, tribes, and territories to build programs in four areas of wetland management: regulatory, monitoring and assessment, water quality standards, and restoration and protection.	OWOW	Wetlands		
In partnership with the U.S. Army Corps of Engineers, states and tribes, achieve 'no net loss' of wetlands each year under the Clean Water Act Section 404 regulatory program.	OWOW	Wetlands		
Percent Water Bodies Monitored and Waters Meeting Designated Uses: Miles of rivers and streams assessed and associated condition (8 States).	OWOW	Surface Water Protection		
Nonpoint Source N&P: Estimated Annual Reduction in Pounds of Nitrogen and Phosphorus, and in Tons of Sediment from Nonpoint Sources to Waterbodies (Section 319 funded projects only).	OWOW	Nonpoint Source		
Square miles associated with state priority waters addressed by a TMDL, other restoration plan, or protection approach.	OWOW	Water Quality		TMDL-01
Watersheds with surface waters not meeting standards because of nutrients (square miles).	OWOW	Water Quality		
Percent of women of childbearing age having mercury levels in blood above the level of concern.	OST	Fish and Shellfish		
Percent of all Tier I (significant) public beaches that are monitored and managed under the BEACH Act program.	OST	Safe for Swimming		
Percent of days of the beach season that coastal and Great Lakes beaches monitored by state beach safety programs are open and safe for swimming.	OST	Safe for Swimming		
Number of numeric water quality standards adopted for total nitrogen or total phosphorus for all waters within the State or Territory for each of the following waterbody types: lakes/reservoirs, rivers/streams, and estuaries.	OST	Water Quality		
Number of numeric water quality standards planned to be adopted within 3 years for total nitrogen and total phosphorus for all waters within the state or territory for each of the following waterbody types: lakes/reservoirs, rivers/streams, and estuaries, based on a full set of performance milestone information supplied annually by states and territories.	OST	Water Quality		
Number of tribes that have water quality standards approved by EPA.	OST	Water Quality		
Number, and national percent, of states and territories that within the preceding three year period, submitted new or revised water quality criteria acceptable to EPA that reflect new scientific information from EPA or other resources not considered in the previous standards.	OST	Water Quality		
Number, and national percent of tribes that within the preceding three year period, submitted new or revised water quality criteria acceptable to EPA that reflect new scientific information from EPA or other resources not considered in the previous standards.	OST	Water Quality		

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Percentage of submissions of new or revised water quality standards from states and territories that are approved by EPA.	OST	Water Quality		
Number of states and tribes completing triennial reviews on time.	OST	Water Quality Standards		
Number of states and territories with a methodology for notifying the public of when a harmful algal bloom is present.	OST	Surface Water Protection		
Decrease the number of waterbodies impaired by total nitrogen and total phosphorus within the continental United States and territories	OST	Nonpoint Source		
Number of water and wastewater utilities that use the EnergyStar Portfolio Manager to manage energy.	OW	Water Quality		
Percent attainment of water quality standards for dissolved oxygen, water clarity/underwater grasses, and chlorophyll a in Chesapeake Bay and tidal tributaries.	CBPO	Chesapeake Bay		
Percent of goal achieved for implementing nitrogen pollution reduction actions to achieve the final TMDL allocations, as measured through the phase 5.3 watershed model.	CBPO	Chesapeake Bay		
Percent of goal achieved for implementing phosphorus pollution reduction actions to achieve the final TMDL allocations, as measured through the phase 5.3 watershed model.	CBPO	Chesapeake Bay		
Percent of goal achieved for implementing sediment pollution reduction actions to achieve final TMDL allocations, as measured through the phase 5.3 watershed model.	CBPO	Chesapeake Bay		
Number of Beneficial Use Impairments removed within Areas of Concern.	GLNPO	Great Lakes		
Number of multi-agency rapid response plans established, mock exercises to practice responses carried out under those plans, and/or actual response actions.	GLNPO	Great Lakes		
Acres managed for populations of invasive species controlled to a target level.	GLNPO	Great Lakes		
Projected phosphorus reductions from GLRI-funded projects in targeted watersheds.	GLNPO	Great Lakes		
Projected volume of untreated urban runoff captured or treated by GLRI-funded projects.	GLNPO	Great Lakes		
Number of miles of Great Lakes tributaries reopened by GLRI-funded projects.	GLNPO	Great Lakes		
Number of miles of Great Lakes shoreline and riparian corridors protected, restored, and enhanced by GLRI-funded projects.	GLNPO	Great Lakes		
Number of acres of Great Lakes coastal wetlands protected, restored, and enhanced by GLRI-funded projects.	GLNPO	Great Lakes		
Number of acres of other habitats in the Great Lakes basin protected, restored, and enhanced by GLRI-funded projects.	GLNPO	Great Lakes		
Number of Areas of Concern in the Great Lakes where all management actions necessary for delisting have been implemented.	GLNPO	Great Lakes		
Improve and/or restore water and habitat quality to meet water quality standards in watersheds throughout the five Gulf States and the Mississippi River Basin.	GMPO	Gulf of Mexico		
Promote and support environmental education and outreach to the inhabitants of the Gulf of Mexico watershed.	GMPO	Gulf of Mexico		

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Support the assessment, development and implementation of programs, projects and tools which strengthen community resilience.	GMPO	Gulf of Mexico		
Protect, enhance, or restore coastal and upland habitats within the Gulf of Mexico watershed.	GMPO	Gulf of Mexico		
Percent of population in the U.S. Pacific Island Territories served by community water systems that has access to continuous drinking water meeting all applicable health-based drinking water standards, measured on a four quarter rolling average basis.	R9	Pacific Island Territories		

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FY 2018-2019 NPM Guidance	ECOS Common Measures	Comments
WQ-35		

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SDW-01a		
SDW-01b		
SDW-04		
SDW-05		
SDW-07		
SDW-08		
SDW-11		
SDW-15		
SDW-17		
SDW-20		
SDW-21		
SDW-211		
SDW-22		

SDW-SP1		
SDW-SP2		
SDW-SP3		
SDW-SP4a		
SDW-SP4b		
WQ-32		
	ECOS-01	
	ECOS-06	
MB-SP23		
MB-SP24		
MB-SP25		
SS-1		
WQ-11		
WQ-12a		
WQ-12b		

WQ-13a		
WQ-13b		
WQ-13c		
WQ-13d		
WQ-14a		
WQ-14b		
WQ-17		
WQ-20a		
WQ-20b		
WQ-23		
WQ-24		
WQ-30		
WQ-33		
WQ-34		
	ECOS-04	
	ECOS-05	
CO-02		
CO-04		
CO-06		
CO-432		

CO-SP20		
CR-SP53		
CR-SP54		
LI-SP41		
LI-SP42		
LI-SP43		
LI-SP44		
PS-SP49		
PS-SP51		
SFL-1		
SFL-2		
SFL-SP45		
SFL-SP46		
SFL-SP47a		

SFL-SP47b		
WQ-06a		
WQ-09a		
WQ-09b		
WQ-09c		
WQ-10a		
WQ-25a		
WQ-25b		
WQ-27		
WQ-28		
WQ-29		
WQ-SP13		
WQ-SP14a		
WQ-SP14b		
WT-01		

WT-03		
WT-04		
WT-SP22		
	ECOS-02	
	ECOS-03	
FS-SP6		
SS-2		
SS-SP9		
WQ-01a		
WQ-01d		
WQ-02		
WQ-03a		
WQ-03b		

WQ-04a		
WQ-31		
CB-05		
CB-SP35		
CB-SP36		
CB-SP37		
GL-05		
GL-07		
GL-09		
GL-17		
GL-18		
GL-19		
GL-20		
GL-21		
GL-22		
GL-SP31		
GM-01		
GM-02		

GM-03		
GM-SP39		
PI-SP26		

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

INTRODUCTION AND SUMMARY

Defendants oppose Plaintiffs' Motion for Leave to File Supplemental Complaint, Doc. 36, because both of Plaintiffs' proposed supplemental counts fail to state a claim upon which relief may be granted. First, both counts seek to challenge EPA's approval of Ohio's 2016 list of impaired waters, but EPA's July 9, 2018, approval of Ohio's 2018 list supersedes the 2016 list and moots Plaintiffs' claims. Second, Plaintiffs' proposed supplemental count one, a claim under the Administrative Procedure Act ("APA"), fails to state a claim because Plaintiffs fail to identify a final agency action. Although EPA's approval of Ohio's 2016 list is a final agency action as to the listing of impaired waters, Plaintiffs are not challenging that decision. Instead, Plaintiffs argue that Ohio decided it would never submit a total maximum daily load ("TMDL") for western Lake Erie and argue that EPA approved that purported "no TMDL" decision. In fact, Ohio made no such decision, nor did EPA. Third, Plaintiffs' proposed supplemental count two, pled in the alternative as a violation of a nondiscretionary duty, fails to state a claim because it, too, rests of the false premise that

Ohio decided it would never submit a TMDL for western Lake Erie. Because Ohio has not "constructively submitted" no TMDL for western Lake Erie, any statutory duty to review that "constructive submission," should such a duty exist, has not been triggered.

EPA further cross-moves for summary judgment on the existing Complaint, which challenges an action – EPA's May 19, 2017, approval of Ohio's 2016 Section 303(d) List absent the inclusion of the open waters of Lake Erie – that has long since been reversed through subsequent action by EPA and the State and is therefore completely moot.

BACKGROUND

A. Statutory and Regulatory Background

As part of the Clean Water Act's ("CWA") cooperative state/federal framework for addressing water quality, each state must identify waters within its boundaries for which existing pollution controls are not stringent enough to meet applicable water quality standards. 33 U.S.C. § 1313(d)(1). Such waters are known as "water quality limited segments" pursuant to 40 C.F.R. § 130.2(j) or colloquially as "impaired

waters." Every two years, a state must submit a list of water quality limited segments still requiring TMDLs. 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(d)(1). Because the list is required by Section 303(d) of the CWA, 33 U.S.C. § 1313(d), it is commonly referred to as the "Section 303(d) list."

Each state must establish a priority ranking for the water quality limited segments on its Section 303(d) list, taking into account the severity of pollution and the uses to be made of those waters. 33 U.S.C. § 1313(d)(1)(A). States must also identify among those waters which ones are targeted for TMDLs within the next two years. 40 C.F.R. § 130.7(b), (d). States are required to establish TMDLs for each water quality limited segment on their Section 303(d) lists, in accordance with the priority ranking. 33 U.S.C. § 1313(d)(1)(C); 40 C.F.R. § 130.7(c)(1). TMDLs are plans that set the quantity of a pollutant that may be introduced into a receiving water without exceeding applicable water quality standards, taking into account seasonal variations and an adequate margin of safety. 33 U.S.C. § 1313(d)(1)(C). Calculations to establish TMDLs are subject to public review. 40 C.F.R. §

130.7(c)(1)(ii).

Ohio, like many states, combines its Section 303(d) list with a water quality report and submits both together as an "integrated report." In *Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017), the court erroneously stated that states identify their impaired waters *and* establish their TMDLs by submitting these integrated reports. 266 F. Supp. 3d at 176.[1] That misreads the statute, regulations, and EPA's guidance. Section 303(d) lists and integrated reports on the one hand, and TMDLs on the other, are distinct and very different documents and actions. Section 1313(d)(1)(A) requires states to "identify" impaired waters; section 1313(d)(1)(C) then requires states to "establish" for those identified waters a TMDL.

EPA regulations carry forward this distinction. In 40 C.F.R. § 130.7, subsection (b) addresses the "identification and priority setting for water quality-limited segments still requiring TMDLs," *i.e.*, the Section 303(d) list, while subsection (c) addresses the TMDLs

[1] *See also* April 11, 2018, Order, Doc. 29 at 8.

themselves. Thus, while an integrated report typically contains the Section 303(d) list, including a priority ranking of water quality limited segments still requiring TMDLs and the state's schedule for which TMDLs will be developed over the next two years, the TMDLs themselves are not part of the integrated report (or the Section 303(d) list), nor are they typically submitted with that report.

The timing provisions for Section 303(d) lists and for TMDLs are also distinct. The statute sets a deadline for the initial list of "waters identified" and the initial "loads established" based on when EPA first identifies relevant pollutants under Section 304(a)(2)(D) of the Act, but otherwise Section 303(d) lists and TMDLs are due "from time to time" under the statute. 33 U.S.C. § 1313(d)(2). EPA regulations require states to submit Section 303(d) lists every two years, but there is no similar regulatory deadline for states to submit additional TMDLs. 40 C.F.R. § 130.7(d)(1). Instead, TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." *Id.* There is no statutory or regulatory timeframe, deadline, or other restriction on

the timing for states to submit TMDLs, or for states and EPA to determine schedules.

Therefore, as explained by longstanding EPA guidance, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, at 63 (July 29, 2005) ("2006 Assessment Guidance"), available at https://www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf.[2] This guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57. EPA has also explained that "[i]n some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the

[2] The 2006 Assessment Guidance focuses on how to assess, categorize, and report on water quality attainment and supporting data and information. 2006 Assessment Guidance at 6. It does not address how to develop or submit TMDLs.

applicable standard is met)." *Id.*

Once a state submits a Section 303(d) list, or a TMDL, EPA must approve or disapprove the submission within 30 days. 33 U.S.C. § 1313(d)(2). If EPA disapproves a Section 303(d) list, EPA must identify the water quality limited segments that should be on the list, and must do so within 30 days after the date of disapproval. *Id.* EPA must then "promptly issue a public notice" and take comment on the water quality limited segments so identified. 40 C.F.R. § 130.7(d)(2). Finally, after considering the comments received, EPA must then make any appropriate revisions to the list. Similarly, if EPA disapproves a state TMDL, EPA must establish its own TMDL within 30 days after EPA's disapproval. *Id.*

If EPA approves a Section 303(d) list or disapproves a list and identifies waters for the state or approves or disapproves a TMDL that has been publicly noticed, those actions are final agency actions that an interested party may challenge under the Administrative Procedure Act. If EPA fails to act, an interested party can sue EPA for its failure to perform "any act or duty under this chapter which is not

discretionary with [EPA]." 33 U.S.C. § 1365(a)(2). However, no such action may be commenced "prior to sixty days after the plaintiff has given notice of such action to the Administrator [of EPA]." *Id.* § 1365(b)(2). EPA's regulations specify the form and content of the required notice. *See, e.g.*, 40 C.F.R. § 135.2(a)(3) (notice must be accomplished by certified mail and sent to specific recipients); 40 C.F.R. § 135.3(b) (notice must identify the statutory provision which requires the nondiscretionary action and describe with "reasonable specificity" the action taken or not taken).

B. Factual Background

Ohio submitted its 2016 integrated report (including its 2016 Section 303(d) list) on October 20, 2016. EPA approved Ohio's 2016 Section 303(d) list on May 19, 2017, but withdrew that approval on January 12, 2018. Ohio supplemented its 2016 Section 303(d) list on May 4, 2018, and EPA approved that amendment on May 10, 2018.

On June 1, 2018, Ohio submitted its 2018 integrated report (and 2018 Section 303(d) list), and on July 9, 2018, EPA approved Ohio's 2018 Section 303(d) list. In both the 2016 Section 303(d) list (as

amended and approved in May 2018) and the 2018 Section 303(d) list, Ohio listed as impaired three assessment units for the open waters of Lake Erie: the Western Basin, the Sandusky Bay area, and the Central Basin. These open water assessment units are in addition to several shoreline assessment units, including public drinking water supply intake zones, that are also identified in both reports as impaired.

ARGUMENT

Although leave to supplement a pleading "shall be freely given when justice so requires," a motion to supplement under Fed. R. Civ. P 15 should be denied if the amendment would be futile, *i.e.*, if the amendment "could not withstand a Rule 12(b)(6) motion to dismiss." *Riverview Health Institute LLC v. Medical Mutual of Ohio*, 601 F.3d 505, 520 (6th Cir. 2010) (internal citations and quotations omitted). Because neither of the proposed additional counts state a claim on which relief may be granted, the amendment would be futile and should be denied.

I. Both of Plaintiffs' Proposed New Counts Are Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Both of Plaintiffs' proposed counts fail to state a claim because

they challenge EPA's approval of Ohio's 2016 Section 303(d) list, but that list (and EPA's approval thereof) has been superseded by the 2018 list (and EPA's approval thereof). In *Blue Water Baltimore*, 266 F. Supp. 3d at 180-181, the court found that EPA's approval of a state's 2014 303(d) list superseded its approval of the preceding 2012 303(d) list, thus mooting plaintiffs' challenge to EPA's approval of the 2012 list. This Court should do the same, and hold that Ohio's 2018 Section 303(d) list, once approved by EPA, supersedes Ohio's 2016 list and moots Plaintiffs' challenges to EPA's approval of the 2016 list.

II. Plaintiffs' Proposed Count One Does Not Challenge a Final Agency Action Reviewable Under the APA.

As this Court has explained, to be "final," an agency action must mark the consummation of the agency's decisionmaking process and must determine rights or obligations from which legal consequences will flow. April 11, 2018, Order, Doc. 29, at 20-21.

EPA's approval of Ohio's 2016 Section 303(d) list, as amended, is certainly final agency action with respect to the actual listing of impaired waters, which is the subject of Plaintiffs' original complaint. However, EPA did not take any final agency action with respect to what

Plaintiffs now seek to challenge: Ohio's purported decision refusing to develop a TMDL for western Lake Erie. Contrary to Plaintiffs' arguments, there is no final agency action regarding that, for two reasons.

First, the factual predicate for Plaintiffs' argument is expressly contradicted by the one, and only, source of information on which Plaintiffs rely: Ohio's amended 2016 Section 303(d) list. Plaintiffs assert that "in that submission," *i.e.*, the amended 2016 Section 303(d) list, Ohio "refused to develop and establish a [TMDL] for the phosphorus pollution" in western Lake Erie. Pl. Mot. at 1. *See also* Pl. Mem. at 1 ("in the same submission," *i.e.*, the amended 2016 Section 303(d) list, "Ohio EPA stated that it would not develop a TMDL to address the harmful algal bloom problem.") *See also* proposed First Suppl. Compl. ¶ 18 (citing the amended 2016 list at 9, "Ohio EPA has flatly stated that it would not move forward with the development of a TMDL."); *id.* ¶ 77 (citing the amended 2016 list at 9, "Ohio EPA specifically indicated it would *not* develop a TMDL for western Lake Erie"); *id.* ¶¶ 92-93 ("in its May 4, 2018, submission," "Ohio EPA . . . has

definitively stated it will not develop a TMDL").

What Ohio EPA actually said is worth quoting in full:

> Given the complexity of the algae bloom problem, Ohio believes the best approach for solving the issues in western Lake Erie is through the collaborative process established under Annex 4 of the Great Lakes Water Quality Agreement and the Domestic Action Plans as they afford a holistic, multi-jurisdictional perspective that does not exist in a traditional TMDL process. If the current collaborative processes fail to restore the designated use attainment *we recognize that a TMDL or other approach allowed by the USEPA to address impaired waters under the CWA will ultimately be required.*

2016 Integrated Report Amendment at 9 (emphasis added).

This is not a situation where the Court must resolve an ambiguity or draw an inference. The only support offered for the key assertion underlying Plaintiffs' position in fact says the opposite of what Plaintiffs claim. Ohio has neither abandoned its obligation to produce a TMDL for western Lake Erie, nor has Ohio refused to develop a TMDL. Without this factual predicate of an express refusal to develop a TMDL, there can be no EPA action approving the alleged state refusal, as there is no refusal to approve or disapprove.

Second, even if the Court were to ignore Ohio's recognition that it might in the future develop a TMDL, and find Plaintiffs' assertion that

the lack of a current TMDL submission necessarily constitutes a refusal to do so, Plaintiffs' proposed count one is still futile because there was no final agency action regarding the purported "no TMDL" statement.

In its approval letter, EPA noted that the amended Section 303(d) list "discusses how Ohio will continue to address nutrient loadings to Lake Erie." Letter from Cathy Stepp, Regional Administrator, to Tiffani Kavalec, Chief, Division of Surface Water, Ohio EPA, May 10, 2018, at 1-2. But EPA's letter goes on to state that EPA finds that Ohio EPA's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking" under 40 C.F.R. § 130.7(b)(4). *Id.* at 2.

When EPA reviews a state's Section 303(d) list, the agency simply confirms that the state has included a priority ranking that, consistent with EPA's regulations, "tak[es] into account the severity of the pollution and uses to be made of such waters." 40 C.F.R. § 130.7(b)(4). *See* 2006 Assessment Guidance, at 63 ("EPA will review the priority ranking but will not take action to approve or disapprove it."). EPA does not weigh the relative merits of the state's ranking, and the

statute "provides no specific mechanism for reviewing this prioritization." *Sierra Club v. McLerran*, No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015). EPA's acknowledgement that Ohio did prioritize the impaired waters of Lake Erie (which Plaintiffs do not challenge) does not itself represent either the consummation of EPA's decisionmaking on whether Ohio has abandoned its obligation to produce a TMDL or represent a conclusion that determines rights or obligations or has legal consequences. In fact, Plaintiffs themselves note that EPA did not "even mention[] the State of Ohio's failure to comply with its TMDL responsibilities." Pl. Mem. at 2. Contrary to Plaintiffs' assertions, EPA's lack of reference to the absence of a submission that Ohio did not yet have any obligation to provide is not surprising. Instead, EPA simply recognized what Ohio EPA did: the state included the segments on its list of impaired waters impaired "still requiring TMDLs", 40 C.F.R. § 130.7(b)(2), and assigned a prioritization to the open waters of western Lake Erie.

Plaintiffs rely heavily on the *McLerran* case, arguing that it refutes Ohio's approach. But *McLerran* involved materially different

facts. Instead of a Section 303(d) list, in *McLerran* the state developed a draft TMDL, but finalized the document as a "Strategy" which involved the creation of a task force, and stated that it "is not currently planning to develop" a TMDL. 2015 WL 1188522 at *3. Sierra Club requested EPA to determine whether the state had abandoned the TMDL, and EPA concluded the state had not, and that the strategy and task force were "an acceptable alternative to a TMDL." *Id.* *4. The court agreed with EPA that the state had not abandoned the TMDL – a point to which we will return in the discussion of Plaintiffs' proposed count two – but found under the APA that EPA's approval of the task force was arbitrary. *Id.* *10. This separate approval document, issued in response to a specific request to determine whether a state had abandoned a specific TMDL, is materially different than the general statement at issue here, in the different context of EPA's approval of a Section 303(d) list of impaired waters. Unlike in *McLerran*, EPA's acknowledgement that Ohio's 303(d) list "discusses how Ohio will continue to address nutrient loadings to Lake Erie" is not an explicit decision on the precise question of abandonment, and is therefore not a

final agency action. The fact is that Ohio was not obligated to submit a TMDL simultaneously with its submission of its Section 303(d) list and thus EPA had no need to approve or reject that non-submission.

Because Plaintiffs cannot support their assertion that Ohio decided it will not develop any TMDL for western Lake Erie, and because EPA has not taken any final agency action regarding Ohio's statement that a TMDL "will ultimately be required," Plaintiffs' proposed count one fails to state a claim and allowing Plaintiffs to supplement the complaint would be futile.

III. Plaintiffs' Proposed Count Two Does Not Identify A Nondiscretionary Duty.

Plaintiffs' proposed count two asserts that EPA violated a nondiscretionary duty to act within 30 days because Ohio EPA allegedly decided "not to undertake development of a TMDL for western Lake Erie." Proposed Supplemental Compl. ¶ 103.

Plaintiffs' motion to add their proposed count two should be denied for their failure to follow the required process. As EPA has previously explained, such a claim requires 60-day statutory notice before filing suit, 33 U.S.C. § 1365(b)(2): this requirement cannot be

waived. Plaintiffs did not provide the requisite notice.

Even if Plaintiff had somehow satisfied that requirement, Plaintiffs' proposed count two still fails to state a claim. In their motion, Plaintiffs explain that they seek to include their proposed count two "as a protective measure" in the event that there is no final agency action "regarding Ohio EPA's decision not to submit a TMDL." Pl. Mem. at 11 n.1. Plaintiffs' proposed count two assumes no final agency action by EPA and is therefore based on the same faulty reading of Ohio's amended 2016 Section 303(d) list by assuming that a TMDL must be submitted with a 303(d) list.

Plaintiffs argue that some courts have found that a state's decision not to submit a TMDL is a "constructive submission" of "no TMDL," thereby triggering EPA's nondiscretionary duty to approve or disapprove of that "constructive submission." *See, e.g.*, Proposed Supplemental Compl. ¶ 104. For example, in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984), the court found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure may amount to the 'constructive submission' by that state of no TMDL's

[sic]." *Id.* The long passage of time – six years, in that case – "raises the possibility that the states have determined that TMDL's for Lake Michigan are unnecessary." *Id.* at 997.

Like *Scott*, most courts that have applied the constructive submission theory have looked at a state's entire TMDL program. *See, e.g., Ohio Valley Envir. Coal. v. Pruitt,* No. 17-1430, 2018 WL 3039954 (4th Cir., June 20, 2018) (in light of West Virginia's good faith efforts, "we cannot conclude that West Virginia has 'clearly and unambiguously' refused to submit TMDLs"). Plaintiffs do not assert that Ohio has failed to submit any TMDLs, but instead point to the only court decision that has considered whether a state could trigger a constructive submission by refusing to submit a single, particular TMDL: *McLerran*. That decision held that "a state's failure to prepare a particular TMDL [can] ripen into a constructive submission." 2015 WL 1188522 at *7. However, as noted above, *McLerran* found that the State of Washington had not constructively submitted no TMDL, because there were "information gaps . . . such that [the state] could not confidently issue a TMDL at any point in the near future." *Id.* at *8. In particular, the

court noted that the state "lacked sufficient scientific data and had not satisfied certain pre-submission requirements, *i.e.*, public notice and consultation." *Id.* In contrast, if a TMDL were "essentially complete and ready for submission, a last-minute pivot to an illusory alternative may indicate a decision to abandon the TMDL." *Id.*

Here, Ohio has only recently listed western Lake Erie as impaired, and Plaintiffs do not, and cannot, contend that Ohio has already developed the scientific data necessary for a TMDL, much less that Ohio has completed the required public notice requirements. Thus, even if the Court were to accept the constructive submission theory and the *McLerran* court's extension of that theory to a single TMDL, Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.

IV. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

As noted in Defendants' May 11, 2018, Status Report, Doc. 30 at 2, EPA's May 10, 2018, action approving Ohio's Section 2016 303(d) list, as amended, moots Plaintiffs' claims as pled in Plaintiffs' original complaint, to the extent the Court has jurisdiction over those claims.

See April 11, 2018, Order (Doc. 29) at 24 n.15 (citing *Anacostia Riverkeeper, Inc. v. Jackson*, 713 F. Supp.2d 50, 51 n.1 (D.D.C. 2010)). If the Court denies Plaintiffs' motion to supplement the complaint, nothing is left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should deny Plaintiffs' motion to file a supplemental complaint because neither of Plaintiffs' proposed supplemental counts state a claim upon which relief may be granted, and should grant Defendants' cross motion for summary judgment and terminate the case because EPA's approval of Ohio's amended 2016 Section 303(d) list moots Plaintiffs' original claims.

Respectfully submitted this 10th day of July 2018.

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CERTIFICATE OF SERVICE

I hereby certify that on July 10, 2018, I electronically filed the foregoing MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
Daniel R. Dertke

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

TABLE OF CONTENTS

TABLE OF AUTHORITIES ii

INTRODUCTION AND SUMMARY 1

BACKGROUND 2

ARGUMENT 5

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie 5

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act On Ohio's Plans To Address Nutrient Pollution in Lake Erie 12

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List 13

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie 16

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment 19

CONCLUSION 20

TABLE OF AUTHORITIES

CASES

Blue Water Baltimore v. Pruitt,
266 F. Supp. 3d 174, 180-81 (D.D.C. 2017),
judgment amended, 293 F. Supp. 3d 1 (D.D.C. 2017) 14

Ohio Valley Envtl. Coalition, Inc. v. Pruitt,
893 F.3d 225 (4th Cir. 2018) 5, 6, 7

San Francisco Baykeeper v. Whitman,
297 F.3d 877 (9th Cir. 2002) 6, 11

Scott v. Hammond,
741 F.2d 992 (7th Cir. 1984) 6, 7, 11, 12

Sierra Club v. McLerran,
No. 11-cv-1759, 2015 WL 1188522
(W.D. Wash., March 16, 2015) 7, 8, 9, 10, 17, 18

STATUTES

33 U.S.C. § 1313(d)(2) 3, 6

33 U.S.C. § 1314(a)(2)(D) 3

CODE OF FEDERAL REGULATIONS

40 C.F.R. § 130.7(b)(4) 4, 17

40 C.F.R. § 130.7(d)(1) 3

FEDERAL REGISTER

57 Fed. Reg. 33,040 (July 24, 1992) 5

LEGISLATIVE HISTORY

H. R. Rep. No. 92-911 (1972) 4

INTRODUCTION AND SUMMARY

The two motions before the Court essentially ask whether Ohio has made a "constructive submission" of no TMDL for nutrient pollution in the open waters of western Lake Erie. Plaintiffs' two new proposed claims assert that Ohio has not yet begun a TMDL for the lake's open waters, but Plaintiffs have not and cannot credibly assert that Ohio has clearly and unambiguously refused to ***ever*** prepare such a TMDL, and that makes all the difference. Ohio has not refused to prepare a TMDL for the western basin of Lake Erie and indeed expressly recognizes that a TMDL is needed and may be developed in the future. Therefore, even under the most expansive expressions of the so-called constructive submission theory articulated in *McLerran* and the other cases Plaintiffs cite, Plaintiffs' proposed Count Two fails to assert the facts necessary to state a claim that Ohio has constructively submitted no TMDL.

Plaintiffs also assert that when EPA approved Ohio's 2016 Section 303(d) list of impaired waters, EPA also approved certain statements Ohio made in its 2016 Integrated Report. Although EPA certainly

acknowledged Ohio's statements regarding the State's plans to address nutrient pollution in the lake's open waters, EPA neither approved nor disapproved them. Instead, EPA followed its regulations, which require EPA to approve or disapprove of the actual list of impaired waters still requiring TMDLs and the inclusion of priority rankings, *i.e.*, Ohio's Section 303(d) list. EPA has no formal role in reviewing the other parts of a state's Integrated Report. Plaintiffs' proposed Count One therefore fails to state a claim because Plaintiffs cannot point to any judicially reviewable final agency action regarding Ohio's plans to reduce nutrient pollution.

Finally, even if the Court finds that EPA did take final agency action regarding Ohio's plans, EPA's approval of Ohio's 2018 Section 303(d) list supersedes its approval of Ohio's 2016 list, which moots Plaintiffs' claim.

BACKGROUND

As we explained in our opening memorandum, ECF No. 39, the CWA sets a deadline for states to submit their initial TMDLs and Section 303(d) lists based on when EPA first identifies relevant

pollutants under 33 U.S.C. § 1314(a)(2)(D). After that, the statute requires states to submit subsequent Section 303(d) lists and TMDLs "from time to time." 33 U.S.C. § 1313(d)(2). While EPA's regulations specify that states must submit Section 303(d) lists every two years, *see* 40 C.F.R. § 130.7(d)(1), there is no similar regulatory requirement for TMDLs. Nor is there any requirement for states to submit additional TMDLs with their Section 303(d) list or as part of an integrated report. Instead, EPA's regulations simply provide that TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." 40 C.F.R. § 130.7(d)(1). Thus, there is no firm statutory or regulatory timeframe, deadline, or other restriction on the timing for states to submit TMDLs.

Nor is there any requirement for a state to begin work on a TMDL as soon as a water quality limited segment is listed as impaired. Plaintiffs argue that because Ohio has not yet started work on a nutrient TMDL, Ohio is not complying with a statutory requirement "to promulgate a [TMDL]." Pl. Combined Memo (ECF No. 40) at 1; *see also*

id. at 3 (asserting Ohio's "refusal to begin the TMDL process" is "illegal"). But in assembling their Section 303(d) lists, states must identify "waters targeted for TMDL development in the next two years," which allows waters to remain on a state's list for *more* than 2 years before waters are "targeted for TMDLs development." 40 C.F.R. § 130.7(b)(4). And as explained by longstanding EPA guidance interpreting the statutory and regulatory framework, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* at 63 (July 29, 2005) ("2006 Assessment Guidance") (relevant excerpts attached as Exhibit 1).

There is good reason for this flexibility because, as Congress understood when it enacted the TMDL program into law, "it is extremely difficult to apportion the discharge load from all point sources along a waterway or section of a waterway." H. R. Rep. No. 92-911, at 105-06 (1972). This is especially true of "'complex' TMDLs that may cover a large watershed or address particularly challenging pollution

problems," as opposed to comparatively "routine or 'simple' TMDLs that may be developed as part of an NPDES permit reissuance." Surface Water Toxics Control Program and Water Quality Planning and Management Program, 57 Fed. Reg. 33,040, 33,044 (July 24, 1992). For those TMDLs that require "complex analysis," it is appropriate to "allow time to collect necessary information and complete the analysis." 2006 Assessment Guidance at 63; *see also Ohio Valley Envtl. Coalition, Inc. v. Pruitt*, 893 F.3d 225, 231 n.4 (4th Cir. 2018) ("TMDLs may require substantial time and resources to develop."). The same guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57.

ARGUMENT

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie.

Plaintiffs repeatedly argue that Ohio has refused to begin the TMDL process for the open waters of western Lake Erie. *See, e.g.*, Pl. Combined Memo at 2, 3, 4, 5, 6. But, as explained below, the relevant legal question is whether Ohio has "'clearly and unambiguously'"

indicate[d] that it will not 'submit any TMDLs and has no plans to remedy this situation.'" *Ohio Valley Envir. Coal.,* 893 F.3d at 230 (quoting *S.F. Baykeeper v. Whitman*, 297 F.3d 877, 882 (9th Cir. 2002)). Plaintiffs have not and cannot point to any statement, action, or inaction by Ohio that clearly and unambiguously shows that Ohio will never prepare a TMDL for nutrient pollution in the open waters of western Lake Erie.

Plaintiffs rely on the constructive submission theory, which began in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984). In *Scott*, the State of Illinois had failed to submit any TMDLs, not even the initial ones for which the CWA does impose a deadline. However, the CWA does not provide a cause of action to sue a state if a state fails to submit a TMDL, so the plaintiffs in *Scott* sued EPA. EPA argued that once a state submits a TMDL, EPA must approve or disapprove the submission within 30 days, under 33 U.S.C. § 1313(d)(2), but if a state does not submit anything, EPA has no statutory duty to act. 741 F.2d. at 997-98. The Seventh Circuit found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure

. . . raises the possibility that the states have determined that [TMDLs] . . . are unnecessary." *Id.* at 997.

Almost every court which has adopted the legal fiction of a constructive submission has examined whether a state has abdicated its TMDL program statewide. *See Ohio Valley Envir. Coal.,* 893 F.3d at 229-30 (collecting cases). In a recent decision, the Fourth Circuit Court of Appeals reviewed the constructive submission caselaw and observed that courts "have declined to find a 'constructive submission' of no TMDLs where a state (1) has produced at least some TMDLs and (2) has a credible plan in place to produce others." *Id.* Plaintiffs do not, and cannot, allege that Ohio has failed either of those prongs, let alone both of them.

Plaintiffs instead argue that Ohio has constructively refused to submit a particular TMDL. Only one court, *Sierra Club v. McLerran*, No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015), has indicated that a state like Ohio, with an otherwise robust TMDL program, can nonetheless trigger a constructive submission. No court in this Circuit has adopted the constructive submission theory, much

less *McLerran*'s unprecedented extension of it, and the Court should not do so now. But even if the Court were to adopt the theory, and to take the additional step of following *McLerran*, not even that case supports Plaintiffs' attempt to state a constructive submission claim.

In *McLerran*, the court considered a citizen suit to compel EPA to disapprove the State of Washington's alleged constructive submission of no TMDLs for PCBs in the Spokane River. Although the court went beyond the constructive submission theory as articulated by the Fourth and Seventh Circuits, and other courts, to conclude there could be a constructive submission of no TMDL when a state "clearly and unambiguously indicate[s] that it will not produce a particular TMDL," the court actually held that such a situation had not occurred, even though the Spokane River was first listed for PCBs in 1996. *Id.* at *2, 7-9. In the court's view, where "information gaps persisted such that [the state] could not confidently issue a TMDL at any point in the near future, adopting an alternative may, under some circumstances, represent a reasonable interim measure rather than an abandonment of any future plans to prepare a TMDL." *Id.* at *8.

Assuming for the sake of argument that the Court agrees with *McLerran*'s view of the constructive submission theory, Plaintiffs have not alleged the specific facts necessary to meet *McLerran*'s standard. Ohio's 2018 Integrated Report explains "why a TMDL is not being pursued *immediately*," Ohio 2018 Integrated Water Quality Monitoring and Assessment Report ("2018 Integrated Report") (relevant excerpts attached as Exhibit 2) at D-31 (emphasis added). Ohio also lists most of the lake's assessment units as "Impaired, needs TMDL." *Id.* at J-16. As in *McLerran*, the State has not "abandon[ed] any future plans" to produce a TMDL for the open waters and Plaintiffs have alleged no specific facts to the contrary.

Plaintiffs also claim that Ohio is merely giving "lip service to the idea that it may establish a TMDL at some undetermined future time," Pl. Combined Memo at 1, but Plaintiffs have absolutely no support for that statement, and certainly nothing to show that the State has "clearly and unambiguously *abandoned* its obligation to produce a TMDL." *McLerran*, 2015 WL 1188522, at *7 (emphasis in original). Ohio's 2018 Integrated Report explains in detail the efforts Ohio is

making to address nutrients in Lake Erie. 2018 Integrated Report at J-10. These efforts include the Great Lakes Water Quality Agreement, the Lake Erie Collaborative Agreement, Ohio's Domestic Action Plan for Lake Erie, TMDLs for 22 of the 32 watersheds that feed into the lake, and numerous other nutrient reduction efforts. *Id.* at J-10 to J-15. Plaintiffs have identified nothing in the Clean Water Act that would strip Ohio of its "considerable flexibility" to pursue these nutrient pollution control efforts before developing a TMDL for the western basin of Lake Erie.

Plaintiffs dismiss these efforts out of hand, as simply a means of indefinitely delaying a TMDL, again relying on *McLerran*. Pl. Combined Memo at 1. But *McLerran* cannot save Plaintiffs' constructive submission claim, for two reasons. First, as just explained, the court in *McLerran* found that the State of Washington's exploration of an alternative to a TMDL did *not* amount to a constructive submission of no TMDL. Second, the waterbody in *McLerran* had been on the state's Section 303(d) list for 19 years. 2015 WL 1188522 *10. Here, in contrast, the open waters were first listed this year. While

Plaintiffs may argue that the lake's open waters should have been listed in 2016, they cannot dispute that the obligation to develop a TMDL cannot precede a waterbody's listing as impaired.

If Plaintiffs are allowed to state a claim for a constructive submission by alleging that Ohio has not begun work on a TMDL less than a year after the lake's open waters were listed, the constructive submission theory would be stretched far beyond what any judicial decision, including *McLerran*, has held. It would amount to a rule that a state must begin developing a TMDL as soon as a waterbody is listed. That would upend the states' statutory prioritization process and would go beyond anything that the CWA, EPA's regulations, or the caselaw requires. *Cf. San Francisco Baykeeper v. Whitman*, 297 F.3d 877, 885 (9th Cir. 2002) (Section 303(d) contains no "requirement of simultaneous submission of the list of polluted waters with the TMDL to correct each polluted water"). Such a holding would also effectively place Ohio's water quality program under a proxy conservatorship, something that no court has endorsed, which is precisely why the constructive submission theory has always been predicated on a state's "fail[ure]

over a long period of time to submit" TMDLs required by law. *Scott*, 741 F.2d at 996 (emphasis added).

Instead, Plaintiffs' motion to add their proposed Count Two should be denied because Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.[1]

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

In order for Plaintiffs' proposed Count One to state a claim, Plaintiffs must allege a judicially reviewable final agency action. Plaintiffs argue that the statements Ohio made in its 2016 Integrated Report regarding the State's plans to address nutrient pollution in Lake

[1] Plaintiffs' proposed Count Two suffers from the additional flaw that it only asserts that Ohio's 2016 section 303(d) list is a constructive submission of no TMDL. First Suppl. Compl. ¶¶ 103-104; Pl. Combined Memo at 2, 4, 5. In Argument II we explain why EPA's approval of the 2016 list is not a final agency action with respect to Ohio's nutrient pollution reduction plans and why EPA's approval of Ohio's 2016 list is moot, but a constructive submission argument depends on Ohio's intent, and that should be evaluated based on Ohio's most current statements. In other words, proposed Count Two also fails to state a claim because it fails to assert Ohio's *present* intentions regarding a TMDL for the open waters of western Lake Erie.

Erie amount to a constructive submission for EPA to approve or disapprove, separate and apart from Ohio's 2016 Section 303(d) list of impaired waters. Pl. Combined Memo at 9. Plaintiffs also argue that EPA in fact approved those statements when EPA approved the 2016 list. *Id.*

Plaintiffs' argument presents two problems. First, EPA's approval of Ohio's 2016 list is moot, so if EPA took any reviewable final agency action regarding a constructive submission (which it has not), that final agency action could only be EPA's approval of the 2018 list. Second, even if EPA's approval of the 2016 list is not moot, Ohio's statements regarding its plans to address nutrient pollution in Lake Erie are not a constructive submission of no TMDL, and EPA did not take any final agency action regarding Ohio's statements.

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Like Count Two, Plaintiffs' proposed Count One challenges EPA's approval of Ohio's 2016 Section 303(d) list. Plaintiffs argue that even though EPA has now approved a 2018 list, EPA's approval of the 2016 list is not moot because it is an action that is capable of repetition yet

evading review. Pl. Combined Memo at 7-8. Plaintiffs downplay the mootness argument as a "flurry of procedural claims that amount to nothing," *id.* at 6, but mootness is an essential question of subject matter jurisdiction that a court cannot simply waive aside.

Plaintiffs' challenge to EPA's approval of the 2016 list is moot. *See Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174, 180-81 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017). The plaintiffs in *Blue Water* sought to challenge "the reclassifications in [a] 2012" report, but EPA addressed those reclassifications in "both the 2012 and 2014" reports. 266 F. Supp. 3d at 180-81; *see also id.* (the 2014 report "reiterated the rationale stated in the 2012 [report] regarding the reclassification and de-listings at issue"). The court held that "a decision may be superseded by a subsequent decision based on the same rationale because the subsequent decision replaces the prior decision, rendering it void." *Id.* Just as the 2014 report in *Blue Water* "replace[d] the previous list," *id.*, Ohio's 2018 list replaced its 2016 list, so the 2016 list has "no further legal effect." *Id.*[2] The Court cannot

[2] Plaintiffs add in a footnote that the Court could allow them to amend

order any effective relief with respect to the 2016 list.

Plaintiffs assert that they satisfy the capable of repetition yet evading review exception to mootness. They argue that any legal defect in EPA's approval of the 2016 list is capable of repetition because the approval of the 2018 list "merely duplicates" EPA's prior approval, and that it evades review because it is too short in its duration to litigate. Pl. Combined Memo at 6, 8.

But any reading of Ohio's 2016 submission and EPA's 2016 approval to suggest that Ohio constructively submitted no TMDL by expressly disclaiming any responsibility to develop one, is resoundingly refuted by the 2018 Integrated Report and EPA's 2018 approval. The sole support for Plaintiffs' constructive submission claim – statements taken out of context from Ohio's 2016 Integrated Report and misconstrued as definitive statements that Ohio will never develop a TMDL for the western basin of Lake Erie – are *not* repeated in the 2018

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proposed Count One to address EPA's approval of the 2018 list, as the *Blue Water* court did, Pl. Combined Memo at 9 n.2. EPA agrees that this would resolve any mootness concerns, but that amendment would be futile. As we explain below, when EPA approved Ohio's 2018 list EPA took no action on Ohio's future TMDL plans, so Plaintiffs fail to identify a reviewable final agency action regarding either approval.

Integrated Report. Indeed, as noted *supra* at 9, the 2018 Integrated Report classifies all of the Lake Erie assessment units as "Impaired, needs TMDL." 2018 Integrated Report at J-16. Ohio also wrote that where the nutrient reductions from TMDLs in tributaries to Lake Erie "are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps." *Id.* at J-12. And EPA stated in its 2018 Approval that it "expects that under those circumstances [*i.e.*, the inadequacy of Ohio's current nutrient pollution reduction plans] such 'next steps' *would* include TMDL development for the Lake Erie Assessment Units directly." 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) ("EPA 2018 Approval") (ECF No. 40-1, attached as Exhibit A to Pl. Combined Memo), at 18 (emphasis added); *see also* 2018 Integrated Report at D-31 (recognizing that if the water quality in the western basin fails to improve, "a TMDL may ultimately be required").

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

Even if EPA's approval of Ohio's 2016 list were not moot, EPA's

statements regarding Ohio's plans do not amount to final agency action on whether Ohio constructively submitted no TMDL. Instead, EPA's approval is final agency action on exactly what it purports to be: the State's section 303(d) list of impaired waters, no more, no less.

Plaintiffs point out that EPA made a finding that Ohio's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking." Pl. Combined Memo at 10. As we noted in our opening memo, EPA simply confirms that the state has included a priority ranking that "tak[es] into account the severity of the pollution and uses to be made of such waters." 40 C.F.R. § 130.7(b)(4). EPA does not actually approve the ranking, much less Ohio's "discussion of its prioritization." *See* 2006 Assessment Guidance at 63 ("EPA will review the priority ranking but will not take action to approve or disapprove it."); *McLerran*, 2015 WL 1188522 at *6 (there is "no specific mechanism for reviewing [a state's] prioritization").

Plaintiffs also point to EPA's "blanket determination" that Ohio's 2016 list met the statutory and regulatory requirements. Pl. Combined Memo at 10. Plaintiffs argue that *McLerran* is analogous and refutes

Ohio's "flawed" approach. *id.* at 11, but Plaintiffs skip an essential step: in *McLerran* there was no question that EPA had taken final agency action on whether the state had made a constructive submission. The court in *McLerran* reviewed a separate approval document, issued outside the regular Section 303(d) review process and in response to a specific request to determine whether a state had abandoned a specific TMDL, in which EPA made the explicit conclusion that the state's strategy and task force were "an acceptable alternative to a TMDL." 2015 WL 1188522 at *4. This is materially different than the general statement at issue here, in the context of an Integrated Report. Unlike in *McLerran*, there is no final agency action on whether Ohio has abandoned a TMDL for the open waters of western Lake Erie, and without a final agency action, Count One fails to state a claim.

Plaintiffs raise the possibility of supplementing their complaint with yet a different count, addressing EPA's approval of Ohio's 2018 list, Pl. Combined Memo at 9 n.2, but that would also be futile. *See supra* n.2. In EPA's approval of Ohio's 2018 list, EPA noted Ohio's acknowledgment that TMDLs are required for any assessment units

that are listed as impaired. EPA 2018 Approval at 18. EPA's approval also explains that removing a segment from the Section 303(d) list may be warranted in some cases. For example, a TMDL would not be required if Ohio's efforts "result in the attainment of water quality standards prior to the development of a TMDL." *Id.* However, the substance of EPA's action was, like in 2016, an approval of Ohio's actual Section 303(d) list of impaired waters and its inclusion of a priority ranking of those waters, not an approval of the State's nutrient pollution reduction efforts as an alternative to a TMDL. *Id.* at 20.

Plaintiffs' proposed Count One therefore fails to state a claim, whether Plaintiffs plead Count One as a challenge to EPA's approval of Ohio's 2016 list or as a challenge to EPA's approval of Ohio's 2018 list.

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

Because Plaintiffs' two new proposed claims both fail to state a claim, and because EPA's approval of Ohio's 2016 Section 303(d) list, as amended, mooted Plaintiffs' claim that Ohio failed to list the open waters of western Lake Erie as impaired, there is nothing left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should grant Defendants' cross motion for summary judgment.

Respectfully submitted this 6th day of August 2018.

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CERTIFICATE OF SERVICE

I hereby certify that on August 6, 2018, I electronically filed the foregoing REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
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Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act

July 29, 2005

Watershed Branch
Assessment and Watershed Protection Division
Office of Wetland, Oceans and Watersheds
Office of Water
United States Environmental Protection Agency

This document provides EPA's guidance for preparing the 2006 Integrated Report. The Integrated Report is intended to satisfy the listing requirements of sections 305(b) and 314 of the Clean Water Act (CWA). This guidance document discusses existing requirements of the CWA and EPA's implementing regulations. Those statutory and regulatory provisions contain legally binding requirements. This document describes those requirements; it does not substitute for them. The recommendations in this document are not binding; indeed, there may be other approaches that would be appropriate in particular circumstances. When EPA makes a decision on a state's section 303(d) list, it will make each decision on a case-by-case basis and will be guided by the applicable requirements of the CWA and implementing regulations, taking into account comments and information presented at that time by interested persons regarding the appropriateness of applying these recommendations to the particular situation.

CONTENTS

Section Page

ABBREVIATIONS AND ACRONYMS v

I. INTRODUCTION 6

II REPORTING REQUIREMENTS UNDER THE CLEAN WATER ACT SECTIONS 303(D), 305(B), 314 AND CORRESPONDING REGULATIONS 9

III. RECOMMENDED ORGANIZATION OF AN INTEGRATED REPORT 13
EXECUTIVE SUMMARY 14
PART A. INTRODUCTION 14
PART B. BACKGROUND INFORMATION 14
PART C SURFACE WATER MONITORING AND ASSESSMENT. 17
PART D. GROUND WATER MONITORING AND ASSESSMENT 25
PART E. PUBLIC PARTICIPATION 25

IV. ISSUES CONCERNING THE DEVELOPMENT AND USE OF AN ASSESSMENT METHODOLOGY 29

V. FIVE-PART CATEGORIZATION OF WATERS 46

VI. REPORTING RESULTS 65

GLOSSARY 66

APPENDIX: DATA ELEMENTS FOR 2006 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT AND DOCUMENTATION FOR DEFINING AND LINKING SEGMENTS TO THE NATIONAL HYDROGRAPHY DATASET
. 70

TABLES

Table		Page
2-1	SUMMARY OF STATE REPORTING REQUIREMENTS UNDER CWA SECTIONS 303(D), 305(B) AND 314 AND CORRESPONDING REGULATIONS	11
3-1	ATLAS	15
3-2	SIZE OF SURFACE WATERS ASSIGNED TO REPORTING CATEGORIES	19
3-3	ATTAINMENT RESULTS CALCULATED USING PROBABILISTIC MONITORING DESIGNS	20
3-4	SEGMENT/POLLUTANT COMBINATIONS REMOVED FROM STATE'S YEAR 2004 SECTION 303(D) LIST	21
3-5	TMDL DEVELOPMENT STATUS	21
3-6	INDIVIDUAL DESIGNATED USE SUPPORT SUMMARY	22
3-7	SIZE OF WATERS IMPAIRED BY CAUSES	22
3-8	SIZE OF WATERS IMPAIRED BY SOURCES	23
3-9	TROPHIC STATUS OF SIGNIFICANT PUBLICLY OWNED LAKES	24
3-10	TRENDS IN LAKE WATER QUALITY	24
3-11	SUMMARY OF WATER QUALITY REPORTING ELEMENTS OF AN INTEGRATED REPORT	27
5-1	RECOMMENDED WATER QUALITY INDICATORS FOR GENERAL DESIGNATED USE CATEGORIES	52
5-2	DOCUMENTATION OF "GOOD CAUSE" TO MOVE SEGMENTS FROM CATEGORY 5.	58

FIGURES

Figure		Page
4-1	USING MULTIPLE TYPES OF DATA TO ASSESS ATTAINMENT	45

EXHIBITS

Exhibit		Page
3-1	RECOMMENDED ORGANIZATION FOR YEAR 2006 INTEGRATED REPORT SUBMITTALS	13
5-1	2006 INTEGRATED REPORTING GUIDANCE: SEGMENT CATEGORIZATION GUIDE	48

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ABBREVIATIONS AND ACRONYMS

ADB	Assessment Database
AU	Assessment Unit
CALM	Consolidated Assessment and Listing Methodology
CPP	Continuing Planning Process
CFR	Code of Federal Regulations
CWA	Clean Water Act
DQO	Data Quality Objectives
DU	Designated Use
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
FGDC	Federal Geographic Data Committee
GPRA	Government Performance Report Act
IR	Integrated Report
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NSSP	National Shellfish Sanitation Program
OW	Office of Water
PPG	Performance Partnership Grant
PWS	Public Water Supply
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RIT	Reach Indexing Tool
SDWA	Safe Drinking Water Act
STORET	STORage and RETrieval
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WQC	Water Quality Criteria
WQS	Water Quality Standard

I. INTRODUCTION

The *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* was developed specifically for the 2006 reporting cycle. The objective of this document is to provide to states, territories, authorized tribes, and interstate commissions[1] a recommended reporting format and a suggested content to be used in developing a single document that integrates the reporting requirements of the Clean Water Act (CWA) section 303(d) and section 305(b). This guidance for developing the Integrated Report (IR) supports the Environmental Protection Agency's (EPA) strategy for achieving a broad-scale, national inventory of water quality conditions. Use of the IR format will serve to report on water quality standards (WQS) attainment status of assessed waters, document availability of data and information for each segment, identify trends in water quality conditions, and provide information to managers in setting priorities for future actions to protect and restore the health of our nation's aquatic resources.

EPA has established a goal that all fifty-six states and territories utilize the integrated reporting format by 2008. EPA continues to promote this comprehensive assessment approach in order to enhance the states' ability to track both programmatic and environmental goals of the CWA, and ideally, to increase the pace of achieving these important environmental goals. This document includes recommendations designed to allow states and other interested stakeholders to track the progress of interim management actions by employing the multi-category reporting framework. By issuing this guidance well in advance of the April 1, 2006 deadline for submission of CWA section 303(d) lists and section 305(b) reports, EPA intends to encourage the broadest possible adoption of the integrated reporting approach.

EPA continues to advocate the use of the five-part categorization format for sorting waters (see box below for brief description and Section V). While this document is more comprehensive than previous Integrated Report Guidance, there are clarifications to the previous (2004) Integrated Report Guidance. Specifically, this guidance provides:

- increased emphasis on the use of the Assessment Database (ADB) or compatible electronic data format (the ADB is being modified to accommodate the recent format, content, and multi-category listing option that the guidance suggests),
- greater clarity on the content and the format of those components of the IR that are recommended and required under CWA sections 303(d), 305(b), and 314,
- greater clarity on issues associated with data solicitation, collection, consideration, and interpretation of water quality standards,
- additional information on the option to report water quality status of individual segments in more than one category (e.g., to show that some designated uses of a water are being attained and some designated uses are not),[2] and
- additional clarity and flexibility on undertaking and reporting alternatives to total maximum daily loads (TMDLs) for attaining water quality standards (e.g., utilization of reporting "Category 4b").

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[1] In the remainder of this document, unless specified otherwise, *states* also refers to authorized tribes, territories and interstates commissions.

[2] In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality, although note that states determine their section 303(d) list (i.e., Category 5) consistent with 40 CFR 130.7 (b)(3).

It is important to note that certain components of the recommended format and content for the 2006 IR document are based on requirements of the CWA and EPA's implementing regulations (e.g., the submission of an approvable section 303(d) list), whereas other components are based on Agency recommendations. In section II of this guidance, those components *required* by the CWA sections 303(d), 305(b), 314, and the corresponding regulations are identified.

In addition to identifying the required components in the 2006 IR submission, this guidance will indicate the components of the 2006 IR document for which EPA recommends states provide an opportunity for *public review and comment* (e.g., the list of impaired waters requiring TMDLs and the assessment methodology used by the state to develop their IR document).

Five Reporting Categories

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Integrated Monitoring and Assessment

The Clean Water Act requires states to provide every two years an assessment of the quality of all their waters (section 305(b)) and a list of those that are impaired or threatened (section 303(d)). To efficiently meet this charge, EPA recommends that states, tribes, and other water quality monitoring collaborators use a combination of monitoring and assessment techniques to:

1. increase the percentage and types of waters assessed;
2. reliably estimate the overall condition of all waters within a state; assess changes over time; and measure progress toward the "fishable-swimmable" goal of the Clean Water Act (section 305(b));
3. comprehensively identify all impaired and threatened waters to support section 303(d) listing requirements; and
4. prioritize site-specific assessments needed to confirm the location of both high quality and impaired waters, and support control, restoration, and prevention actions.

EPA has strongly encouraged states to use integrated monitoring and assessment techniques. These include probability-based assessments and other predictive tools, as well as site-specific assessments. The use of probability assessments can eliminate the risk of generating a biased picture of water quality conditions state-wide and provide a cost-effective bench mark of state water quality program effectiveness. The probability-based assessment results can also help a state decide if it should target certain waters for further assessment or if limited resources for water quality assessment could be used more effectively in other ways. States currently using broad-scale probability-based assessment to complement their site-specific assessment include VA, SC, KY, and IN, among others.

V. FIVE-PART CATEGORIZATION OF WATERS

Use of the Integrated Report format and the use of the five-part categorization scheme envisions that each state provides a comprehensive description of the water quality standards attainment status of all segments within a state. In this guidance, the term "segment" is synonymous with the term "assessment unit" (AU) used in previous IR Guidance. Fundamental to this accounting is the use of a consistent and rational segmentation and geo-referencing approach for all segments including rivers, streams, lakes, wetlands, estuaries, and coastal waters. There is no single approach to the development of a segmentation scheme. However, it is important that the selected segmentation approach be consistent with the state's water quality standards and be capable of providing a spatial scale that is adequate to characterize the WQS attainment status of the segment. The IRG provides some recommendations on how states may develop a segmentation scheme for monitoring, assessing and categorizing water quality conditions. Additionally, the IRG provides recommendations for assigning individual segments to the five-category system.

A. Recommendations for Segmenting Waters

EPA recommends that states consider using the National Hydrography Dataset (NHD)[15] coding scheme to georeference their segments, where segments may comprise part of an NHD reach, an individual NHD reach, or a collection of NHD reaches or parts of reaches. Alternatively, if a state has already developed a comparable Geographic Information System (GIS) framework, EPA requests that states provide any relevant information necessary to allow consistent georeferencing. Additionally, this information should be included in the state's ADB submission. States generally partition waters to represent homogeneity in physical, biological or chemical conditions. This segmentation may reflect an *a priori* knowledge of factors such as flow, channel morphology, substrate, riparian condition, adjoining land uses, confluence with other waterbodies, and potential sources of pollutant loadings (both point and nonpoint). While there is no single default dimension for a segment size, states have utilized these or similar principles when they defined the segments used in their water quality standards. Other factors may include the following:

- The expected natural variability of the measured criteria associated with the WQSs.
- The type of water (e.g., a small stream, a wide river, a tidal and stratified estuary, and coastal shoreline).
- Time of travel of a parcel of water in the waterbody or segment or the magnitude of any tidal excursions.
- The amount of and type of data and information necessary to provide a reasonably accurate characterization of the criteria (or core indicators) associated with the designated uses in the segment or waterbody.
- Any expected changes in significant influences in the watershed (land use, point or nonpoint sources of pollutants).
- Any site-specific concerns such as patchy or unique habitat distribution patterns or biological population distributions.

[15] By making this recommendation, EPA is not equating availability of geographical information on a water segment in the NHD with the legal definition of water of the U.S. under CWA.

Using NHD or other comparable GIS framework, a state should assign a discrete "address" or geo-location to each segment, and document the process used for defining water segments in their methodologies. The physical boundaries (beginning and end points) of a segment should be defined in such a manner that a scientifically valid assessment of each and every segment can be made. The individual size of a segment will vary based upon methodologies. Segments should, however, be larger than a sampling station but small enough to represent a relatively homogenous parcel of water (with regard to hydrology, land use influences, point and nonpoint source loadings, etc.).

B. How should segments be assigned to EPA's five reporting categories?

EPA continues to advocate the use of the five category approach for classifying the WQS attainment status for each segment. In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality. A segment is considered impaired when WQS[16] are not being supported and/or met, and is considered threatened when WQS are not expected to be fully supported and/or met in the next listing cycle. In classifying the status of water quality in 2006, states have the option to report each segment in one or more categories. EPA recommends that states use the following five reporting categories to classify segments as meeting or not meeting applicable WQS:

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Exhibit 5-1 provides an example of how to consider designated uses in the categorization process. EPA believes that the placement of segments into the five reporting categories best allows states to document attainment of applicable WQSs, and to develop monitoring strategies that effectively respond to the needs identified in the assessment, while ensuring that the attainment status of each water quality standard applicable to a particular segment is addressed.

[16] Water quality standards include designated use(s), criteria, and the antidegradation policy. Water quality criteria are important elements of water quality standards and attainment of criteria should also be evaluated in making listing decisions (See 40 CFR 130.7 (b)(3)). Failure to meet WQC warrant listing of waters under section 303(d). EPA has not developed guidance at this time on determining attainment status for antidegradation policies. EPA recognizes that such policies, while an important part of WQS, may not lend themselves to "attainment" determinations on a segment specific basis.

Exhibit 5-1. 2006 Integrated Reporting Guidance: Segment Categorization Guide

The following schematic describes a process states might consider using for determining the placement of segments into the Integrated Report (IR) Categories. The process begins with the assessment of the water quality standard attainment status (designated use(s), criteria) of each segment, and concludes with the placement of each segment into one or more of the five IR Categories. The assessment of the water quality standards attainment status should be consistent with the state's assessment and listing methodology and must ensure that segments not meeting or not expected to meet applicable water quality standards are identified. While the schematic focuses on the assessment of designated uses (DU) for each segment, as previously stated all components of the water quality standard are considered in the categorization of a segment.

Step-by-step process to categorize a segment

1. For each segment, assemble and consider all existing and readily available data and/or information to determine the support status for each individual designated use.
2. Based on the data and information available, make support decisions for each DU in the segment and assign the appropriate symbol (✔+, ✔-, ?, T, 4a, 4b, 4c – See *Symbols and Definitions*).
3. Using the results of Step 2, place the segment into the appropriate category or categories.

Symbols and Definitions:

✔+ = The existing data and information shows that a use ***is supported***.

✔- = The existing data and information shows that a use ***is not supported.***

? = There is insufficient existing data and information to make a use support determination, consistent with the state's assessment and listing methodology.

T = A use in this segment is currently being supported, but is **THREATENED** and it is projected not to be supporting by the next scheduled list submission date.

4a = A TMDL to address a specific segment/pollutant combination has been approved or established by EPA.

4b = A use impairment caused by a pollutant is being addressed by the state through other pollution control requirements.

4c = A use is impaired, but the impairment is not caused by a pollutant.

In the following schematic, each box represents one (1) segment. Each segment may contain one or more DUs. After compiling and considering all existing and readily available data and information for each DU in a specific segment, support decisions are made. Placement of the segment into the appropriate category or categories is based on the sufficiency of the data and information, and the analysis of whether the data demonstrates that the DU is supported.

SEGMENT #1 (1 DU) → **ASSESSMENT**

DU1 → ✔+

SEGMENT #2 (2 DUs) → **ASSESSMENT**

DU1, DU2 → T, ✔-

SEGMENT #3 (3 DUs) → **ASSESSMENT**

DU1, DU2, DU3 → ✔+, ✔+, ?

SEGMENT #4 (4 DUs) → **ASSESSMENT**

DU1, DU2, DU3, DU4 → ✔-, 4a, ?, ✔+

SEGMENT CATEGORIZATION

	DU1	DU2	DU3	DU4	Single Category	Multi-Category
SEGMENT 1	✔+				C1	C1
SEGMENT 2	T	✔-			C5	C5
SEGMENT 3	✔+	✔+	?		C2	C2 & C3
SEGMENT 4	✔-	4a	?	✔+	C5	C5, C4a, C3 & C2

Additional examples are provided below to further illustrate the process of segment classification into multiple categories.

	DU1	DU2	DU3	DU4	Single-Category	Multi-Category
SEGMENT A	✔+	✔+	✔+	✔+	C1	C1
SEGMENT B	✔-	✔-	✔-	✔-	C5	C5
SEGMENT C	✔-	✔-	✔-	T	C5	C5
SEGMENT D	?	?	?	?	C3	C3
SEGMENT E	4b	✔-	✔-	✔-	C5	C4b, C5
SEGMENT F	✔+	✔+	✔-	✔-	C5	C2 & C5
SEGMENT G	✔+	✔+	?	?	C2	C2 &C3
SEGMENT H	?	?	?	✔-	C5	C3 & C5
SEGMENT I	✔+	✔+	✔+	4c	C4c	C2, C4c
SEGMENT J	?	?	4c	T	C5	C3, C4c, & C5
SEGMENT K	✔+	?	?	✔-	C5	C2, C3, & C5
SEGMENT L	✔+	✔+	?	T	C5	C2, C3 & C5
SEGMENT M	✔+	?	4b	✔-	C5	C2, C3, C4b & C5

States have the option to place segments into more than one of the five categories when appropriate. The placement of segments into more than one category will allow states to:

1. Demonstrate progress in the efforts to develop TMDLs,
2. Track progress as segments incrementally attain some, but not all water quality standards, and
3. Identify those segments where there is a need to obtain additional data and information for purposes of determining attainment status of some water quality standards.

While EPA recommends that states adopt and utilize the IR format for reporting the status of their water quality in 2006, states may choose to submit separate 303(d) and 305(b) reports. Furthermore, even if a state chooses to use the IR format, it may choose to place each segment into only one category and rely on the reporting capability of ADB to provide detail on the support status of all individual uses. More detailed guidance for determining the appropriate categorization of segments is provided below. It is important to note that states must consider all existing and readily available data and information in developing their section 303(d) lists, and may choose to assess a segment and assign the segment to a category using data and information other than monitored data (e.g., land use, pollutant loading coefficients, remote sensing data, modeling, etc.).

C. May a state use subcategories or additional categories in its Integrated Report?

Yes, in order to refine their classifications, states may choose to establish new or additional subcategories in addition to the proposed five major categories. For example, a state may decide to divide Category 3 into two subcategories in order to distinguish between those segments for which no data and/or information exist from those segments for which some data and/or information exist, but the data are insufficient to make a determination whether the segment is attaining applicable standards. A state may also choose to use subcategories for segments placed into Category 3 when establishing monitoring priorities. For example, the state may place its segments into different subcategories depending on whether the segment is high, medium, or low priority for follow-up monitoring based on information from probability-based monitoring, landscape or water quality models, land use data, or limited site-specific monitoring.

D. Which segments should states include in Category 1?

Segments may be placed into Category 1 if all designated uses are supported, and no use is threatened. When a segment meets the Category 1 requirements, the state has concluded, consistent with their water quality standards (and their assessment methodology) that sufficient data and information exist to determine that ***all applicable water quality standards are being attained,*** thereby making the use of Category 2 unnecessary for this segment, (see Category 2 discussion below). By placing a segment into Category 1, the state is also concluding that there are adequate data and there is sufficient information to make a determination for any water quality standard, making the use of Category 3 unnecessary for this segment (see Category 3 discussion below).

1. *In order to place a segment in Category 1, must states have specific data and information regarding the status of each water quality standard?*[17]

No. States may describe in either their assessment methodology or in their water quality standards a subset or hierarchy of indicators (as described in the CALM guidance and *Elements of a State Water Monitoring and Assessment Program*) that serve to characterize whether conditions in a segment are capable of meeting all applicable water quality standards.

Because limited resources affect the design of water quality monitoring programs, the state should use a tiered approach to monitoring that includes a core set of baseline indicators selected to represent each applicable designated use, plus supplemental indicators selected according to site-specific or project-specific decision criteria. Using this tiered approach, the state should be able to make the best use of its resources to meet water quality decision needs, including assessing water quality standards attainment and designated use support, identifying needed changes to water quality standards, describing causes and sources of impairments, developing water quality-based source controls, and assessing whether water quality standards are attained. Where the assessment of the supplemental indicators applicable to every designated use in a segment documents that all uses are supported and no use is threatened, that segment should be placed into Category 1.

The monitoring strategy should define a core set of indicators (e.g., water quality parameters) for each water resource type that include physical/habitat, chemical/toxicological, and biological/ecological endpoints as appropriate, that reflect designated uses, and that can be used routinely to assess attainment with applicable water quality standards throughout the state. This core set of indicators is monitored to provide Statewide or basin/watershed level information on the fundamental attributes of the aquatic environment and to assess water quality standards attainment/impairment status. Previously, chemical and physical indicators were emphasized; however, biological monitoring and assessment should assume a prominent role in state monitoring as well.

The monitoring strategy should also describe the process the state uses for identifying supplemental indicators to monitor. Supplemental indicators are often key to identifying causes and sources of impairments and targeting appropriate source controls. These supplemental indicators may include each water quality criteria in the state's water quality standards, any pollutants controlled by the National Pollutant Discharge Elimination System (NPDES), and any other constituents or indicators of concern.

Table 5-1 presents examples of recommended core and supplemental water quality indicators. The Consolidated Assessment and Listing Methodology provides additional information on considerations for selection of supplemental indicators (see http://www.epa.gov/owow/monitoring/calm.html, Chapter 10).

[17] Part D(1) of Section V has been adapted from Section II (Part D) of *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

Table 5-1. Recommended Water Quality Indicators for General Designated Use Categories

	Aquatic Life & Wildlife	Recreation	Drinking Water	Fish/Shellfish Consumption
Recommended Core Indicators	*Condition of biological communities (EPA recommends the use of at least two assemblages) *Dissolved oxygen *Temperature *Conductivity *pH *Habitat assessment *Flow *Nutrients *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Eutrophic condition Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Pathogen indicators (E. coli, enterococci) *Nuisance plant Growth *Flow *Nutrients *Chlorophyll *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Secchi depth Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Trace metals *Pathogens *Nitrates *Salinity *Sediments/TDS *Flow *Landscape conditions (e.g., % cover of land uses)	*Pathogens *Mercury *Chlordane *DDT *PCBs *Landscape conditions (e.g., % cover of land uses)
Supplemental Indicators	*Ambient toxicity *Sediment toxicity *Other chemicals of concern in water column or sediment *Health of organisms	*Other chemicals of concern in water column or sediment *Hazardous chemicals *Aesthetics	*Volatile organic compounds (VOCs) (in reservoirs) *Hydrophyllic pesticides *Nutrients *Other chemicals of concern in water column or sediment *Algae	*Other chemicals of concern in water column or sediment

Source: *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

2. Should states use biosurvey data to list a segment as in attainment for aquatic life use support?

EPA encourages the use of biosurvey data in concert with other specified and supplemental indicators for making an aquatic life use attainment determination. Properly developed biosurvey data can provide direct evidence of aquatic life use support. States may develop, consistent with their assessment methodology and water quality standards, their own bioassessment approach to assessing aquatic life use support. CALM and the 2003 *Elements of a State Water Monitoring and Assessment Program,* recommend the use of at least two assemblages (e.g., fish and macroinvertebrates) in such assessments (See Table 5-1 taken from *Elements of a State Water Monitoring and Assessment Program*).

3. What data should states have to determine that a segment is meeting a "fish consumption" use?

Assessment determinations regarding fish/shellfish consumption uses should be based on parameter-specific data for two groups of pollutants: (1) human pathogens, or indicators thereof, and (2) chemicals with high bioaccumulation potential. Among the bioaccumulative pollutants, EPA recommends mercury, chlordane, Dichloro-diphenyl-trichloroethane (DDT), and polychlorinated biphenyls (PCBs) as core indicators.

E. Which segments should states include in Category 2?

Segments should be placed in Category 2 if the state determines that available data and/or information indicate that some, but not all of the designated uses are supported. If the state has chosen to use the multi-category approach, segments reported in Category 2 may also be reported in Categories 3, 4, or 5 depending upon the results of the analysis of all available data and information on the other uses in the segment. However, if a single-category approach is used, Category 5 takes precedence over all other categories.

F. Which segments should states include in Category 3?

Segments should be placed in Category 3 when there is insufficient available data and/or information to make a use support determination. Category 3 is consistent with and responds to one of the recommendations in the National Research Council's (NRC) report, Assessing the TMDL Approach to Water Quality Management (2001), in which the authors suggested that a category be created for those segments where there existed insufficient data and/or information to assess the use. The state should identify those segments that are higher and lower priority for followup monitoring, and may do so using predicative tools such as probability surveys or landscape models. Category 3 provides states with the flexibility to monitor these segments in a manner consistent with their overall monitoring strategy and schedule.

G. Which segments should states include in Category 4?

Segments may be placed in Category 4 if available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed. States may place segments that meet this definition in one of the following three subcategories:

- a state developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination (Category 4a);

- other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time (Category 4b);
- the non-attainment of any applicable water quality standard for the segment is the result of pollution and is not caused by a pollutant (Category 4c).

1. Which segments should states include in Category 4a?

Segments should be placed in Category 4a when a TMDL to address a specific segment/pollutant combination has been approved or established by EPA. Once the TMDL has been approved or established, the state should implement the TMDL as soon as practicable. Additionally, EPA encourages states to provide monitoring schedules for these segments to ensure that sufficient data and information are obtained to document progress of the implementation actions towards meeting the applicable water quality standards. Segments in this category may also be included in other categories, as appropriate (See Exhibit 5-1).

2. Which segments should states include in Category 4b?

EPA regulations recognize that alternative pollution control requirements may obviate the need for a TMDL. Segments are not required to be included on the section 303(d) list if technology-based effluent limitations required by the Act, more stringent effluent limitations required by state, local, or federal authority, or "[o]ther pollution control requirements (e.g., best management practices) required by local, State or Federal authority" are stringent enough to implement applicable water quality standards (see 40 CFR 130.7(b)(1)) within a reasonable period of time. This guidance acknowledges that the most effective method for achieving water quality standards for some water quality impaired segments may be through controls developed and implemented without TMDLs (referred to as a "4b alternative"). The discussion below focuses on the use of "other pollution control requirements" as a basis for the conclusion that a segment does not need a TMDL.

a. What demonstration does EPA expect a state to make to support a successful Category 4b proposal?

EPA will evaluate on a case-by-case basis a state's decisions to exclude certain segment/pollutant combinations from Category 5 (the section 303(d) list) based on the 4b alternative. States should provide in their submission the rationale which supports their conclusion that there are "other pollution control requirements" sufficiently stringent to achieve applicable water quality standards within a reasonable period of time.

Specifically, this rationale should include: (1) a statement of the problem causing the impairment, (2) a description of the proposed implementation strategy and supporting pollution controls necessary to achieve water quality standards, including the identification of point and nonpoint source loadings that when implemented assure the attainment of all applicable water quality standards, (3) an estimate or projection of the time when water quality standards will be met, (4) a reasonable schedule for implementing the necessary pollution controls, (5) a description of, and schedule for, monitoring milestones for tracking and reporting progress to EPA on the implementation of the pollution controls, and (6) a commitment to revise as necessary the implementation strategy and corresponding pollution controls if progress towards meeting water quality standards is not being shown. EPA acknowledges that the level of rigor necessary to support the state's rationale will vary depending on the complexity of the

water impairments and corresponding implementation strategies. Note that a state could pursue water quality trading under 4b, so long as it follows the principles described in the Agency's relevant guidance.

If the Agency determines that the controls are not, in fact, "requirements," or that they will not result in attainment of applicable water quality standards within a reasonable time, then EPA may disapprove the state's failure to include the segment at issue on the section 303(d) list (i.e., Category 5) and add the segment to the list. In subsequent list submissions, EPA may determine that a segment that has been placed into Category 4b must go back into Category 5, if the circumstances have changed such that the state can no longer support its original 4b demonstration.

b. What constitutes acceptable "pollution control requirements" to support Category 4b alternatives?

Because of the case-specific nature of water quality impairments and controls designed to address such impairments, EPA cannot identify classes of controls that will always be adequate to support a conclusion that a segment is not required to be included in Category 5. In evaluating whether a particular set of pollution controls are in fact "requirements" as specified in EPA's regulation, the Agency will consider a number of factors including: (1) authority (local, state, federal) under which the controls are required and will be implemented with respect to sources contributing to the water quality impairment (examples may include: self-executing state or local regulations, permits, and contracts and grant/funding agreements that require implementation of necessary controls), (2) existing commitments made by the sources to implementation of the controls (including an analysis of the amount of actual implementation that has already occurred), (3) the availability of dedicated funding for the implementation of the controls, and (4) other relevant factors as determined by EPA depending on case-specific circumstances.

Since the overriding objective of the 4b alternative is to promote implementation activities designed to achieve water quality standards in a reasonable period of time, for all of the factors listed above, EPA will evaluate each 4b alternative on a case-by-case basis, including in particular the existence of identifiable consequences for the failure to implement the proposed pollution controls. Depending on the specific situation, "other pollution control requirements" may be requirements other than those based on statutory or regulatory provisions, as long as some combination of the factors listed above are present and will lead to achievement of WQSs within a reasonable period of time. For example, established plans of government agencies that require for attainment of WQS with a reasonable period of time may qualify even when their components include incentive-based actions by private parties. States may also choose to rely on controls that have already been implemented where there is sufficient certainty that implementation will continue until WQS are achieved and will not be reversed. Because the controls are already in place and achieving progress, EPA may consider such controls to be requirements even if their implementation did not occur pursuant to binding legal authority.

c. What constitutes a reasonable period of time for purposes of 4b?

EPA expects that segments impaired by a pollutant but not listed under section 303(d) based on the implementation of existing control requirements will attain WQSs within a reasonable period of time. What constitutes a "reasonable time" will vary depending on factors such as the initial severity of the impairment, the cause of the impairment (e.g., point source discharges, in place sediment fluxes, atmospheric deposition, nonpoint source runoff), riparian condition, channel condition, the nature and behavior of the specific pollutant (e.g., conservative, reactive), the size and complexity of the segment (a

simple first-order stream, a large thermally-stratified lake, a density-stratified estuary, and tidally-influenced coastal segment), the nature of the control action, cost, public interest, etc. States should consider such factors and provide, as stated in Section IV.G.2.A. above, a time estimate by which the controls will result in WQS attainment, including an explanation of the basis for their conclusion. EPA will evaluate on a case-specific basis whether the estimated time for WQS attainment is reasonable.

d. What are some examples to illustrate how the preceding guidance would be applied?

EPA will evaluate on a case-specific basis each set of controls a state uses to support a decision to include a segment in Category 4b. The following circumstances are examples of controls which may be sufficient to support such a decision, depending on the facts of the specific case:

- A waterbody is impaired solely by point sources. Each point source has an NPDES permit containing limits sufficient to implement WQS in that waterbody by the end of the permit terms.
- A waterbody is impaired by nonpoint source sediment input. The state has adopted regulations requiring sources to implement certain best management practices (BMPs), and can enforce the regulatory requirements under state law. The state demonstrates that implementation of BMPs by these sources will result in meeting WQS in the waterbody in a reasonable time.
- A waterbody is impaired by nonpoint sources and the state has entered into contracts for source remediation. Implementation of the contract terms will result in attainment of WQS in the waterbody in a reasonable time. While the state cannot obtain specific performance as a contract remedy, it can file a claim for significant monetary damages if the terms are not met.
- A waterbody is impaired by nonpoint sources which have already implemented some or all of certain measures that will result in attainment of WQS in that waterbody in a reasonable time. The controls are unlikely to be removed or reversed (e.g., watershed restoration measures pursuant to 319 grant).
- A waterbody is impaired by nonpoint sources within federal lands where a forest management plan has been developed and is being implemented. In this case, certain elements are included in the forest management plan emphasizing BMP certification programs, require adaptive adjustments of practices, and specify monitoring options needed to demonstrate compliance with state water quality standards.

3. Which segments should states include in Category 4c?

Segments should be placed in Category 4c when the states demonstrates that the failure to meet an applicable water quality standard is not caused by a pollutant, but instead is caused by other types of pollution. Segments placed in Category 4c do not require the development of a TMDL. Pollution, as defined by the CWA is "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water" (section 502(19)). In some cases, the pollution is caused by the presence of a pollutant and a TMDL is required. In other cases, pollution does not result from a pollutant and a TMDL is not required. States should schedule these segments for monitoring to confirm that there continues to be no pollutant associated with the failure to meet the water quality standard and to support water quality management actions necessary to address the cause(s) of the impairment. Examples of circumstances where an impaired segment may be placed in Category 4c include segments impaired solely due to lack of adequate flow or to stream channelization.

EPA encourages the state to collect or assemble additional data and/or information to verify the initial placement of the segment, and to re-categorize the segment based on the assessment of the additional data and/or information where appropriate.

H. Which segments should states include in Category 5?

This category constitutes the section 303(d) list that EPA will review and approve or disapprove pursuant to 40 CFR 130.7. States must include on their section 303(d) list those waters required to be listed by the Clean Water Act and EPA's implementing regulations. Segments must be placed in Category 5 when, based on existing and readily available data and/or information, technology-based effluent limitations required by the Act, more stringent effluent limitations, and other pollution control requirements are not sufficient to implement an applicable water quality standard and a TMDL is needed. 40 CFR 130.7(b)(1).

A segment that is included in Category 5 may also be included in other categories where appropriate. For example, the segment may be attaining some applicable standards, in which case it may also be included in Category 2. As the state develops and EPA approves TMDLs for the pollutants identified as causing a Category 5 segment to exceed an applicable standard, the segment can be placed in Category 4a, but must also remain in Category 5 if it is exceeding any applicable standard and a TMDL needs to be developed for the pollutant causing that exceedance. However, note that Category 5 takes precedence if the state chooses to list a segment in only one category.

1. Is Category 5 of the Integrated Report for 2006 a new section 303(d) list, and must the state account for all segments previously listed as needing a TMDL in the 2004 list?

The section 303(d) list (segments in Category 5) once approved (or, if necessary, established by EPA following disapproval of a state's list) is a new list that replaces the previous list. The time frame for establishing TMDLs should be 8 to 13 years from the date of the original listing. For example, a segment originally included on the 1998 section 303(d) list, and still identified on the 2006 submission as requiring a TMDL, should be addressed by 2011.

Segments included on previous 303(d) lists or previously placed in Category 5 should be accounted for in subsequent submissions. However, the fact that a segment was previously included in Category 5 (or on the 303(d) list) does not necessarily mean that it must remain in Category 5 until a TMDL is established. In some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the applicable standard is met). Alternatively, the state may determine that other required control measures are sufficient to implement the applicable standard, and therefore may move the segment to Category 4b. The state may also determine based on the assessment of new data and information that pollutants do not cause or contribute to the impairment of the segment and therefore may move the segment to Category 4c. The state may also demonstrate that the original Category 5 listing was erroneous (i.e., not consistent with its assessment methodology or WQSs).

EPA may request, as discussed below, that the state demonstrate good cause for not including individual segments (including previously listed segments) in Category 5 (40 CFR 130.7(b)(6)(iv)). EPA may request this demonstration if the state does not develop an adequate record supporting the basis for

the decision or does not specifically explain its decision to move segments previously listed in Category 5 to other categories.

2. *What constitutes good cause for not including in the current submission segments that were previously included in Category 5 (the section 303(d) List)?*

To provide interested stakeholders with a more complete understanding of the changes that may have occurred from one IR cycle (or 303(d) submission) to the next, and to help expedite EPA's review and approval/disapproval action for those segments in Category 5, EPA recommends that states submit with their IR (or their 303(d) list) a table documenting changes in segment placement or categorization from the 2004 IR, and a brief summary of the basis for those changes. Table 5-2 provides an example of how states might do this.

Table 5-2. Documentation of "Good Cause" to Move Segments from Category 5.

Segment previously in Category 5	New placement in 2006	Explanation for change
Segment 214	Category 4a	TMDL completed and approved by EPA for Chromium.
Segment 266	Category 4c	The analysis of new data concluded that the aquatic life use impairment is solely due to low river flow.
Segment 321	Category 4b	The state has proposed an alternative approach to attain WQS by implementing required controls via NPDES permits.
Segment 349	Category 1	The assessment of new data documents that applicable WQS are now being attained.
Segment 350	Category 3	Previous listing in Category 5 was inconsistent with assessment methodology. Available data insufficient to determine attainment status.

In addition, EPA may request that states provide "good cause" for not including on the 2006 section 303(d) list (Category 5) submission segments that were previously included on the list. If EPA makes such a request, the state must explain its basis for not including the segment on the list. Consistent with 40 CFR 130.7(b), "good cause" for not including segments in Category 5 may be based on the following determinations:

- The assessment and interpretation of more recent or more accurate data in the record demonstrate that the applicable WQS(s) is being met.
- The results of more sophisticated water quality modeling demonstrate that the applicable WQS(s) is being met.
- Flaws in the original analysis of data and information led to the segment being incorrectly listed.
- A demonstration pursuant to 40 CFR 130.7(b)(1)(ii) that there are effluent limitations required by state or local authorities that are more stringent than technology-based effluent limitations, required by the CWA, and that these more stringent effluent limitations will result in the attainment of WQSs for the pollutant causing the impairment.

- A demonstration pursuant to 40 CFR 130.7(b)(1)(iii) that there are other pollution control requirements required by state, local, or federal authority that will result in attainment of WQSs for a specific pollutant(s) within a reasonable time (i.e., 4b).
- Documentation that the state included on a previous section 303(d) list an impaired segment that was not required to be listed by EPA regulations, e.g., segments where there is no pollutant associated with the impairment.
- Approval or establishment by EPA of a TMDL since the last section 303(d) list.
- A state inappropriately listed a segment that is within Indian country, as defined in 18 U.S.C. section 1151.
- Other relevant information that supports the decision not to include the segment on the section 303(d) list.

EPA has the authority to disapprove a submission if EPA identifies existing and readily available information that shows a segment is required by the CWA and EPA regulations be included in Category 5 (the section 303(d) list). In that situation, EPA will partially disapprove the state's list and identify additional segments for inclusion in Category 5.

3. Can previously listed segments (without new data or information) be delisted solely because they have not yet been assessed with a new methodology?

No. EPA does not believe it would be appropriate to remove segments previously listed in Category 5 (without new data or information) ***solely*** because they have not yet been assessed with a new methodology. However, there are some situations where a segment may be removed from Category 5 without relying on data and information collected after the date of the previous list. For example, if the state evaluates the pre-existing data and information using a new or revised methodology that accurately reflect the applicable WQS, and the results of that evaluation provide a "good cause" basis for not including the segment on the 2006 section 303(d) list, the segment would no longer need to be included in Category 5. However, the delisting should only occur if it is determined that the basis for the decision is consistent with the state's applicable WQSs and is reasonable.

4. Must Category 5 include threatened segments?

Yes, states must include threatened segments in Category 5 where appropriate (40 CFR 130.7(b)). The definition of "water quality limited segment" in EPA's regulations implementing CWA section 303(d) includes waters not expected to meet applicable water quality standards, which EPA refers to as "threatened" waters. 40 CFR 130.2(j). EPA recommends that states consider as threatened those segments that are currently attaining WQS, but are projected as the result of applying a valid statistical methodology to exceed WQS by the next listing cycle (every two years). For example, segments should be listed if the analysis of existing data and information demonstrates a declining trend in the segment's WQS, and the projected trend will result in a failure to meet that standard by the date of the next list (i.e., 2008 for purposes of the 2006 assessment cycle). The state assessment and listing methodology should describe how the state identifies threatened segments.

5. *Must Category 5 include an impaired segment if the specific pollutant causing the impairment has not been identified?*

Yes, if a designated use is not supported and the segment is impaired or threatened, the fact that the specific pollutant is not known does not provide a basis for excluding the segment from Category 5. These segments must be listed unless the state can demonstrate that no pollutant(s) causes or contribute to the impairment. Prior to establishing a TMDL for such segments the pollutant causing the impairment must be identified.

If the assessment of the new data and information demonstrates that the use impairment is not associated with a pollutant and is attributable only to other types of pollution (e.g., flow or habitat alteration) the segment may be placed into Category 4c. EPA has developed guidance to assist states in identifying the causes of a biological impairment. This document, "Stressor Identification Guidance," was released in December 2000 (EPA 822-B-00-025). This document is also available on the Internet at: http://www.epa.gov/ost/waterscience/biocriteria/stressors/stressorid.pdf.

6. *When should Category 5 include segments covered by fish and shellfish consumption advisories?*

EPA generally believes that fish and shellfish consumption advisories and certain shellfish growing area classifications based on segment specific information demonstrate impairment of CWA section 101(a) "fishable" uses. This applies to fish and shellfish consumption advisories and certain shellfish area classifications for all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. Furthermore, advisories based on the results from probability surveys or other predictive tools having a high degree of confidence (i.e., 95%) may also form the basis of listing segments as impaired. States, on their own prerogative, may choose to place segments into Category 5 (or on the section 303(d) list) using probability surveys when fish and shellfish consumption advisories and certain shellfish area classifications constitute potential risks to human health.

For purposes of determining whether a segment is impaired and should be included on section 303(d) lists states are required to consider all existing and readily available data and information (see 40 CFR 130.7). This should include physical, chemical and biological data, including data on pathogens (such as bacteria and phytotoxins) as well as fish and shellfish tissue concentration data, where such data are existing and readily available. States collect several types of monitoring data to help determine if segments are attaining or maintaining applicable water quality standards. If a state does not consider particular existing and readily available data and information in deciding which segments are impaired and must be placed on the section 303(d) list, they must provide an explanation to EPA of why they did not use such data and information.

While numeric human health criteria for ambient water column concentrations of pollutants are a basis for determining impairment, the attainment of such criteria does not always mean that designated uses are being protected. Segment-specific factors sometimes cause pollutants, including pathogens, to accumulate in fish and shellfish tissue at higher levels than predicted by the methodology used to derive the numeric human health criteria. Examples of such factors include water temperature, nutrient levels, food web structure, the concentration of dissolved organic carbon in the ambient water, and accumulations in the sediment. Hence, a segment can be meeting numeric ambient water quality criteria, but not attaining the designated uses because fish or shellfish tissue concentrations exceed levels that are protective of human health. In instances where tissue concentrations indicate an impairment of the

designated use, even though ambient water column concentrations of pollutants do not indicate an exceedance, EPA recommends states translate the applicable narrative criteria on a site- specific basis or adopt site specific numeric criteria to account for higher than expected exposures from contaminated fish or shellfish tissue and protect designated uses.

Applicable shellfish growing area classifications should be used as part of determinations of attainment of water quality standards and listing of impaired segments. Shellfish growing area classifications are developed by the National Shellfish Sanitation Program (NSSP) using water column and tissue data (where available), and information from sanitary surveys of the contributing watershed, to protect public health. The states review these NSSP classifications every three years. There are certain NSSP classifications and data that do not necessarily indicate WQS violation. These include: "Prohibited" classifications set as a precautionary measure due to the proximity of wastewater treatment discharges, or absence of a required sanitary survey; shellfish tissue pathogen data (which can fluctuate based on short-term conditions not representative of general water quality); or short-term actions to place growing areas in the closed status.

When deciding whether to identify a segment as impaired, states need to determine whether there are impairments of designated uses and narrative criteria, as well as the numeric criteria. Although the CWA does not explicitly direct the use of fish and shellfish consumption advisories or NSSP classifications to determine attainment of water quality standards, states are required to consider all existing and readily available data and information to identify impaired segments on their section 303(d) lists. For purposes of determining whether a segment is impaired and should be included on a section 303(d) list, EPA considers a fish or shellfish consumption advisory, a NSSP classification, and the supporting data, to be existing and readily available data and information that demonstrates non-attainment of a section 101(a) "fishable" use when:

- the advisory is based on fish and shellfish tissue data,
- a lower than "Approved" NSSP classification is based on water column and shellfish tissue data (and this is not a precautionary "Prohibited" classification or the state water quality standard does not identify lower than "Approved" as attainment of the standard),
- the data are collected from the specific segment in question, and
- the risk assessment parameters (e.g., toxicity, risk level, exposure duration and consumption rate) of the advisory or classification are cumulatively equal to or less protective than those in the state's water quality standards.

This applies to all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. However, for fish/shellfish advisories for "dioxin and dioxin-like compounds", due to unique risk characterization issues, listing decisions should be made on a case-by-case basis.

EPA acknowledges that in some cases, fish and shellfish consumption advisories may not demonstrate that a section 101(a) "fishable" use is not being attained in an individual segment. For example, a state may have issued a statewide or regional warning regarding fish tissue contaminated with a bioaccumulative pollutant, based on data from a subset of segments. A state may use a higher fish consumption value in determining the need for an advisory compared to the value used in establishing water quality criteria for the protection of human health. As noted above, a state may also classify shellfish growing areas "Prohibited" as a precautionary measure due to the proximity of wastewater treatment discharges or where a required sanitary survey has not been conducted. In such instances, these

segments need not be listed as impaired under section 303(d) unless there are segment specific data (and the data were not considered during the development or review of a non-precautionary NSSP classification), showing non-attainment of section 101(a) uses.

Some fish and shellfish consumption advisories and NSSP classifications are based on Food and Drug Administration (FDA) action levels as opposed to EPA's risk-based methodology for the protection of human health. FDA action levels are established to protect consumers of interstate shipped, commercially marketed fish and shellfish rather than fish and shellfish caught and consumed within the state. FDA action levels also include non-risk based factors (e.g., economic impacts) in their derivation, while water quality criteria must protect the designated uses without regard to economic impacts.

Where tissue contamination that triggers an advisory based on FDA action levels indicates an exceedance of state human health criteria, the advisory is an indication that section 101(a) "fishable" uses are not attained, and therefore, these segments should be placed into Category 5 or included on the 303(d) list.

7. How should Category 5 handle segments for which WQS are being revised or where temporary variances are in place?

The attainment decision must be based on the applicable WQS. In the case of a standard that is being revised, that standard is not applicable until it has been approved by EPA. 40 CFR 131.21. Therefore states must include in Category 5 segments that do not meet an applicable WQS at the time of listing, even if the new standard is in the process of being revised to be less stringent, until such time as EPA approves the revised standard. However, these segments would not have to be considered a high priority for TMDL scheduling. If EPA approves a revised standard in the future, the segment may be removed from the section 303(d) list at that time provided the segment does not meet the listing requirements with respect to the new standard. With respect to variances, which are temporary and usually apply to a particular discharger, but may also apply to a segment, the applicable WQS typically is the underlying standard, and therefore the segment should be placed in Category 5 if it does not support one or more of the designated uses in the underlying standard.

8. Must Category 5 include a segment where the criterion has been exceeded, but the exceedance is the result of background or natural conditions?

In some cases, a segment may exhibit water quality characteristics or chemical concentrations approaching or exceeding those levels established in the state's water quality standards due solely to non-anthropogenic causes. If the state's water quality standards include a specific exclusion for exceedances caused by "natural conditions", these segments would not be considered impaired (i.e., they could be excluded from Categories 4 and 5). These segments should instead be placed into Categories 1 through 3 as appropriate. For such segments, these background or natural conditions can be defined by assessing the results of water quality monitoring efforts, by the use of predictive models, or a characterization based on data from a watershed with similar hydrologic, land use, and pollutant loading characteristics.

9. What additional information is needed for segments in Category 5?

Identification of Pollutants

Section 130.7(b)(4) requires states to identify, for each segment included on the section 303(d) list (Category 5), the "pollutants causing or expected to cause violations of the applicable water quality standards." For the 2006 listing cycle, segments identified as impaired or threatened based on biological criteria should be included in Category 5 unless the state demonstrates that a pollutant is not causing the impairment, or inclusion in Categories 4a or 4b is warranted. States must identify all pollutants that are known to be causing the impairment of a segment.

Prioritization and TMDL Schedule

Section 303(d)(1) requires states to "establish a priority ranking" for the segments it identifies on the list, taking into account the severity of the pollution and the uses to be made of such segments, and to establish TMDLs "in accordance with the priority ranking." Consistent with section 130.7(b)(4) each state shall also submit biennially a priority ranking including waters targeted for TMDL development in the next two years. Each listed pollutant-segment combination (i.e., those in Category 5) must receive a clear priority ranking, which EPA recommends be either in the form of a scheduled TMDL completion date or a ranking such as high, medium, or low. States have considerable flexibility in deciding how best to apply these factors in prioritizing their list of waters needing TMDLs. For example, a waterbody with a severe water quality problem may be given a high priority for TMDL development in light of the severity of the concern. Conversely, a severe water quality problem may require complex analysis before developing a TMDL, and the state may therefore choose to give it a lower priority to allow time to collect necessary information and complete the analysis. Thus, the most severe water quality problems or the most toxic pollutants need not always be given the highest priority for TMDL development, if circumstances warrant a lower priority. EPA will review the priority ranking but will not take action to approve or disapprove it.

Federal regulations provide that "schedules for submissions of TMDLs shall be determined by the Regional Administrator and the State" (40 CFR 130.7(d)(1)). Factors such as the state's use of a rotating basin approach or commitments specified in court orders or consent decrees may be considered when states develop priorities and schedules. EPA recommends that states develop a schedule for establishing TMDLs as expeditiously as practicable and that the schedule (1) identifies which TMDLs will be established in each year of the upcoming integrated reporting cycle and (2) estimates the approximate number of TMDLs to be established for each year thereafter. EPA encourages the states to ensure that the schedule provides that all TMDLs for every pollutant-segment combination listed on previous section 303(d) lists be established in a time frame that is no longer than 8 to 13 years from the time the pollutant-segment combination is first identified in Category 5. EPA will not take any action on the schedule. The schedule is intended to help the public and EPA to understand the state's priorities and assist in work planning.

In developing their schedules, states will need to decide which TMDLs are higher priority than others. States need not specifically identify each TMDL as high, medium or low priority. Instead, the schedule itself can reflect the state's priority ranking. The CWA does not prescribe a particular method of expressing a priority ranking, and EPA believes a TMDL schedule is a reasonable, efficient way to demonstrate priority ranking. In some circumstances, the order in which TMDLs are established might be

subject to some modifications as the schedule is implemented, based on logistical efficiencies or data availability.

Ohio Environmental Protection Agency

Ohio 2018 Integrated Water Quality Monitoring and Assessment Report

Lake Erie

Division of Surface Water
Final Report

June 2018

Table of Contents

Section A: An Overview of Water Quality in Ohio A-1

Section B: Ohio's Water Resources
B1: Facts and Figures B-1
B2: 2020 Water Quality Goals B-8

Section C: Managing Water Quality
C1: Program Summary – Surface Water C-1
C2: Program Summary – Environmental and Financial Assistance C-19
C3: Program Summary – Drinking and Ground Waters C-20
C4: Program Summary – Environmental Services C-23
C5: Cooperation among State Agencies and Departments C-23
C6: Funding Sources for Pollution Controls C-24
C7: New 303(d) Vision Implementation in Ohio C-28

Section D: Framework for Reporting and Evaluation
D1: Assessment Units D-2
D2: Evaluation of the Ohio River D-6
D3: Evaluation of Lake Erie D-6
D4: Ohio's Water Quality Standards and Use Designations D-7
D5: Sources of Existing and Readily Available Data D-8
D6: Public Involvement in Compiling Ohio's Section 303(d) List of Impaired Waters D-12
D6.1: Solicitation for External Water Quality Data, 2018 Integrated Report Project (May 23, 2017) D-12
D6.1.1: Web Page with Instructions for Submitting Level 3 Credible Data D-13
D6.2: Web Page Announcing 2018 Integrated Report Preparation D-17
D6.3: Notice of Availability and Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-18
D6.3.1: Response to Comments Received regarding the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-19
D6.3.2: Comments Received during the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-36

Section E: Evaluating Beneficial Use: Human Health (Fish Contaminants)
E1: Background E-1
E2: Rationale and Evaluation Method E-1
E3: Results E-6
E4: Supplemental Information E-25
E4.1: Calculation of Fish Concentrations from Water Quality Standards Inputs E-25
E4.2: What's the difference between the Fish Consumption Advisory decision and the impairment decision? E-29

Section F: Evaluating Beneficial Use: Recreation
F1: Background (Bacteria) F-1
F2: Evaluation Method (Bacteria) F-2
F3: Results (Bacteria) F-8
F3.1: Lake Erie Public Beaches F-8
F3.2: Rivers and Streams F-17
F3.3: Inland Lakes F-22
F4: Recreation Assessment for Algae in Western Lake Erie F-27
F4.1: Background F-27
F4.2: Rationale and Evaluation Method F-27

F4.3: Results F-36

Section G: Evaluating Beneficial Use: Aquatic Life
G1: Background and Rationale G-1
G1.1: Background G-1
G1.2: General Determination of Attainment Status G-2
G2: Evaluation Method G-3
G2.1: Rivers and Streams: Large River Assessment Units (LRAUs) G-3
G2.2: Rivers and Streams: Watershed Assessment Units (WAUs) G-3
G2.3: Lake Erie Shoreline and Islands: Lake Erie Assessment Units (LEAUs) G-6
G3: Results G-7
G3.1: LRAUs G-8
G3.2: WAUs G-10
G3.3: LEAUs G-14

Section H: Evaluating Beneficial Use: Public Drinking Water Supply
H1: Background H-1
H2: Evaluation Method H-1
H2.1 Beneficial Use Designation H-1
H2.2 Water Quality Standards H-3
H2.3 Attainment Determination H-4
H2.4 Data Sources and Requirements H-5
H2.5 Ohio River Assessments H-6
H3: Results H-6
H4: Supplemental Information H-8

Section I: Considerations for Future Lists
I1: Wetlands I-1
I1.1 Documented High-Quality Wetlands I-2
I1.2 Significant Wetland Areas I-2
I1.3 Next Steps I-3
I2: Mercury Reduction at Ohio EPA I-11
I2.1: Ohio Law I-11
I2.2: Ohio Projects I-11
I2.3: Ohio Resources I-12
I2.4: Federal Rules I-12
I3: Inland Lakes and Reservoirs I-12
I3.1: Background of Ohio's Inland Lake Water Quality Monitoring Program I-13
I3.2: Status of Inland Lakes Program I-13
I3.2.1: Lake sampling – Lake Habitat Aquatic Life Use Assessment I-14
I3.2.2: Water Quality Standards for the Protection of Aquatic Life in Lakes I-14
I3.3: Preview of Future Listings I-15
I3.3.1: Methodology Preview: Lake Habitat Use Assessment I-16
I3.3.2: Results I-16
I4: Future Lake Erie Monitoring and Assessment I-19

Section J: Addressing Waters Not Meeting Water Quality Goals
J1: Ohio's 303(d) Listing Framework J-1
J2: Prioritizing the Impaired Waters: the 303(d) List J-3
J3: Addressing Nutrients in Lake Erie J-10
J4: Summary of Results J-16
J5: Changes for the 2018 303(d) List J-20
J6: Schedule for TMDL Work J-26
J6.1: Ohio TMDL Status J-26

J6.2: Long-Term Schedules for Monitoring and TMDLs J-26
J6.3: Short-Term Schedule for TMDL Development J-26

Section K: Maps
Ohio 8-Digit Hydrologic Units
Section 303(d) Human Health (Fish Tissue) Use Categories Watershed Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Large River Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Lake Erie Assessment Units
Section 303(d) Recreation Use Categories Watershed Assessment Units
Recreation Use Index Scores Watershed Assessment Units
Section 303(d) Recreation Use Categories Large River Assessment Units
Recreation Use Index Scores Large River Assessment Units
Section 303(d) Recreation Use Categories Lake Erie Assessment Units
Section 303(d) Aquatic Life Use Categories Watershed Assessment Units
Aquatic Life Use Index Scores Watershed Assessment Units
Section 303(d) Aquatic Life Use Categories Large River Assessment Units
Aquatic Life Use Index Scores Large River Assessment Units
Section 303(d) Aquatic Life Use Categories Lake Erie Assessment Units
Aquatic Life Use Index Scores Lake Erie Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Watershed Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Large River Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Lake Erie Assessment Units
Ohio Total Maximum Daily Load Program Progress

Section L: Summary Tables of Waterbody Conditions; List of Prioritized Impaired Waters; and Category 4B Demonstrations
L1: Status of Watershed Assessment Units L-2
L2: Status of Large River Assessment Units L-42
L3: Status of Lake Erie Assessment Units L-43
L4: Section 303(d) List of Prioritized Impaired Waters (Category 5) L-44
L5: Category 4B Demonstrations Contained in Approved Ohio TMDLs to Date L-85
L5.1: Projects included in the 2012 Integrated Report L-85
L5.2: Projects included in the 2014 Integrated Report L-97

Section M: An Overview of Ground Water Quality in Ohio
M1: Introduction M-1
M2: Ohio's Ground Water Programs M-2
M3: Ohio's Major Aquifers M-4
M4: Site-Specific Ground Water Contamination Summary M-8
M5: Major Sources of Ground Water Contamination M-10
M6: Summary of Ground Water Quality by Aquifer M-15
M7: Conclusions and Future Directions for Ground Water Protection M-40

Section N: References

List of Tables and Figures

Tables

B-1. Ohio's water resource statistics B-1
B-2. List of Ohio's principal streams and large rivers B-4
B-3. 2020 goals for four beneficial uses, Lake Erie and the Ohio River B-9
C-1. OWDA loans administered during calendar years 2015-2016 ..... C-26
D-1. Ohio water quality standards in the 2018 IR D-8
D-2. Data types used in the 2018 IR D-10
D-3. Descriptions of data used in the 2018 IR from sources other than Ohio EPA D-11
E-1. Comparison between fish concentration values and FCA program values E-3
E-2. Example data for calculating a weighted average fish tissue value E-4
E-3. A summary of changes in attainment from 2016 to 2018 IR E-6
E-4. Waters not supporting the human health use because levels of PCBs or mercury in fish tissue exceed the threshold level upon which the WQS criterion is based. These waters are category 5. ..... E-7
E-5. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based. These waters are category 1 ..... E-9
E-6. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based and which were categorized as impaired in the 2016 IR. These waters have become category 1 with the current assessment E-11
E-7. Waters with contaminants other than PCBs and mercury that affect fish tissue (included on the 303(d) list). These waters are category 5 ..... E-11
E-8. Waters for which the existing unimpaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 1h E-11
E-9. Waters for which the existing impaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 5h E-14
E-10. Waters with current fish tissue data where inadequate samples exist to determine impairment status. These waters are category 3i E-20
E-11. Large rivers and their impairment status E-22
E-12. Inland lakes and their impairment status E-23
E-13. Lake Erie assessment units and their impairment status E-25
F-1. Summary of the RU assessment methods F-2
F-2. Determining assessment status of Lake Erie shoreline AUs F-5
F-3. Determining assessment status of WAUs and LRAUs F-7
F-4. Recreation index score matrix F-8
F-5. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the western basin (Sandusky Bay and west) F-11
F-6. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the central basin (east of cedar point) F-12
F-7. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the central basin shoreline AU F-14
F-8. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the western basin shoreline AU F-14
F-9. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the islands shoreline AU. F-15

F-10. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the Sandusky basin shoreline AU. F-15
F-11. Aggregated exceedance frequencies at 65 Lake Erie public beaches from 2013-2017 (pooled by Lake Erie shoreline AU to report use support). F-17
F-12. Annual Ohio EPA *E. coli* sampling effort and RU assessment (using Ohio EPA data) in Ohio streams, rivers and inland lakes, 2011-2017 recreation seasons F-18
F-13. Overall differences in the assessment of RU attainment, 2010-2018 ..... F-18
F-14. Summary assessment status of the RU in Ohio's WAUs by assessment cycle F-20
F-15. Summary assessment status of the RU in Ohio's LRAUs F-21
F-16. Summary assessment status of the RU for inland lakes, 2013-2017 ..... F-22
F-17. Swimming advisory posting at Ohio's inland lake public beaches (2013-2017). F-25
F-18. Proposed Ohio Lake Erie AUs F-28
F-19. Data collected in Ohio waters of Lake Erie that is credible data level 3 or could likely be approved as level 3 with review and coordination F-31
F-20. The number of 10-day time frames exceeding the 30 percent coverage threshold (with 20,000 cells/mL) or greater) in the western basin open water unit for each year beginning in 2012 ..... F-36
G-1. Summary of aquatic life use assessment for Ohio's WAUs, LRAUs and LEAUs: 2002-2018 Integrated Report cycles G-9
G-2. Breakdown by size category of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-3. Breakdown by designated or recommended aquatic life use of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-4. Prevalence of the top five causes of aquatic life use impairment in WAUs and LRAUs based on biological and water quality survey data collected from 2003-2016 ..... G-12
H-1. PDWS attainment determination. H-4
H-2. Waters designated as impaired for (not supporting) the PDWS beneficial use. H-12
H-3. Summary of PDWS assessment results for the nitrate, pesticide and algae indicators H-18
I-1. List of high-quality wetland areas I-3
I-2. List of significant wetland areas I-8
I-3. Proposed lake habitat use criteria I-15
I-4. Summary of the lake habitat use assessment for lakes sampled in 2015-2016 using the draft assessment methodology described in this section I-17
J-1. Category definitions for the 2018 Integrated Report and 303(d) list J-2
J-2. Potential listing opportunities in Ohio's listing framework. J-3
J-3. Priority points for impaired AUs. J-5
J-4. Summary of results for each beneficial use J-16
J-5. Number of AUs removed from or added to the 303(d) list J-20
J-6. Summary of reasons for changes to the 2018 303(d) list J-20
J-7. Removals from the 303(d) list because of a flaw in the original listing J-21
J-8. Removals from the 303(d) list because of new data J-21
J-9. Addition to the 303(d) list because of flaw in original listing J-23
J-10. Additions to the 303(d) list because of new data J-23
J-11. Ohio TMDLs approved by U.S. EPA at the 11-digit hydrologic unit scale J-27
J-12. Ohio TMDLs approved by U.S. EPA at the 12-digit hydrologic unit scale J-31
J-13. Short-term schedule for TMDL development J-33
M-1. Summary of Ohio's Ground water protection programs. M-3
M-2. Ground water contamination summary M-8
M-3. Major sources of potential ground water contamination M-14

M-4. Counts of public water systems where 2007-2017 decadal mean values of compliance data occur in the Watch List and Impaired Category M-17
M-5. Counts of wells where 2007-2017 decadal mean values of AGWQMP data occur in the Watch List and Impaired Category (maximum values used for nitrate). M-27

Figures

B-1. Map of Ohio's principal streams and large rivers. B-2
B-2. Ohio Scenic River System B-3
C-1. Ohio Lake Erie AOCs and major Lake Erie tributaries C-7
D-1. Ohio's large rivers (rivers with drainages greater than 500 mi^2) and their watersheds D-3
D-2. Ohio's 12-digit WAUs and 8-digit hydrologic units D-4
D-3. Ohio's Lake Erie assessment units – western basin, islands, Sandusky basin and central basin shorelines and open water areas D-5
E-1. Illustration of the relationship among the WQS values, the values that trigger issuance of fish consumption advisories (FCAs) and the resulting decision regarding waterbody impairment associated with an FCA. E-2
E-2. Flowchart for the categorization of fish tissue data for the IR E-6
F-1. Lake Erie public beaches sampled under Ohio's bathing beach monitoring program. F-3
F-2. Erie and Sandusky County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-3. Cuyahoga and Loraine County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-4. Example of bacteria sampling locations, upper Walhonding River study area (2010) F-6
F-5. Frequency of advisory postings at Ohio's Lake Erie public beaches F-16
F-6. Histogram of RU index scores for Ohio's WAUs F-19
F-7. New Ohio Lake Erie AUs F-29
F-8. Monitoring locations in the western basin of Lake Erie in 2017 ..... F-30
F-9. Bloom severity observed and projected (with 40 percent TP reduction) since 2002 ..... F-35
G-1. Flowchart for determining if WAU score can be derived based on available sampling locations. G-5
G-2. Percent attainment status and goal progress ("100 percent by 2020") for monitored miles of Ohio's LRAUs (23 rivers/38 AUs/1247.54 miles total) G-10
G-3. Average full attainment watershed score for Ohio's HUC11 WAUs (IR cycles 2002-2010) and HUC12 WAUs (IR cycles 2010-2018). G-13
G-4. Breakdown by designated or recommended aquatic life use of sites in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 (n= 3,911 sites) G-13
G-5. Status and trend of aquatic life use "80 percent by 2020" goal for wading and principal stream and river sites in Ohio based on the last five IR cycles. G-14
G-6. Average IBI scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-16
G-7. Average MIwb scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-17
H-1. Ohio WAUs, LRAUs and LEAUs that contain at least one active surface water drinking water intake. H-2
H-2. AUs with nitrate indicator results H-9
H-3. AUs with pesticide indicator results H-10
H-4. AUs with algal toxin indicator results H-11
I-1. Supplemental weekly sampling locations for chlorophyll and microcystin; sampled by University of Toledo and the Ohio State University/Stone Laboratory (boxed sites) researchers in 2017 ..... I-20
J-1. Listing by smaller AUs and individual beneficial uses J-3
J-2. Priority points assigned based on use impairment or other factors (extra points). J-4

J-3. Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey. J-7
J-4. Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey. J-9
J-5. Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009. J-10
J-6. Key steps in the state TMDL and binational Annex 4 processes. J-13
J-7. Summary of 2018 IR results for watershed AUs by beneficial use. J-17
J-8. Summary of 2018 IR results for large river AUs by beneficial use. J-18
J-9. Summary of 2018 results by AU type. J-19
J-10. Summary of reasons for changes to the 2016 303(d) list. J-21
M-1. Aquifer types in Ohio modified from ODNR glacial and bedrock aquifer maps. M-4
M-2. Iron distribution in AGWQMP wells, overlain on major aquifers. M-5
M-3. Manganese distribution in AGWQMP wells, overlain on major aquifers. M-6
M-4. Distribution of public water systems on impaired list for arsenic for both treated and raw waters. M-34
M-5. Distribution of public water systems in impaired category and on the watch list for sulfate in raw water. M-35
M-6. Distribution of public water systems on fluoride MCL watch list for treated and raw water. M-36
M-7. Distribution of public water systems with maximum nitrate in treated and raw water greater than the MCL. M-37

List of Acronyms and Abbreviations

AmphIBI	amphibian index of biotic integrity
AMP	Atrazine monitoring program
AOC	Area of Concern (as identified under the Great Lakes Water Quality Agreement)
ARRA	American Recovery and Reinvestment Act of 2009
AU	assessment unit
BAV	beach action value
BEACH	Beaches Environmental Assessment and Coastal Health (Act)
BMP	best management practice
BNR	biological nutrient removal
BUI	Beneficial Use Impairment (as described in the Great Lakes Water Quality Agreement)
CABB	Center for Applied Bioassessment and Biocriteria
CAFO	Concentrated Animal Feeding Operations
CDBG	Community Development Block Grant
CDC	Center for Disease Control
cfu	colony forming unit
Corps	U.S. Army Corps of Engineers
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSO	combined sewer overflow
CSP	Conservation Stewardship Program
CWH	coldwater habitat
CWA	Clean Water Act
DDAGW	Division of Drinking and Ground Waters
DDT	dichlorodiphenyltrichloroethane
DEFA	Division of Environmental and Financial Assistance
DES	Division of Environmental Services
DLG	digital line graph
DRG	digital raster graphic
DSW	Division of Surface Water
EAG	External Advisory Group
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
EWH	exceptional warmwater habitat
FCA	fish consumption advisory
FFY	federal fiscal year
FSA	Farm Service Agency
FWPCA	Federal Water Pollution Control Act
GIS	Geographic Information System
GLLA	Great Lakes Legacy Act
GLRC	Great Lakes Regional Collaboration
GLRI	Great Lakes Restoration Initiative
GLSM	Grand Lake St. Marys
GLWQA	Great Lakes Water Quality Agreement
GRP	Grassland Reserve Program
GRTS	Generalized Random Tessellation Stratified (survey design)
HAB	harmful algal bloom
HSD	honest significant difference
HUC	hydrologic unit code

IBI	index of biotic integrity
ICI	invertebrate community index
IDP	indirect discharge permit
IR	Integrated Report
kg	kilogram
L	liter
LA	load allocation
LAMP	lakewide action and management plan
LCI	Lake Condition Index
LDI	Landscape Development Intensity
LEAU	Lake Erie assessment unit
LEC	(Ohio) Lake Erie Commission
LENT	Lake Erie nutrient targets
LEPF	(Ohio) Lake Erie Protection Fund
LH	lake habitat
LHD	local health district
LRAU	large river assessment unit
LRW	limited resource water
LTCP	long-term control plan
MBI	Midwest Biodiversity Institute
MF	membrane filter
mg	milligram
mi^2	square miles
mL	milliliter
MIwb	modified index of well-being
MOR	monthly operating data
MPN	most probable number
MRBI	Mississippi River Basin Initiative
MS4	municipal separate storm sewer systems
MWH	modified warmwater habitat
NARS	National Aquatic Resource Survey
NCCA	National Coastal Condition Assessment
NCWQR	National Center for Water Quality Research
NEORSD	Northeast Ohio Regional Sewer District
ng	nanogram
NHD	National Hydrography Dataset
NLCD	National Land Cover Dataset
NOAA	National Oceanic and Atmospheric Administration
NOI	notice of intent
NPDES	National Pollutant Discharge Elimination System
NPS	nonpoint source
NRCS	Natural Resources Conservation Service
NSMP	Nonpoint Source Management Plan
NSSP	National Shellfish Sanitation Program
NWI	National Wetland Inventory
NWQI	National Water Quality Initiative
OAC	Ohio Administrative Code
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
OMZA	outside mixing zone average

ORC	Ohio Revised Code
ORSANCO	Ohio River Valley Water Sanitation Commission
OSIP	Ohio Statewide Imagery Program
OTMP	Ohio Tributary Monitoring Program
OWDA	Ohio Water Development Authority
OWRC	Ohio Water Resources Council
PAHs	polyaromatic hydrocarbons
PHA	public health advisory
ppb	parts per billion
PCB	polychlorinated biphenyls
PCR	primary contact recreation
PDWS	public drinking water supply
POTW	publicly owned treatment works
PS	point source
PTI	permit to install
PTO	permit to operate
PWS	public water supply
QA	quality assurance
QC	quality control
QDC	qualified data collector
QSC	Quicksilver Caucus
RAP	Remedial Action Plan
RAS	return activated sludge
RF3	Reach File Version 3
RM	river mile
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SFY	state fiscal year (July 1 to June 30)
SIU	significant industrial user
sq mi	square miles
SSM	single-sample maximum
STORET	STOrage and RETtrieval (a U.S. EPA water quality database)
STV	statistical threshold value
SWIF	Surface Water Improvement Fund
SWIMS	Surface Water Information Management System
TDS	total dissolve solids
TMDL	total maximum daily load
TNTC	too numerous to count
TOC	total organic carbon
µg	microgram
USDA	United States Department of Agriculture
U.S. EPA	United States Environmental Protection Agency
USC	United States Code
USGS	U.S. Geological Survey
UV	ultraviolet
VIBI	vegetation index of biotic integrity
VIBI-FQ	VIBI – floristic quality
WAS	waste activated sludge
WAUs	watershed assessment unit
WBLE	western basin of Lake Erie

WEG	(Ohio EPA's) wetland ecology group
WHIP	Wildlife Habitat Incentives Program
WHO	World Health Organization
WLA	wasteload allocation
WPCLF	Water Pollution Control Loan Fund
WQ	water quality
WQC	Water Quality Certification (Section 401)
WQM	Water Quality Management (plan)
WQPSD	Water Quality Permit Support Document
WQS	water quality standards
WRP	Wetlands Reserve Program
WRRSP	Water Resource Restoration Sponsor Program
WSRLA	Water Supply Revolving Loan Account
WWH	warmwater habitat
WWTP	wastewater treatment plant

Executive Summary

The *Ohio Integrated Water Quality Monitoring and Assessment Report* summarizes water quality conditions in the State of Ohio. This report satisfies Ohio's water quality reporting requirements under Sections 303(d), 305(b) and 314 of the federal Clean Water Act. This report was last updated in 2016. **Analysis and listing changes are based on data collected during 2015 and 2016 for aquatic life and human health (fish tissue) uses; recreation and public drinking water supplies uses consisted of data from 2016 and 2017**.

Using methods devised to determine the suitability of waters for four specific uses—aquatic life (fish and aquatic insects), recreation (such as boating and swimming), human health (related to fish tissue contamination) and public drinking water supplies—available data were compared with water quality goals. The results indicate which waters are meeting goals and which are not. Waters not meeting the goals for one or more of the four types of uses are referred to as *impaired.* The waters found to be impaired are prioritized and scheduled for further study and restoration.

This report describes the methods used to judge impairment of each type of use and have evolved in each reporting cycle as the Agency gains access to more data and develops better ways to interpret them.

Results are reported for 1,538 watershed units, 38 large river units (in Ohio's 23 rivers that drain more than 500 square miles) and seven Lake Erie units. Additional information on streams draining between 20 and 500 square miles is also presented as this subset of waterbodies is used to calculate and track progress of Ohio's 80 percent full attainment by 2020 goal for wading and principal streams and rivers.

The percent of monitored miles of Ohio's large rivers in full attainment stayed steady compared to the same statistic reported in the 2016 IR. The 100 percent full attainment by 2020 aquatic life goal statistic for Ohio's largest rivers now stands at 87.5 percent, compared to 87.4 percent from the 2016 report. Conversely, smaller streams continue to improve with the percent of assessed sites in full aquatic life use attainment increasing from 66.1 percent to 69.3 percent. The top reasons for aquatic life impairment continue to be sediment, nutrients, habitat modification, hydromodification and organic enrichment.

For the human health use (fish tissue), polychlorinated biphenyl (PCB) contamination in fish is the cause of most of the human health impairments in Ohio. Mercury is the second leading cause.

The chemicals of concern causing impairment of the public drinking water supply use include nitrate, atrazine and cyanotoxin (due to certain algae). The primary source of the chemicals is nonpoint source runoff from agricultural land use. Additional sources of nitrate include home and commercial fertilizer application, failing septic systems, unsewered areas and wastewater treatment plant discharges. Of the 119 public drinking water supply assessment units, 37 are now listed as impaired by algae, with another 17 on the watch list for algae.

The recreation (bacteria) use analysis focuses on the number of bacteria in the water. For Lake Erie public beaches, the frequency of swimming advisories varies widely, ranging from 1.2 percent to more than 50 percent. Generally, beaches located near population centers have the most problems. Results are also reported for streams and inland lakes.

The recreation use has also been assessed for algae impacts in the western basin of Lake Erie. The western basin shoreline, the islands shoreline and the western basin open water assessment units are all listed as impaired by algae.

Of the 6,316 possible category assignments, the 2018 303(d) list includes changes in 209, with 69 delistings and 135 new listings. Most 303(d) removals and new listings are due to new data.

Changes since the 2016 Integrated Report

Changes made between the 2016 Integrated Report and the 2018 Integrated Report are as follows:

- This report contains revised assessment units for the entire Ohio portion of Lake Erie in Section D1.
- This report also discusses future methodology development for recreation assessment of Lake Erie based on algae blooms in Section I.
- The methodology for evaluating the recreation (bacteria) use has been updated to include the revised *E. coli* water quality criteria, effective January 2016, in Section F1.
- A new subcategory, 5p, was added to track which impairments are based on threatened status, primarily for nutrients.

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

D7. Public Comments and Responses to Comments on Draft Report

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

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

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

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

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

Comments Related to Specific Watersheds

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Addressing Waters Not Meeting Water Quality Goals

The federal Clean Water Act (CWA) requires that states identify waters not meeting water quality goals and then prioritize them for action to restore their beneficial uses[1]. The resulting list of prioritized impaired waters is known as the 303(d) list. Ohio's 2018 303(d) list is presented in Section L4 of this report.

Ohio made substantial changes to its listing process in 2010 (see Sections A and J in the *2010 Integrated Report* [Ohio EPA, 2010]); Ohio's *2012 Integrated Report* and 303(d) list (Ohio EPA, 2012) contained relatively few changes compared to the major adjustments made in 2010. A significant change to the 2014 report included the addition of a new indicator (algae) to the public drinking water supply (PDWS) use. The 2016 report contained changes in how the information was organized and what data sets were used (for instance, 2015 data was included for both recreation and PDWS uses) and was amended to include new open water assessment units for Lake Erie and a new recreation assessment methodology based upon algae. In 2018, the most significant changes are to the recreation use assessments and how Lake Erie Assessment Unit are defined (increased from six to seven units). The assessment based on bacteria has been updated to comply with the new *E. coli* WQS which include a 90-day geometric mean and statistical threshold value (see Sections F1-F3). In addition, an assessment method for recreation based on algae for the western basin of Lake Erie has been added in Section F4.

This section outlines the listing framework, lays out the prioritizing and delisting processes and results and reports on the status of Ohio total maximum daily load (TMDL) efforts including schedules for future TMDLs in Ohio.

J1. Ohio's 303(d) Listing Framework

The process of listing involves assigning a condition status (a category) for each of four beneficial uses for each assessment unit (AU). Data requirements, descriptions of available data, assessment methodologies and results were discussed and reported by individual beneficial use in Sections E, F, G and H.

In 2010, Ohio modified the five-category listing structure suggested by U.S. EPA to accommodate listing by beneficial use and introduced subcategories to give more information about the status of each water. In 2012, one additional subcategory - t - was added to aid reporting the status of AUs relative to approved TMDLs and data availability. In 2014, the "t" subcategory was altered slightly and a new category - d - was added to better reflect circumstances encountered as Ohio EPA revisits watersheds having approved TMDLs. In 2016, a new subcategory in Category 5 (5-alternative or 5-alt) was added to report on alternative restoration approaches for CWA 303(d) listed waters. Such waters will still require TMDLs until water quality standards are achieved. Ohio does not have any AUs listed under 5-alt in this report but anticipates using this subcategory in the future. In 2018, a new subcategory "p" is added under Category 5 to track which impairments are based on threatened status, primarily for nutrients. Table J-1 summarizes the categories and subcategories used in this report.

Also, in 2010, Ohio began listing by beneficial use within each AU and reporting on a smaller AU size. Watershed AUs shifted from an average size of 130 square miles to 27 square miles. Under the old system, an impairment of one beneficial use caused the AU to be Category 5 (impaired) regardless of the status of other uses.

[1] Beneficial uses include aquatic life, human health (fish contaminants), recreation and public [drinking] water supply.

Table J-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[2]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[3] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[4]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

Figure J-1 illustrates the significance of these changes in the listing procedures. A = aquatic life use; R = recreation use; H = human health use; and P = public water supply use. The numbers refer to the categories described in Table J-1 above. In the example, an AU listed in 2008 as impaired (category 5) appeared on the 2010 303(d) list as five units with four uses each; thus, reporting one piece of information changed to reporting 20 pieces of information. Whereas the 2008 list indicated only that the unit was impaired, the new listing indicates all the following information:

- Aquatic life use is impaired (5) in one unit, not impaired (1) in one and unknown (3) in one. A TMDL to address impairments has been completed in one unit (4A) and the impairment in the remaining unit is being addressed in some other way (4B, for example, a discharge permit).
- Recreation use is impaired (5) in three units, unknown (3) in one and a TMDL to address the impairment in one unit has been completed (4A).
- Human health results based on fish tissue analysis indicate that four of the five units are impaired (5) and one is unknown (3).
- Public drinking water supplies exist in only two of the five units and one of those is impaired (5). The status of the other is unknown (3).

[2] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[3] HUC means hydrologic unit code.
[4] Ohio currently has no waters that are listed under this subcategory.

For the aquatic life use, Ohio EPA continues the transition that began in 2010 of translating data evaluated at the 11-digit hydrologic unit size to the smaller 12-digit size. We expect that the few remaining relic categories will be dealt with as those areas are monitored again.

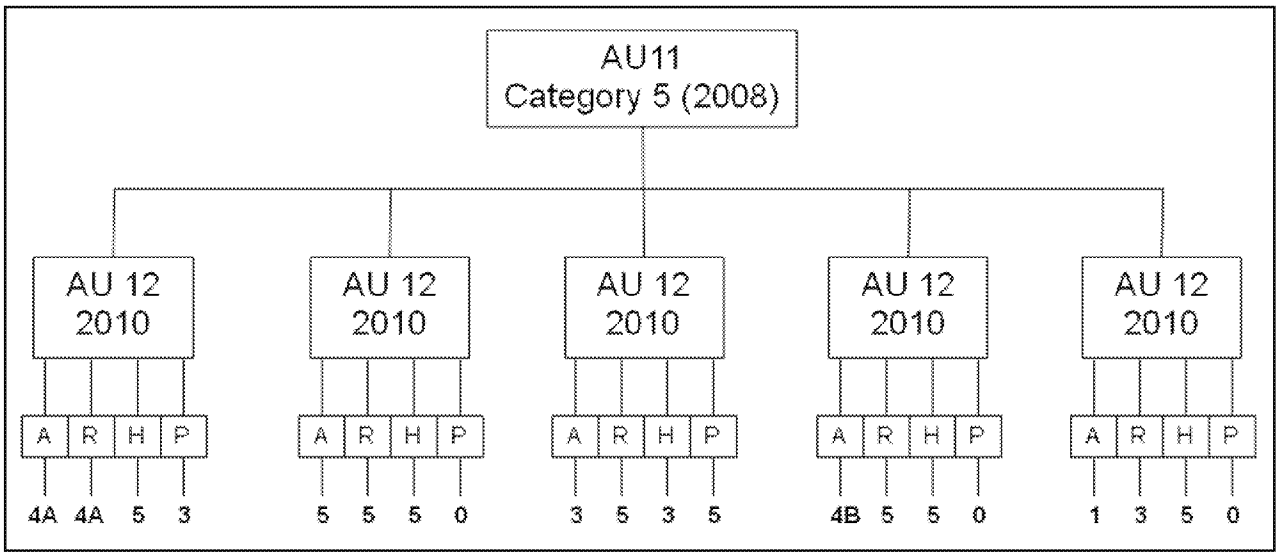

Figure J-1 — Listing by smaller AUs and individual beneficial uses.

Table J-2 shows the number of potential listings that could result from the combination of smaller AUs and listing by individual use.

Table J-2 — Potential listing opportunities in Ohio's listing framework.

	2008 and Before			2010 and After		
AU Types	Number of AUs	Status Reports per Unit	Total Number of Possible Listings	Number of AUs	Status Reports per Unit	Total Number of Possible Listings
Watershed	331	1	331	1538	4	6,152
Large river	23	1	23	38	4	152
Lake Erie shore	3	1	3	3	4	12
Totals	357	1	357	1,579	4	6,316

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

As previously stated, the impaired waters are identified and assigned a category by individual beneficial use in Sections E, F, G and H. After waters are identified as impaired and it is determined that a TMDL is required, the waters are prioritized to produce the 303(d) list (see Section L4). Because Ohio uses a highly integrated monitoring and TMDL linkage to ensure efficient use of resources, it makes sense to continue to set priorities by AU rather than by individual use.

Ohio River and Open Waters of Lake Erie

ORSANCO has lead responsibility for the multi-jurisdictional Ohio River water quality as outlined in Section D2. Binationally, the U.S. and Canada are working together under the GLWQA to address water quality issues in Lake Erie. Ohio EPA is actively participating in TMDLs for tributaries as well as many other actions for Lake Erie outlined in Section J3, so priority for Ohio EPA-initiated TMDLs is assigned a low priority for these waters. TMDLs in watersheds that drain to the Ohio River and Lake Erie will reduce the pollutant load delivered to each water.

Inland Waters and Lake Erie Shoreline

A point system is used to assign priority to impaired AUs. A total of 22 points could be assigned to an AU, distributed as shown in Figure J-2. The priority results for specific AUs are reported in Section L and in AU summary information available on the web page.

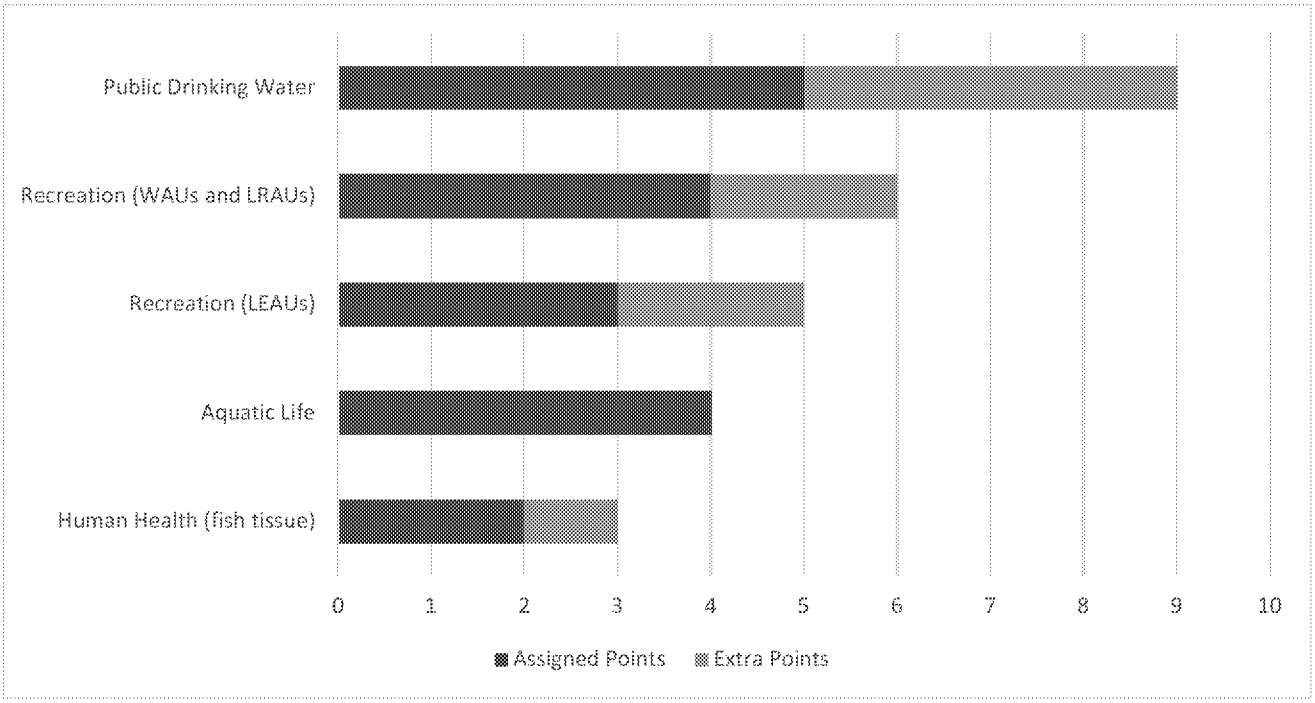

Figure J-2 — Priority points assigned based on use impairment or other factors (extra points).

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.

Two additional points may be awarded to AUs that are impaired for the recreation use and contain Class A waters. Class A waters are those most suitable for recreation, such as popular paddling streams and lakes with public access points developed, maintained and publicized by governmental entities. Priority points for Lake Erie recreation use are calculated based on the bathing water geometric mean for *E. coli* and the percentage of days that the AU exceeded that criteria. An impaired AU gets one point if the percentage of days in exceedance was in the range of 0 to 10 percent; two points if in the range of 10.1 percent to 20

percent; and three points if the percentage of days in exceedance was greater than 20.1 percent. Two additional points may also be awarded to AUs that are impaired for recreation use based on algae.

Table J-3 — Priority points for impaired AUs.

Point Values	Condition	Number of AUs		
		WAUs	LRAUs	LEAUs
Human Health Use impairment (fish tissue contaminants) (maximum of 3 points)				
2	Listed as impaired for Fish Contaminants (Human Health Use)	436	32	4
1	Additional point in AUs that exceed 500 ppb for PCBs or Hg	3	0	0
Recreation Use impairment – WAUs and LRAUs (maximum of 6 points)				
1	Listed as impaired with AU score between 0 and 25	108	0	
2	Listed as impaired with AU score between 75.1 and 100	92	17	
3	Listed as impaired with AU score between 25.1 and 50	271	2	
4	Listed as impaired, with AU score between 50.1 and 75	279	7	
2 extra	Additional points if AU contains Class A waters	74	26	
Recreation Use impairment - LEAUs (maximum of 5 points)				
1	Listed as impaired with 0 to 10% of season exceeding *E. coli* criteria			1
2	Listed as impaired with 10.1% to 20% of season exceeding *E. coli* criteria			1
3	Listed as impaired with > 20.1% of season exceeding *E. coli* criteria			2
2 extra	Additional points if AU is impaired for algae			3
Aquatic Life Use impairment (maximum of 4 points)				
1	Listed as impaired, with AU score between 0 and 25	161	0	2
2	Listed as impaired, with AU score between 75.1 and 100	35	8	0
3	Listed as impaired, with AU score between 25.1 and 50	119	2	2
4	Listed as impaired, with AU score between 50.1 and 75	93	2	0
Public Drinking Water Use impairment (maximum of 9 points)				
5	Listed as impaired for Public Drinking Water Use for one indicator	33	5	6
2 extra	Additional points in AUs impaired for each additional indicator	1	3	0
1	Not listed as impaired, but on watch list; one point for each indicator	33	3	0

As outlined in Section C3, the priority schedule for TMDL projects in Table J-15 was developed considering the above information, as well as the following:

- Social Factors (highly used recreational waters, drinking water supply for significant populations, ongoing/sustained involvement of any local groups or government, etc.)
- Value Added (is a TMDL the most efficient way to achieve improved water quality?)
- Is there an approved watershed action plan – if so how many implemented projects?
- How much regulatory authority exists over sources?
- Is there an alternative way to improve water quality more quickly than a TMDL? (for example, immediate implementation of an existing plan or projects, or imposing more stringent permit limits to address a localized problem)
- Are there other factors in play? Examples include:
    - Pending enforcement for a discharger (possible 4B option)
    - U.S. Army Corps of Engineers modeling of reservoir discharge to improve downstream water quality
    - Local or statewide strategy or requirements in place to address an issue/pollutant (for example, new health department rules for home sewage treatment systems if they are sole/primary source of impairment)

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.

In the *2014 Integrated Report*, Ohio listed waters impaired by algal toxins for the first time. In the 2016 report, more waters are listed, especially lakes and reservoirs. 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.

Based on a review of the inland lakes or reservoirs that were listed as impaired or on the Watch List for algae indicators in the 2014 Integrated Report, as well as the more recent data collected for algae at PDWS with intakes in inland lakes or reservoirs that led to the 303(d) listing in this report, the following inland lakes were chosen as Ohio's priorities for the next few years:

- Tappan Lake in Harrison county (upper Little Stillwater Creek)
- W.H. Harsha Lake in Clermont County (Lucy Run - East Fork Little Miami River)
- Clyde/Beaver Creek Reservoir in Seneca County (Beaver Creek, Green Creek)

The impairments (or watch list parameters) cited include nitrate, pesticides and algae indicators. Where there is a TMDL developed, it is older and/or does not include the stream reaches that most impact the lake/reservoir. In most cases, there are active local parties interested and/or there is a sizable population served by these sources. Ohio EPA considers nutrients (primarily phosphorus as the TMDL parameter) to be the priority for the inland lake efforts. However, the cause of impairment in more than one area also includes pesticides and/or nitrates, so other pollutants may be added to the TMDL or alternative plan. These waters are listed on the 303(d) Priority list in Section L4 as follows:

AU Number	AU Name	Sq. Mi. in Ohio	Human Health	Recreation	Aquatic Life	PDW Supply	Priority Points
05040001 15 03	Upper Little Stillwater Creek	29.72	1	1	3	5	5
05090202 12 03	Lucy Run-East Fork Little Miami River	32.48	1	1	5	5	7
04100011 12 02	Beaver Creek	29.3	3i	4Ah	4A	5	5
04100011 12 03	Green Creek	30.78	1	5	4A	5	9

While they do not have the highest priority points, the AUs with higher priority points that include a PDWS impairment already have a TMDL under development or will be addressed through other means such as the Great Lakes Water Quality Agreement Annex 4 nutrient reduction efforts discussed in J3.

Tappan Lake

- Stillwater Creek basin – primarily forest with mining influences.
- 2,350 acres of water surface.
- Provides drinking water to the Village of Cadiz (pop. ~ 3,350).
- Lake is operated by the U.S. Army Corp of Engineers. It is a multipurpose project for flood reduction, recreation and fish and wildlife enhancement.
- Assessed by Ohio EPA in 2012-2013 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin).

2018 IR Update

The Tappan Lake Nutrient Reduction Initiative (TLNRI) was formed at the end of 2017 by the Muskingum Watershed Conservancy District and the Village of Cadiz. TLNRI's goal is to eliminate the presence of harmful algal blooms and their resultant water-borne toxins in Tappan Lake within the next decade. The TLNRI has outlined the following steps toward achieving their goal:

- Phase 1: Comprehensive study of existing water quality data for the watershed and identification of gaps (year one)
- Phase 2: Collection of data to fill gaps, evaluation and selection of remedial actions for the watershed (years two through four)
- Phase 3: Implementation of action plan for the watershed (years five through 10)

Ohio EPA is an active partner in the initiative and will provide support through participation in the four subgroups. The Stillwater Creek watershed is a high priority project for either a TMDL or an alternative plan. The Agency will continue to participate in the TLNRI efforts and determine which approach is most appropriate as that work unfolds.

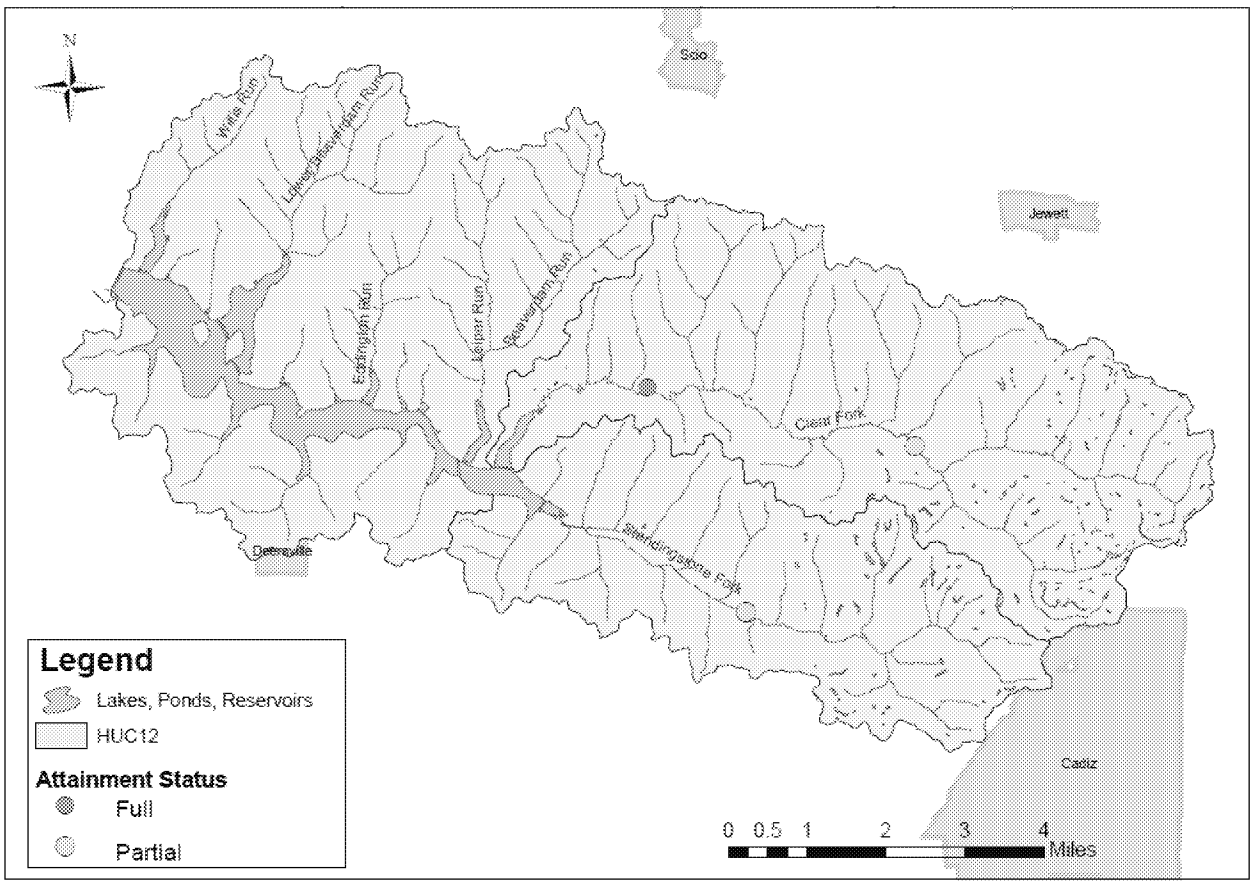

Figure J-3 — Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey.

William H. Harsha Lake

- Located in the East Fork of the Little Miami River watershed – largely agriculture and forest with some urban influence.
- 2,160 acres of water surface.
- Lake is operated by the U.S. Army Corp of Engineers and is a multipurpose project for flood reduction, water supply, recreation and wildlife habitat.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin) and placed it on the watch list for atrazine.

From the *Ohio EPA East Fork Little Miami River Technical Support Document, 2014*:

- Clermont County operates a community public water system that serves a population of approximately 117,097 people. The water supply sells water to the village of Batavia, village of Williamsburg and New Richmond Robin-Grays water system. Clermont County operates two ground water plants and one surface water plant. The BMW surface water plant draws water from an intake structure on Harsha (East Fork) Lake. The system's treatment capacity is approximately 27.5 million gallons per day, but current average production is 12.5 million gallons per day.
- There are several environmental organizations active in the East Fork Little Miami River watershed. The oldest of these is Little Miami Incorporated (LMI) which has been active for 45 years. Most of LMI's activities have involved the purchase of conservation easements or property purchases in the riparian zone of the river. Clermont County and SWCDs in Clermont, Brown, Highland and Clinton counties formed the East Fork Watershed Collaborative to take advantage of ODNR's Watershed Coordinator Program.
- Several research projects have been initiated in the East Fork watershed and Harsha Lake by U.S. EPA's National Exposure Research Laboratory in Cincinnati and the U. S. Army Corps of Engineers. Among other topics research and monitoring are examining HABs and nutrients, impacts on the Clermont County water intake, carbon sequestration, methane release, nutrient trading, environmental tipping points and fish population genetics. Currently, seven different projects are conducting monitoring in Harsha Lake.

2018 IR Update

The East Fork Watershed Cooperative, formed in 2001, continues to be active in addressing water quality issues in the East Fork Little Miami River watershed. The Cooperative is in the process of updating watershed action plans into Nine Element Nonpoint Source Implementation Strategy Plans. The first updated plan for the Fivemile Creek HUC 12, approved by Ohio EPA on July 31, 2017, is located upstream of Harsha Lake. The East Fork Little Miami River watershed is a high priority TMDL project for TMDL development. The Agency plans to initiate the next steps in the TMDL development process by the 2020 IR.

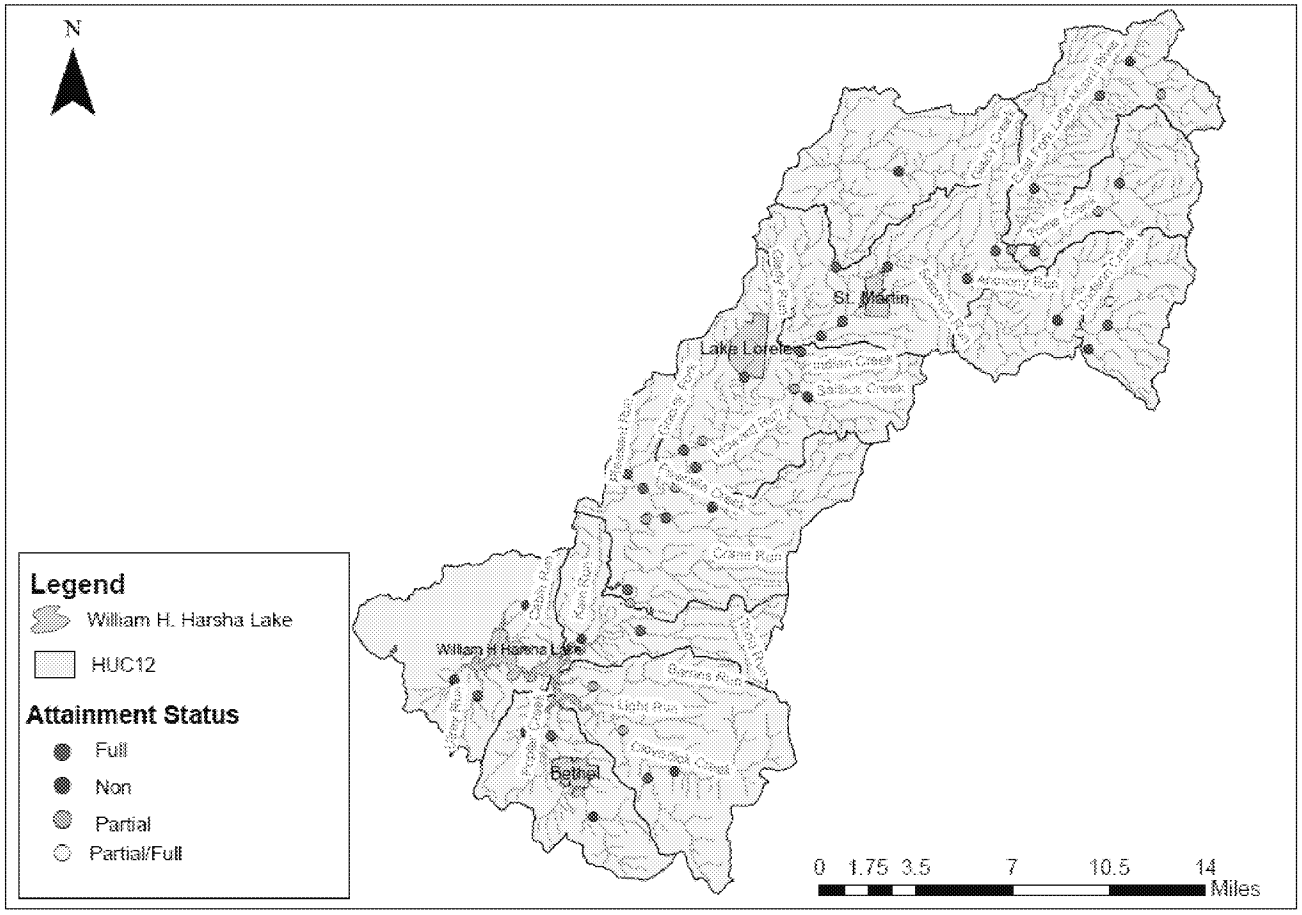

Figure J-4 — Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey.

Clyde/Beaver Creek Reservoir (up-ground)

- Sandusky river watershed - primarily agricultural land use above reservoir.
- 110 acres of water surface.
- Provides drinking water to the City of Clyde (pop. ~6,320).
- Reservoir was assessed by Ohio EPA in 2009-2010 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* placed the lake on the watch list for PDWS use based on algae indicators (microcystin) and nitrates. In the *2016 Integrated Report* it was listed as impaired for PDWS use based on algae indicators.
- The Raccoon Creek reservoir that also serves the City of Clyde is filled with water from Beaver Creek. The Raccoon creek reservoir was listed in the 2014 IR as impaired for PDWS based on algae indicators (microcystin).
- A TMDL for the lower Sandusky River was completed by Ohio EPA and approved by U.S. EPA but did not set specific loads for Beaver Creek since the stream was not listed as impaired.

2018 IR Update

Sampling of Raccoon Creek reservoir was completed in 2016 and 2017 as part of Ohio EPA's inland lakes sampling program. The results of this sampling will be included in the 2020 IR and will be used to direct the next steps in the restoration process for this watershed.

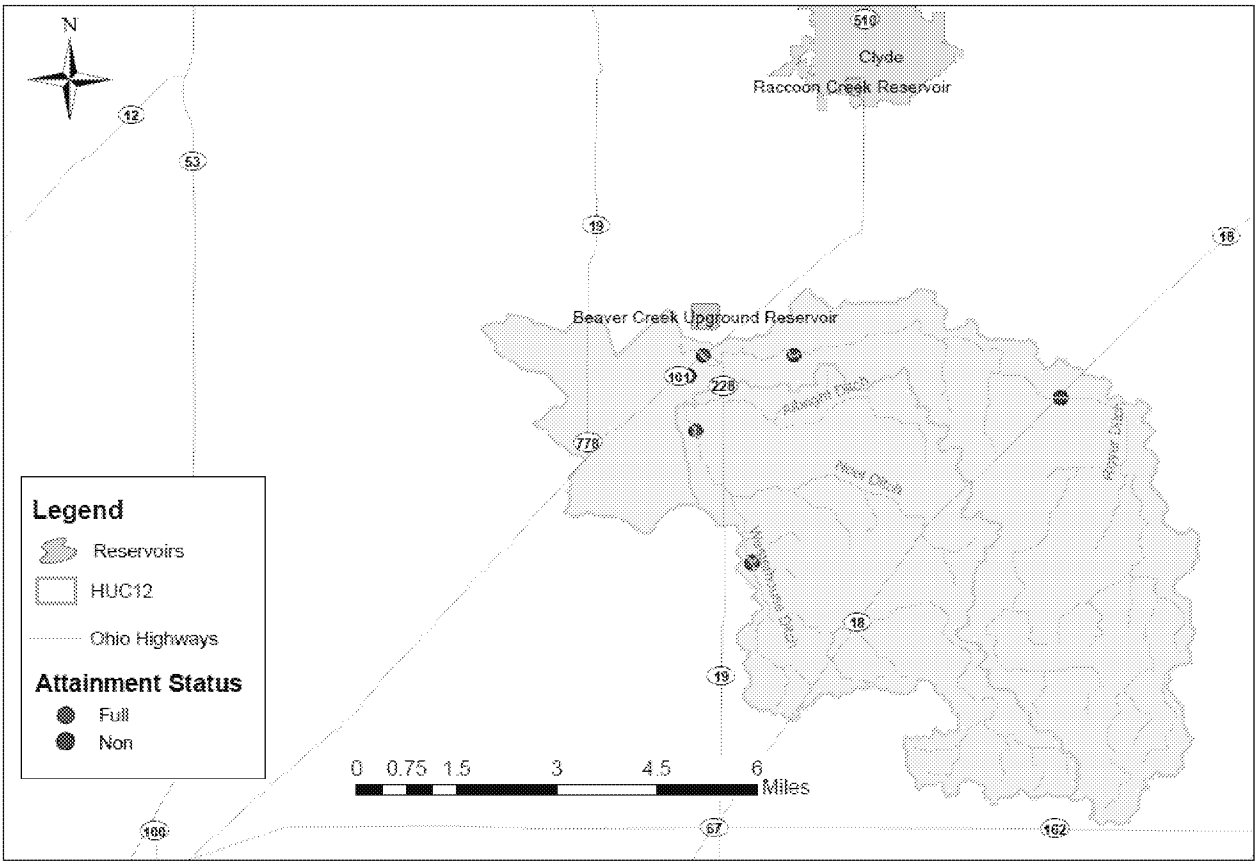

Figure J-5 — Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009.

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 in accordance with the Domestic Action Plan; and active participation on Annex 4 (Nutrients) and other Great Lakes Water Quality Agreement (GLWQA) efforts. Effective lake management and coordinated implementation are needed to address the Western Basin of Lake Erie algal blooms and the Central Basin hypoxia issues, requiring a multi-state and binational effort. Currently, there are many parallel planning and management efforts ongoing at the state, federal and binational level. For the open waters of Lake Erie, respecting and working through the binational governance framework is the appropriate process and Ohio intends to aggressively pursue state measures that complement the process and are neither duplicative nor contradictory.

Great Lakes Water Quality Agreement

Binationally, the U.S. and Canada are working together under the GLWQA to develop nutrient reduction strategies; and create and implement action plans to meet the targets. Annex 4 of the 2012 GLWQA specifically addresses nutrients in the Great Lakes and contains short-term requirements specific for Lake Erie. The U.S. and Canada formally adopted new phosphorus targets for the western and central basins of Lake Erie in February 2016. These targets have been incorporated into Ohio's Domestic Action Plan and are the goals for all the state's efforts to reduce phosphorus loading to the lake.

As water quality has improved through the decades, Ohio EPA has addressed most of the significant point source problems and are now left with primarily nonpoint source related impairments. The current Lake Erie algal blooms and Central Basin hypoxic zone are driven by nutrient loading to the Lake. Recent assessments by the Ohio Phosphorus Task Force (Phases I and II) and Annex 4's Objectives and Targets Task team, as well as a Nutrient Mass Balance Study completed by Ohio EPA in December 2016, 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 waterbody (Lake Erie). To compliment the 40 percent phosphorus reduction goals set forth by the Annex 4 committee, a separate analysis is being done to set seasonal/annual load reductions targets for the smaller tributaries (for example, within the Maumee basin). Ohio is directly involved in developing these goals and reduction targets needed for Lake Erie while moving forward on developing implementation strategies and acting to reduce nutrient contributions to the lake.

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.

Lake Erie Collaborative Agreement

The Lake Erie Collaborative Agreement was another state/province led-initiative; it was signed in June 2015 by Ohio, Michigan and Ontario (*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. One of the goals spelled out in the Collaborative Agreement was to reduce nutrient levels going into Lake Erie by 40 percent. The other was to develop a strategic plan to manage dredge material 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.

Ohio's Domestic Action Plan for Lake Erie

The State of Ohio's Domestic Action Plan expanded upon the *Collaborative Implementation Plan* and was submitted to U.S. EPA on Feb. 7, 2018. The commitment to meet the Collaborative Agreement phosphorus reduction goals of 20 percent by 2020 and 40 percent by 2025 was also incorporated into this plan. The plan is not intended to static but to be revised following the adaptive management philosophy. (*lakeerie.ohio.gov/Portals/0/Ohio DAP/DAP 1-0 Final for USEPA 2018-02-07.pdf*).

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 continue utilizing this tool to target implementation in Ohio's Lake Erie watersheds as it works to meet the Annex 4 phosphorus targets and allocations.

The TMDL document 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.

Ohio has completed TMDLs 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 nutrients and algae and have established phosphorus 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. However, Ohio is working with U.S. EPA, Tetratech (the contractor), Indiana and Michigan to develop a method for setting load reduction goals for the smaller tributaries to Lake Erie (for example, the tributaries to the Maumee river) and evaluate whether the tributary TMDLs will provide the load reductions needed to protect the lake. Where the local TMDL reductions are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps.

The Annex 4 process of developing loading targets and Domestic Action Plans are very similar 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.

State TMDL vs Binational Annex 4

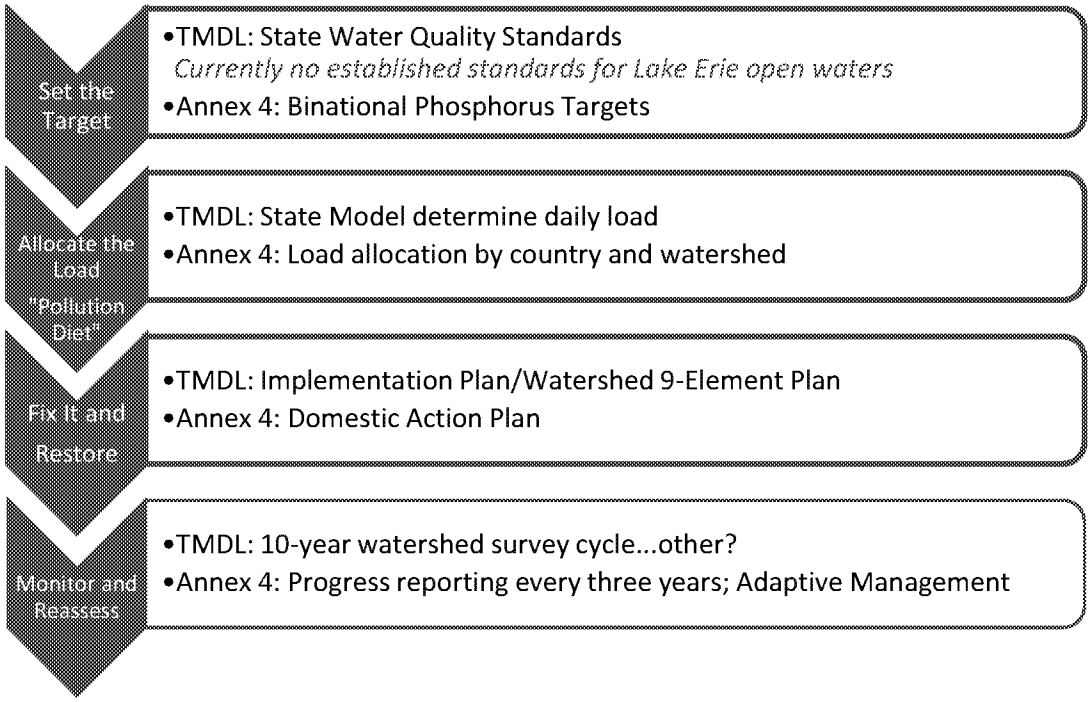

Figure J-6 — Key steps in the state TMDL and binational Annex 4 processes.

Ohio-based Nutrient Reduction Efforts

Ohio EPA's *NPS Management Plan* (Plan) is the Agency's guiding document that outlines recommended strategies, goals and objectives for controlling nonpoint sources of water quality impairment. The Plan was most recently updated in 2014 and identifies specific management activities to be implemented by Ohio EPA's NPS management program. The recent algal blooms on Lake Erie, the Ohio River and across the inland waters of Ohio were caused by excessive nutrients and exacerbated by changing weather patterns such as warmer temperatures and more intense storm events. The long-term solution is to reduce sources of nutrients while holistically restoring stream health and improving the waterway's ability to assimilate and utilize nutrients. This is also known as the stream's assimilative capacity. Restoring stream health will not only reduce the amounts of nutrients that reach the receiving water body, but restoration of in-stream and riparian habitat supports a healthy ecosystem, builds resilience to climate change impacts and improves recreational opportunities. The most current version of Ohio's *NPS Management Plan* is available at *epa.ohio.gov/Portals/35/nps/NPS_Mgmt_Plan.pdf.*

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 in 2010 and has expanded the scope and scale of implementation, developed a statewide strategy, targeted funding and undertaken legislative action to address the problem. As part of the more than $3 billion Ohio has invested comprehensively in the Lake Erie watershed, more than $150 million was made available starting in 2014 to help to public water systems keep drinking water safe and wastewater facilities reduce the amount of phosphorus they discharge into the Lake Erie watershed. In addition, Ohio continues to target millions of dollars to support local health departments to find and fix faulty residential septic systems that are contributing nutrients to Ohio waters.

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

- 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 *epa.ohio.gov/dsw/wqs/NutrientReduction.aspx*.
- GLRI Demonstration and Nutrient Reduction Projects — Nine grants totaling more than $13.9 million were awarded to Ohio. Highlights include: installation of the first two saturated buffers installed in Ohio; installation of approximately 70 controlled drainage structures; development of 52 whole farm conservation plans; planting of more than 9,000 acres of cover crops; installation and planting of 50 acres of reconstructed or restored wetlands; restoration of 3,500 linear feet of stream and 500 feet of streambank stabilization; installation of 4,400 feet of two-stage ditches; installation of rain gardens and vegetated infiltration basins in the Toledo area; and completion of 29 storm water, wetland and stream restoration projects in Cuyahoga County.
- 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[5]; 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.
- Ohio Senate Bill 150 — This bill, effective Aug. 21, 2014, requires, among other things, that beginning Sept. 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.
- Ohio HB 64 — This bill, effective June 30, 2015, required 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 *legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-64*.
- 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.
- 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.
- 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 several recommendations to be implemented during the next several years. For example,

[5] "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.

the report recommends ways for farmers to better manage fertilizers and animal manure and 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 *agri.ohio.gov/topnews/waterquality/docs/FINAL_REPORT_03-09-12.pdf.*

- 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 *lakeerie.ohio.gov/Portals/0/Reports/Task_Force_Report_October_2013.pdf.*
- 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 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 *epa.ohio.gov/portals/35/documents/point_source_workgroup_report.pdf.*

J4. Summary of Results

The consolidated results of the 2018 analysis are shown in Table J-4 and Figure J-7 — Summary of 2018 IR results for watershed AUs by beneficial use. through Figure J-9.

Table J-4 — Summary of results for each beneficial use[6]

	Human Health (fish tissue)	Recreation	Aquatic Life	Public Drinking Water Supply
Watershed assessment units				
Not being used for PDWS	0	0	0	1434
Attains	230	157	500	31
Unknown	872	186	109	39
Impaired, needs TMDL	436	750	411	33
Impaired, TMDL complete	0	445	408	1
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	14	0
Impaired, natural condition	0	0	96	0
Total watersheds considered	**1538**	**1538**	**1538**	**1538**
Large river assessment units				
Not being used for PDWS	0	0	0	29
Attains	6	3	18	0
Unknown	0	3	0	4
Impaired, needs TMDL	32	26	12	5
Impaired, TMDL complete	0	6	5	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	3	0
Impaired, natural condition	0	0	0	0
Total large rivers considered	**38**	**38**	**38**	**38**
Lake Erie assessment units				
Not being used for PDWS	0	0	0	1
Attains	0	0	0	0
Unknown	3	2	3	0
Impaired, needs TMDL	4	5	4	6
Impaired, TMDL complete	0	0	0	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	0	0
Impaired, natural condition	0	0	0	0
Total Lake Erie considered	**7**	**7**	**7**	**7**

[6] 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.

Summary Tables of Waterbody Conditions; Lists of Prioritized Impaired Waters; and Monitoring and TMDL Schedules

Section L contains tables showing the 303(d) listing details for each of the assessment unit types and is divided into five sections as follows:

- Section L1: Status of Watershed Assessment Units
- Section L2: Status of Large River Assessment Units
- Section L3: Status of Lake Erie Assessment Units
- Section L4: Section 303(d) List of Prioritized Impaired Waters
- Section L5: Category 4B demonstrations contained in approved Ohio TMDLs to date

In Sections L1 through L4, there are four columns labeled, in order, Human Health, Recreation, Aquatic Life and PDW Supply. These four columns represent each beneficial use included in the 303(d) list of impaired waters and the numbers in the columns represent the category for that assessment unit for that beneficial use. Table L-1 defines the categories and subcategories assigned to each use.

Table L-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[1]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[2] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[3]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

[1] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[2] HUC means hydrologic unit code.
[3] Ohio currently has no waters that are listed under this subcategory.

05090202 90 02	Little Miami River Mainstem (O'Bannon Creek to Ohio River)	1757	5	4Ah	5	0	4

Section L3. Status of Lake Erie Assessment Units							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
041202000101	Lake Erie Islands Shoreline (≤3m)	4.99	5	5	5	5	14
041202000201	Lake Erie Western Basin Shoreline (≤3m)	47.88	5	5	5	5	17
041202000202	Lake Erie Sandusky Basin Shoreline (≤3m)	68.01	5	5	5	5	16
041202000203	Lake Erie Central Basin Shoreline (≤3m)	13.39	5	5	5	0	9
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
041202000302	Lake Erie Sandusky Basin Open Water (>3m)	361.71	3i	3	3	5	5
041202000303	Lake Erie Central Basin Open Water (>3m)	2544.98	3i	3	3	5	5

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 37 of 38. PageID #: 9510

ED_002091_00003444-00064

Section L4. Section 303(d) List of Prioritized Impaired Waters							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
041202000201	Lake Erie Western Basin Shoreline (<=3m)	47.88	5	5	5	5	17
04100009 90 02	Maumee River Mainstem (Beaver Creek to Maumee Bay)	6608	5	5h	5	5	16
041202000202	Lake Erie Sandusky Basin Shoreline (<=3m)	68.01	5	5	5	5	16
04100009 90 01	Maumee River Mainstem (Tiffin River to Beaver Creek)	6058	5	5h	5	5	15
05030103 08 06	Burgess Run-Yellow Creek	20.19	5h	5h	5	5	15
041202000101	Lake Erie Islands Shoreline (<=3m)	4.99	5	5	5	5	14
04100005 90 01	Maumee River Mainstem (IN border to Tiffin River)	2315	5	5h	1	5	13
04100007 12 06	Big Run-Flatrock Creek	48.28	5	5h	5	1	12
05040003 03 04	Delano Run-Kokosing River	32.95	5	5h	5	0	12
05060001 04 06	Glade Run-Scioto River	38.34	5h	5h	5	3i	12
05060001 06 02	Middle Mill Creek	59.91	3	5h	5d	5	12
05090202 10 05	West Fork East Fork Little Miami River	28.88	1h	5h	5	5	12
05030103 90 01	Mahoning River Mainstem (Eagle Creek to Pennsylvania Border)	1075	5	5h	5	0	11
05080002 90 02	Great Miami River Mainstem (Four Mile Creek to Ohio River)	5371	5	5h	5	0	11
04100006 03 03	Flat Run-Tiffin River	33.17	5	5h	5	3i	11
04100007 06 04	Dry Fork-Little Auglaize River	57.07	1	5h	1	5	11
04110002 02 03	Lake Rockwell-Cuyahoga River	61.33	5	5	4Ah	5	11
05060001 90 02	Scioto River Mainstem (Olentangy River to Big Darby Creek)	2641	5	5h	5	0	10
05080001 90 01	Great Miami River Mainstem (Tawawa Creek to Mad River)	1853	5	5h	5	3i	10
04100003 02 04	West Branch St Joseph River	14.76	5	5h	5	0	10
04100004 02 05	Prairie Creek-St Marys River	42.22	5	5h	5	0	10
04100004 03 03	Yankee Run-St Marys River	59.44	5	5h	5	0	10
04100006 05 02	Brush Creek	66.01	5h	5h	5	0	10
04100012 02 04	Mouth Vermilion River	28.13	5	5h	5h	1	10
04110003 01 05	Lower Ashtabula River	18.27	5	5h	5	0	10
05030103 08 05	Headwaters Yellow Creek	19.36	3	5h	5	5	10
05080002 07 04	Dicks Creek	27.71	5h	5h	5	0	10
05090202 02 06	Shawnee Creek-Little Miami River	32.07	5h	5h	5d	0	10
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
05060001 90 01	Scioto River Mainstem (L. Scioto R. to Olentangy R.); excluding O'Shaughnessy and Griggs reservoirs	1068	5	3i	5	5	9
04100001 03 07	Heldman Ditch-Ottawa River	28.15	5	5h	5	0	9
04100003 03 03	Eagle Creek	35.00	5h	5h	5	0	9
04100004 01 02	Center Branch St Marys River	29.00	5h	5h	5	0	9
04100004 02 04	Twelvemile Creek	23.58	5h	5h	5	0	9
04100009 06 03	Haskins Road Ditch-Maumee River	15.73	3	5h	1	5	9
04100011 12 03	Green Creek	30.78	1	5h	4A	5	9
04110001 01 08	Baker Creek-West Branch Rocky River	26.08	5	5h	5	0	9

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 38 of 38. PageID #: 9511

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

INTRODUCTION AND SUMMARY

Defendants oppose Plaintiffs' Motion for Leave to File Supplemental Complaint, Doc. 36, because both of Plaintiffs' proposed supplemental counts fail to state a claim upon which relief may be granted. First, both counts seek to challenge EPA's approval of Ohio's 2016 list of impaired waters, but EPA's July 9, 2018, approval of Ohio's 2018 list supersedes the 2016 list and moots Plaintiffs' claims. Second, Plaintiffs' proposed supplemental count one, a claim under the Administrative Procedure Act ("APA"), fails to state a claim because Plaintiffs fail to identify a final agency action. Although EPA's approval of Ohio's 2016 list is a final agency action as to the listing of impaired waters, Plaintiffs are not challenging that decision. Instead, Plaintiffs argue that Ohio decided it would never submit a total maximum daily load ("TMDL") for western Lake Erie and argue that EPA approved that purported "no TMDL" decision. In fact, Ohio made no such decision, nor did EPA. Third, Plaintiffs' proposed supplemental count two, pled in the alternative as a violation of a nondiscretionary duty, fails to state a claim because it, too, rests of the false premise that

Ohio decided it would never submit a TMDL for western Lake Erie. Because Ohio has not "constructively submitted" no TMDL for western Lake Erie, any statutory duty to review that "constructive submission," should such a duty exist, has not been triggered.

EPA further cross-moves for summary judgment on the existing Complaint, which challenges an action – EPA's May 19, 2017, approval of Ohio's 2016 Section 303(d) List absent the inclusion of the open waters of Lake Erie – that has long since been reversed through subsequent action by EPA and the State and is therefore completely moot.

BACKGROUND

A. Statutory and Regulatory Background

As part of the Clean Water Act's ("CWA") cooperative state/federal framework for addressing water quality, each state must identify waters within its boundaries for which existing pollution controls are not stringent enough to meet applicable water quality standards. 33 U.S.C. § 1313(d)(1). Such waters are known as "water quality limited segments" pursuant to 40 C.F.R. § 130.2(j) or colloquially as "impaired

waters." Every two years, a state must submit a list of water quality limited segments still requiring TMDLs. 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(d)(1). Because the list is required by Section 303(d) of the CWA, 33 U.S.C. § 1313(d), it is commonly referred to as the "Section 303(d) list."

Each state must establish a priority ranking for the water quality limited segments on its Section 303(d) list, taking into account the severity of pollution and the uses to be made of those waters. 33 U.S.C. § 1313(d)(1)(A). States must also identify among those waters which ones are targeted for TMDLs within the next two years. 40 C.F.R. § 130.7(b), (d). States are required to establish TMDLs for each water quality limited segment on their Section 303(d) lists, in accordance with the priority ranking. 33 U.S.C. § 1313(d)(1)(C); 40 C.F.R. § 130.7(c)(1). TMDLs are plans that set the quantity of a pollutant that may be introduced into a receiving water without exceeding applicable water quality standards, taking into account seasonal variations and an adequate margin of safety. 33 U.S.C. § 1313(d)(1)(C). Calculations to establish TMDLs are subject to public review. 40 C.F.R. §

130.7(c)(1)(ii).

Ohio, like many states, combines its Section 303(d) list with a water quality report and submits both together as an "integrated report." In *Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017), the court erroneously stated that states identify their impaired waters *and* establish their TMDLs by submitting these integrated reports. 266 F. Supp. 3d at 176.[1] That misreads the statute, regulations, and EPA's guidance. Section 303(d) lists and integrated reports on the one hand, and TMDLs on the other, are distinct and very different documents and actions. Section 1313(d)(1)(A) requires states to "identify" impaired waters; section 1313(d)(1)(C) then requires states to "establish" for those identified waters a TMDL.

EPA regulations carry forward this distinction. In 40 C.F.R. § 130.7, subsection (b) addresses the "identification and priority setting for water quality-limited segments still requiring TMDLs," *i.e.*, the Section 303(d) list, while subsection (c) addresses the TMDLs

[1] *See also* April 11, 2018, Order, Doc. 29 at 8.

themselves. Thus, while an integrated report typically contains the Section 303(d) list, including a priority ranking of water quality limited segments still requiring TMDLs and the state's schedule for which TMDLs will be developed over the next two years, the TMDLs themselves are not part of the integrated report (or the Section 303(d) list), nor are they typically submitted with that report.

The timing provisions for Section 303(d) lists and for TMDLs are also distinct. The statute sets a deadline for the initial list of "waters identified" and the initial "loads established" based on when EPA first identifies relevant pollutants under Section 304(a)(2)(D) of the Act, but otherwise Section 303(d) lists and TMDLs are due "from time to time" under the statute. 33 U.S.C. § 1313(d)(2). EPA regulations require states to submit Section 303(d) lists every two years, but there is no similar regulatory deadline for states to submit additional TMDLs. 40 C.F.R. § 130.7(d)(1). Instead, TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." *Id.* There is no statutory or regulatory timeframe, deadline, or other restriction on

the timing for states to submit TMDLs, or for states and EPA to determine schedules.

Therefore, as explained by longstanding EPA guidance, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, at 63 (July 29, 2005) ("2006 Assessment Guidance"), available at https://www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf.[2] This guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57. EPA has also explained that "[i]n some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the

[2] The 2006 Assessment Guidance focuses on how to assess, categorize, and report on water quality attainment and supporting data and information. 2006 Assessment Guidance at 6. It does not address how to develop or submit TMDLs.

applicable standard is met)." *Id.*

Once a state submits a Section 303(d) list, or a TMDL, EPA must approve or disapprove the submission within 30 days. 33 U.S.C. § 1313(d)(2). If EPA disapproves a Section 303(d) list, EPA must identify the water quality limited segments that should be on the list, and must do so within 30 days after the date of disapproval. *Id.* EPA must then "promptly issue a public notice" and take comment on the water quality limited segments so identified. 40 C.F.R. § 130.7(d)(2). Finally, after considering the comments received, EPA must then make any appropriate revisions to the list. Similarly, if EPA disapproves a state TMDL, EPA must establish its own TMDL within 30 days after EPA's disapproval. *Id.*

If EPA approves a Section 303(d) list or disapproves a list and identifies waters for the state or approves or disapproves a TMDL that has been publicly noticed, those actions are final agency actions that an interested party may challenge under the Administrative Procedure Act. If EPA fails to act, an interested party can sue EPA for its failure to perform "any act or duty under this chapter which is not

discretionary with [EPA]." 33 U.S.C. § 1365(a)(2). However, no such action may be commenced "prior to sixty days after the plaintiff has given notice of such action to the Administrator [of EPA]." *Id.* § 1365(b)(2). EPA's regulations specify the form and content of the required notice. *See, e.g.*, 40 C.F.R. § 135.2(a)(3) (notice must be accomplished by certified mail and sent to specific recipients); 40 C.F.R. § 135.3(b) (notice must identify the statutory provision which requires the nondiscretionary action and describe with "reasonable specificity" the action taken or not taken).

B. Factual Background

Ohio submitted its 2016 integrated report (including its 2016 Section 303(d) list) on October 20, 2016. EPA approved Ohio's 2016 Section 303(d) list on May 19, 2017, but withdrew that approval on January 12, 2018. Ohio supplemented its 2016 Section 303(d) list on May 4, 2018, and EPA approved that amendment on May 10, 2018.

On June 1, 2018, Ohio submitted its 2018 integrated report (and 2018 Section 303(d) list), and on July 9, 2018, EPA approved Ohio's 2018 Section 303(d) list. In both the 2016 Section 303(d) list (as

amended and approved in May 2018) and the 2018 Section 303(d) list, Ohio listed as impaired three assessment units for the open waters of Lake Erie: the Western Basin, the Sandusky Bay area, and the Central Basin. These open water assessment units are in addition to several shoreline assessment units, including public drinking water supply intake zones, that are also identified in both reports as impaired.

ARGUMENT

Although leave to supplement a pleading "shall be freely given when justice so requires," a motion to supplement under Fed. R. Civ. P 15 should be denied if the amendment would be futile, *i.e.*, if the amendment "could not withstand a Rule 12(b)(6) motion to dismiss." *Riverview Health Institute LLC v. Medical Mutual of Ohio*, 601 F.3d 505, 520 (6th Cir. 2010) (internal citations and quotations omitted). Because neither of the proposed additional counts state a claim on which relief may be granted, the amendment would be futile and should be denied.

I. Both of Plaintiffs' Proposed New Counts Are Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Both of Plaintiffs' proposed counts fail to state a claim because

they challenge EPA's approval of Ohio's 2016 Section 303(d) list, but that list (and EPA's approval thereof) has been superseded by the 2018 list (and EPA's approval thereof). In *Blue Water Baltimore*, 266 F. Supp. 3d at 180-181, the court found that EPA's approval of a state's 2014 303(d) list superseded its approval of the preceding 2012 303(d) list, thus mooting plaintiffs' challenge to EPA's approval of the 2012 list. This Court should do the same, and hold that Ohio's 2018 Section 303(d) list, once approved by EPA, supersedes Ohio's 2016 list and moots Plaintiffs' challenges to EPA's approval of the 2016 list.

II. Plaintiffs' Proposed Count One Does Not Challenge a Final Agency Action Reviewable Under the APA.

As this Court has explained, to be "final," an agency action must mark the consummation of the agency's decisionmaking process and must determine rights or obligations from which legal consequences will flow. April 11, 2018, Order, Doc. 29, at 20-21.

EPA's approval of Ohio's 2016 Section 303(d) list, as amended, is certainly final agency action with respect to the actual listing of impaired waters, which is the subject of Plaintiffs' original complaint. However, EPA did not take any final agency action with respect to what

Plaintiffs now seek to challenge: Ohio's purported decision refusing to develop a TMDL for western Lake Erie. Contrary to Plaintiffs' arguments, there is no final agency action regarding that, for two reasons.

First, the factual predicate for Plaintiffs' argument is expressly contradicted by the one, and only, source of information on which Plaintiffs rely: Ohio's amended 2016 Section 303(d) list. Plaintiffs assert that "in that submission," *i.e.*, the amended 2016 Section 303(d) list, Ohio "refused to develop and establish a [TMDL] for the phosphorus pollution" in western Lake Erie. Pl. Mot. at 1. *See also* Pl. Mem. at 1 ("in the same submission," *i.e.*, the amended 2016 Section 303(d) list, "Ohio EPA stated that it would not develop a TMDL to address the harmful algal bloom problem.") *See also* proposed First Suppl. Compl. ¶ 18 (citing the amended 2016 list at 9, "Ohio EPA has flatly stated that it would not move forward with the development of a TMDL."); *id.* ¶ 77 (citing the amended 2016 list at 9, "Ohio EPA specifically indicated it would *not* develop a TMDL for western Lake Erie"); *id.* ¶¶ 92-93 ("in its May 4, 2018, submission," "Ohio EPA . . . has

definitively stated it will not develop a TMDL").

What Ohio EPA actually said is worth quoting in full:

> Given the complexity of the algae bloom problem, Ohio believes the best approach for solving the issues in western Lake Erie is through the collaborative process established under Annex 4 of the Great Lakes Water Quality Agreement and the Domestic Action Plans as they afford a holistic, multi-jurisdictional perspective that does not exist in a traditional TMDL process. If the current collaborative processes fail to restore the designated use attainment *we recognize that a TMDL or other approach allowed by the USEPA to address impaired waters under the CWA will ultimately be required.*

2016 Integrated Report Amendment at 9 (emphasis added).

This is not a situation where the Court must resolve an ambiguity or draw an inference. The only support offered for the key assertion underlying Plaintiffs' position in fact says the opposite of what Plaintiffs claim. Ohio has neither abandoned its obligation to produce a TMDL for western Lake Erie, nor has Ohio refused to develop a TMDL. Without this factual predicate of an express refusal to develop a TMDL, there can be no EPA action approving the alleged state refusal, as there is no refusal to approve or disapprove.

Second, even if the Court were to ignore Ohio's recognition that it might in the future develop a TMDL, and find Plaintiffs' assertion that

the lack of a current TMDL submission necessarily constitutes a refusal to do so, Plaintiffs' proposed count one is still futile because there was no final agency action regarding the purported "no TMDL" statement.

In its approval letter, EPA noted that the amended Section 303(d) list "discusses how Ohio will continue to address nutrient loadings to Lake Erie." Letter from Cathy Stepp, Regional Administrator, to Tiffani Kavalec, Chief, Division of Surface Water, Ohio EPA, May 10, 2018, at 1-2. But EPA's letter goes on to state that EPA finds that Ohio EPA's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking" under 40 C.F.R. § 130.7(b)(4). *Id.* at 2.

When EPA reviews a state's Section 303(d) list, the agency simply confirms that the state has included a priority ranking that, consistent with EPA's regulations, "tak[es] into account the severity of the pollution and uses to be made of such waters." 40 C.F.R. § 130.7(b)(4). *See* 2006 Assessment Guidance, at 63 ("EPA will review the priority ranking but will not take action to approve or disapprove it."). EPA does not weigh the relative merits of the state's ranking, and the

statute "provides no specific mechanism for reviewing this prioritization." *Sierra Club v. McLerran*, No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015). EPA's acknowledgement that Ohio did prioritize the impaired waters of Lake Erie (which Plaintiffs do not challenge) does not itself represent either the consummation of EPA's decisionmaking on whether Ohio has abandoned its obligation to produce a TMDL or represent a conclusion that determines rights or obligations or has legal consequences. In fact, Plaintiffs themselves note that EPA did not "even mention[] the State of Ohio's failure to comply with its TMDL responsibilities." Pl. Mem. at 2. Contrary to Plaintiffs' assertions, EPA's lack of reference to the absence of a submission that Ohio did not yet have any obligation to provide is not surprising. Instead, EPA simply recognized what Ohio EPA did: the state included the segments on its list of impaired waters impaired "still requiring TMDLs", 40 C.F.R. § 130.7(b)(2), and assigned a prioritization to the open waters of western Lake Erie.

Plaintiffs rely heavily on the *McLerran* case, arguing that it refutes Ohio's approach. But *McLerran* involved materially different

facts. Instead of a Section 303(d) list, in *McLerran* the state developed a draft TMDL, but finalized the document as a "Strategy" which involved the creation of a task force, and stated that it "is not currently planning to develop" a TMDL. 2015 WL 1188522 at *3. Sierra Club requested EPA to determine whether the state had abandoned the TMDL, and EPA concluded the state had not, and that the strategy and task force were "an acceptable alternative to a TMDL." *Id.* *4. The court agreed with EPA that the state had not abandoned the TMDL – a point to which we will return in the discussion of Plaintiffs' proposed count two – but found under the APA that EPA's approval of the task force was arbitrary. *Id.* *10. This separate approval document, issued in response to a specific request to determine whether a state had abandoned a specific TMDL, is materially different than the general statement at issue here, in the different context of EPA's approval of a Section 303(d) list of impaired waters. Unlike in *McLerran*, EPA's acknowledgement that Ohio's 303(d) list "discusses how Ohio will continue to address nutrient loadings to Lake Erie" is not an explicit decision on the precise question of abandonment, and is therefore not a

final agency action. The fact is that Ohio was not obligated to submit a TMDL simultaneously with its submission of its Section 303(d) list and thus EPA had no need to approve or reject that non-submission.

Because Plaintiffs cannot support their assertion that Ohio decided it will not develop any TMDL for western Lake Erie, and because EPA has not taken any final agency action regarding Ohio's statement that a TMDL "will ultimately be required," Plaintiffs' proposed count one fails to state a claim and allowing Plaintiffs to supplement the complaint would be futile.

III. Plaintiffs' Proposed Count Two Does Not Identify A Nondiscretionary Duty.

Plaintiffs' proposed count two asserts that EPA violated a nondiscretionary duty to act within 30 days because Ohio EPA allegedly decided "not to undertake development of a TMDL for western Lake Erie." Proposed Supplemental Compl. ¶ 103.

Plaintiffs' motion to add their proposed count two should be denied for their failure to follow the required process. As EPA has previously explained, such a claim requires 60-day statutory notice before filing suit, 33 U.S.C. § 1365(b)(2): this requirement cannot be

waived. Plaintiffs did not provide the requisite notice.

Even if Plaintiff had somehow satisfied that requirement, Plaintiffs' proposed count two still fails to state a claim. In their motion, Plaintiffs explain that they seek to include their proposed count two "as a protective measure" in the event that there is no final agency action "regarding Ohio EPA's decision not to submit a TMDL." Pl. Mem. at 11 n.1. Plaintiffs' proposed count two assumes no final agency action by EPA and is therefore based on the same faulty reading of Ohio's amended 2016 Section 303(d) list by assuming that a TMDL must be submitted with a 303(d) list.

Plaintiffs argue that some courts have found that a state's decision not to submit a TMDL is a "constructive submission" of "no TMDL," thereby triggering EPA's nondiscretionary duty to approve or disapprove of that "constructive submission." *See, e.g.*, Proposed Supplemental Compl. ¶ 104. For example, in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984), the court found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure may amount to the 'constructive submission' by that state of no TMDL's

[sic]." *Id.* The long passage of time – six years, in that case – "raises the possibility that the states have determined that TMDL's for Lake Michigan are unnecessary." *Id.* at 997.

Like *Scott*, most courts that have applied the constructive submission theory have looked at a state's entire TMDL program. *See, e.g., Ohio Valley Envir. Coal. v. Pruitt,* No. 17-1430, 2018 WL 3039954 (4th Cir., June 20, 2018) (in light of West Virginia's good faith efforts, "we cannot conclude that West Virginia has 'clearly and unambiguously' refused to submit TMDLs"). Plaintiffs do not assert that Ohio has failed to submit any TMDLs, but instead point to the only court decision that has considered whether a state could trigger a constructive submission by refusing to submit a single, particular TMDL: *McLerran*. That decision held that "a state's failure to prepare a particular TMDL [can] ripen into a constructive submission." 2015 WL 1188522 at *7. However, as noted above, *McLerran* found that the State of Washington had not constructively submitted no TMDL, because there were "information gaps . . . such that [the state] could not confidently issue a TMDL at any point in the near future." *Id.* at *8. In particular, the

court noted that the state "lacked sufficient scientific data and had not satisfied certain pre-submission requirements, *i.e.*, public notice and consultation." *Id.* In contrast, if a TMDL were "essentially complete and ready for submission, a last-minute pivot to an illusory alternative may indicate a decision to abandon the TMDL." *Id.*

Here, Ohio has only recently listed western Lake Erie as impaired, and Plaintiffs do not, and cannot, contend that Ohio has already developed the scientific data necessary for a TMDL, much less that Ohio has completed the required public notice requirements. Thus, even if the Court were to accept the constructive submission theory and the *McLerran* court's extension of that theory to a single TMDL, Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.

IV. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

As noted in Defendants' May 11, 2018, Status Report, Doc. 30 at 2, EPA's May 10, 2018, action approving Ohio's Section 2016 303(d) list, as amended, moots Plaintiffs' claims as pled in Plaintiffs' original complaint, to the extent the Court has jurisdiction over those claims.

See April 11, 2018, Order (Doc. 29) at 24 n.15 (citing *Anacostia Riverkeeper, Inc. v. Jackson*, 713 F. Supp.2d 50, 51 n.1 (D.D.C. 2010)). If the Court denies Plaintiffs' motion to supplement the complaint, nothing is left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should deny Plaintiffs' motion to file a supplemental complaint because neither of Plaintiffs' proposed supplemental counts state a claim upon which relief may be granted, and should grant Defendants' cross motion for summary judgment and terminate the case because EPA's approval of Ohio's amended 2016 Section 303(d) list moots Plaintiffs' original claims.

Respectfully submitted this 10th day of July 2018.

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CERTIFICATE OF SERVICE

I hereby certify that on July 10, 2018, I electronically filed the foregoing MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
Daniel R. Dertke

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

TABLE OF CONTENTS

TABLE OF AUTHORITIES ii

INTRODUCTION AND SUMMARY 1

BACKGROUND 2

ARGUMENT 5

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie 5

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act On Ohio's Plans To Address Nutrient Pollution in Lake Erie 12

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List 13

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie 16

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment 19

CONCLUSION 20

ED_002091_00003501-00002

TABLE OF AUTHORITIES

CASES

Blue Water Baltimore v. Pruitt,
266 F. Supp. 3d 174, 180-81 (D.D.C. 2017),
judgment amended, 293 F. Supp. 3d 1 (D.D.C. 2017) 14

Ohio Valley Envtl. Coalition, Inc. v. Pruitt,
893 F.3d 225 (4th Cir. 2018) 5, 6, 7

San Francisco Baykeeper v. Whitman,
297 F.3d 877 (9th Cir. 2002) 6, 11

Scott v. Hammond,
741 F.2d 992 (7th Cir. 1984) 6, 7, 11, 12

Sierra Club v. McLerran,
No. 11-cv-1759, 2015 WL 1188522
(W.D. Wash., March 16, 2015) 7, 8, 9, 10, 17, 18

STATUTES

33 U.S.C. § 1313(d)(2) 3, 6

33 U.S.C. § 1314(a)(2)(D) 3

CODE OF FEDERAL REGULATIONS

40 C.F.R. § 130.7(b)(4) 4, 17

40 C.F.R. § 130.7(d)(1) 3

FEDERAL REGISTER

57 Fed. Reg. 33,040 (July 24, 1992) 5

LEGISLATIVE HISTORY

H. R. Rep. No. 92-911 (1972) 4

INTRODUCTION AND SUMMARY

The two motions before the Court essentially ask whether Ohio has made a "constructive submission" of no TMDL for nutrient pollution in the open waters of western Lake Erie. Plaintiffs' two new proposed claims assert that Ohio has not yet begun a TMDL for the lake's open waters, but Plaintiffs have not and cannot credibly assert that Ohio has clearly and unambiguously refused to ***ever*** prepare such a TMDL, and that makes all the difference. Ohio has not refused to prepare a TMDL for the western basin of Lake Erie and indeed expressly recognizes that a TMDL is needed and may be developed in the future. Therefore, even under the most expansive expressions of the so-called constructive submission theory articulated in *McLerran* and the other cases Plaintiffs cite, Plaintiffs' proposed Count Two fails to assert the facts necessary to state a claim that Ohio has constructively submitted no TMDL.

Plaintiffs also assert that when EPA approved Ohio's 2016 Section 303(d) list of impaired waters, EPA also approved certain statements Ohio made in its 2016 Integrated Report. Although EPA certainly

acknowledged Ohio's statements regarding the State's plans to address nutrient pollution in the lake's open waters, EPA neither approved nor disapproved them. Instead, EPA followed its regulations, which require EPA to approve or disapprove of the actual list of impaired waters still requiring TMDLs and the inclusion of priority rankings, *i.e.*, Ohio's Section 303(d) list. EPA has no formal role in reviewing the other parts of a state's Integrated Report. Plaintiffs' proposed Count One therefore fails to state a claim because Plaintiffs cannot point to any judicially reviewable final agency action regarding Ohio's plans to reduce nutrient pollution.

Finally, even if the Court finds that EPA did take final agency action regarding Ohio's plans, EPA's approval of Ohio's 2018 Section 303(d) list supersedes its approval of Ohio's 2016 list, which moots Plaintiffs' claim.

BACKGROUND

As we explained in our opening memorandum, ECF No. 39, the CWA sets a deadline for states to submit their initial TMDLs and Section 303(d) lists based on when EPA first identifies relevant

pollutants under 33 U.S.C. § 1314(a)(2)(D). After that, the statute requires states to submit subsequent Section 303(d) lists and TMDLs "from time to time." 33 U.S.C. § 1313(d)(2). While EPA's regulations specify that states must submit Section 303(d) lists every two years, *see* 40 C.F.R. § 130.7(d)(1), there is no similar regulatory requirement for TMDLs. Nor is there any requirement for states to submit additional TMDLs with their Section 303(d) list or as part of an integrated report. Instead, EPA's regulations simply provide that TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." 40 C.F.R. § 130.7(d)(1). Thus, there is no firm statutory or regulatory timeframe, deadline, or other restriction on the timing for states to submit TMDLs.

Nor is there any requirement for a state to begin work on a TMDL as soon as a water quality limited segment is listed as impaired. Plaintiffs argue that because Ohio has not yet started work on a nutrient TMDL, Ohio is not complying with a statutory requirement "to promulgate a [TMDL]." Pl. Combined Memo (ECF No. 40) at 1; *see also*

id. at 3 (asserting Ohio's "refusal to begin the TMDL process" is "illegal"). But in assembling their Section 303(d) lists, states must identify "waters targeted for TMDL development in the next two years," which allows waters to remain on a state's list for *more* than 2 years before waters are "targeted for TMDLs development." 40 C.F.R. § 130.7(b)(4). And as explained by longstanding EPA guidance interpreting the statutory and regulatory framework, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* at 63 (July 29, 2005) ("2006 Assessment Guidance") (relevant excerpts attached as Exhibit 1).

There is good reason for this flexibility because, as Congress understood when it enacted the TMDL program into law, "it is extremely difficult to apportion the discharge load from all point sources along a waterway or section of a waterway." H. R. Rep. No. 92-911, at 105-06 (1972). This is especially true of "'complex' TMDLs that may cover a large watershed or address particularly challenging pollution

problems," as opposed to comparatively "routine or 'simple' TMDLs that may be developed as part of an NPDES permit reissuance." Surface Water Toxics Control Program and Water Quality Planning and Management Program, 57 Fed. Reg. 33,040, 33,044 (July 24, 1992). For those TMDLs that require "complex analysis," it is appropriate to "allow time to collect necessary information and complete the analysis." 2006 Assessment Guidance at 63; *see also Ohio Valley Envtl. Coalition, Inc. v. Pruitt*, 893 F.3d 225, 231 n.4 (4th Cir. 2018) ("TMDLs may require substantial time and resources to develop."). The same guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57.

ARGUMENT

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie.

Plaintiffs repeatedly argue that Ohio has refused to begin the TMDL process for the open waters of western Lake Erie. *See, e.g.*, Pl. Combined Memo at 2, 3, 4, 5, 6. But, as explained below, the relevant legal question is whether Ohio has "'clearly and unambiguously'"

indicate[d] that it will not 'submit any TMDLs and has no plans to remedy this situation.'" *Ohio Valley Envir. Coal.,* 893 F.3d at 230 (quoting *S.F. Baykeeper v. Whitman*, 297 F.3d 877, 882 (9th Cir. 2002)). Plaintiffs have not and cannot point to any statement, action, or inaction by Ohio that clearly and unambiguously shows that Ohio will never prepare a TMDL for nutrient pollution in the open waters of western Lake Erie.

Plaintiffs rely on the constructive submission theory, which began in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984). In *Scott*, the State of Illinois had failed to submit any TMDLs, not even the initial ones for which the CWA does impose a deadline. However, the CWA does not provide a cause of action to sue a state if a state fails to submit a TMDL, so the plaintiffs in *Scott* sued EPA. EPA argued that once a state submits a TMDL, EPA must approve or disapprove the submission within 30 days, under 33 U.S.C. § 1313(d)(2), but if a state does not submit anything, EPA has no statutory duty to act. 741 F.2d. at 997-98. The Seventh Circuit found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure

. . . raises the possibility that the states have determined that [TMDLs] . . . are unnecessary." *Id.* at 997.

Almost every court which has adopted the legal fiction of a constructive submission has examined whether a state has abdicated its TMDL program statewide. *See Ohio Valley Envir. Coal.,* 893 F.3d at 229-30 (collecting cases). In a recent decision, the Fourth Circuit Court of Appeals reviewed the constructive submission caselaw and observed that courts "have declined to find a 'constructive submission' of no TMDLs where a state (1) has produced at least some TMDLs and (2) has a credible plan in place to produce others." *Id.* Plaintiffs do not, and cannot, allege that Ohio has failed either of those prongs, let alone both of them.

Plaintiffs instead argue that Ohio has constructively refused to submit a particular TMDL. Only one court, *Sierra Club v. McLerran,* No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015), has indicated that a state like Ohio, with an otherwise robust TMDL program, can nonetheless trigger a constructive submission. No court in this Circuit has adopted the constructive submission theory, much

less *McLerran*'s unprecedented extension of it, and the Court should not do so now. But even if the Court were to adopt the theory, and to take the additional step of following *McLerran*, not even that case supports Plaintiffs' attempt to state a constructive submission claim.

In *McLerran*, the court considered a citizen suit to compel EPA to disapprove the State of Washington's alleged constructive submission of no TMDLs for PCBs in the Spokane River. Although the court went beyond the constructive submission theory as articulated by the Fourth and Seventh Circuits, and other courts, to conclude there could be a constructive submission of no TMDL when a state "clearly and unambiguously indicate[s] that it will not produce a particular TMDL," the court actually held that such a situation had not occurred, even though the Spokane River was first listed for PCBs in 1996. *Id.* at *2, 7-9. In the court's view, where "information gaps persisted such that [the state] could not confidently issue a TMDL at any point in the near future, adopting an alternative may, under some circumstances, represent a reasonable interim measure rather than an abandonment of any future plans to prepare a TMDL." *Id.* at *8.

Assuming for the sake of argument that the Court agrees with *McLerran*'s view of the constructive submission theory, Plaintiffs have not alleged the specific facts necessary to meet *McLerran*'s standard. Ohio's 2018 Integrated Report explains "why a TMDL is not being pursued *immediately*," Ohio 2018 Integrated Water Quality Monitoring and Assessment Report ("2018 Integrated Report") (relevant excerpts attached as Exhibit 2) at D-31 (emphasis added). Ohio also lists most of the lake's assessment units as "Impaired, needs TMDL." *Id.* at J-16. As in *McLerran*, the State has not "abandon[ed] any future plans" to produce a TMDL for the open waters and Plaintiffs have alleged no specific facts to the contrary.

Plaintiffs also claim that Ohio is merely giving "lip service to the idea that it may establish a TMDL at some undetermined future time," Pl. Combined Memo at 1, but Plaintiffs have absolutely no support for that statement, and certainly nothing to show that the State has "clearly and unambiguously *abandoned* its obligation to produce a TMDL." *McLerran*, 2015 WL 1188522, at *7 (emphasis in original). Ohio's 2018 Integrated Report explains in detail the efforts Ohio is

making to address nutrients in Lake Erie. 2018 Integrated Report at J-10. These efforts include the Great Lakes Water Quality Agreement, the Lake Erie Collaborative Agreement, Ohio's Domestic Action Plan for Lake Erie, TMDLs for 22 of the 32 watersheds that feed into the lake, and numerous other nutrient reduction efforts. *Id.* at J-10 to J-15. Plaintiffs have identified nothing in the Clean Water Act that would strip Ohio of its "considerable flexibility" to pursue these nutrient pollution control efforts before developing a TMDL for the western basin of Lake Erie.

Plaintiffs dismiss these efforts out of hand, as simply a means of indefinitely delaying a TMDL, again relying on *McLerran*. Pl. Combined Memo at 1. But *McLerran* cannot save Plaintiffs' constructive submission claim, for two reasons. First, as just explained, the court in *McLerran* found that the State of Washington's exploration of an alternative to a TMDL did *not* amount to a constructive submission of no TMDL. Second, the waterbody in *McLerran* had been on the state's Section 303(d) list for 19 years. 2015 WL 1188522 *10. Here, in contrast, the open waters were first listed this year. While

Plaintiffs may argue that the lake's open waters should have been listed in 2016, they cannot dispute that the obligation to develop a TMDL cannot precede a waterbody's listing as impaired.

If Plaintiffs are allowed to state a claim for a constructive submission by alleging that Ohio has not begun work on a TMDL less than a year after the lake's open waters were listed, the constructive submission theory would be stretched far beyond what any judicial decision, including *McLerran*, has held. It would amount to a rule that a state must begin developing a TMDL as soon as a waterbody is listed. That would upend the states' statutory prioritization process and would go beyond anything that the CWA, EPA's regulations, or the caselaw requires. *Cf. San Francisco Baykeeper v. Whitman*, 297 F.3d 877, 885 (9th Cir. 2002) (Section 303(d) contains no "requirement of simultaneous submission of the list of polluted waters with the TMDL to correct each polluted water"). Such a holding would also effectively place Ohio's water quality program under a proxy conservatorship, something that no court has endorsed, which is precisely why the constructive submission theory has always been predicated on a state's "fail[ure]

over a long period of time to submit" TMDLs required by law. *Scott*, 741 F.2d at 996 (emphasis added).

Instead, Plaintiffs' motion to add their proposed Count Two should be denied because Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.[1]

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

In order for Plaintiffs' proposed Count One to state a claim, Plaintiffs must allege a judicially reviewable final agency action. Plaintiffs argue that the statements Ohio made in its 2016 Integrated Report regarding the State's plans to address nutrient pollution in Lake

[1] Plaintiffs' proposed Count Two suffers from the additional flaw that it only asserts that Ohio's 2016 section 303(d) list is a constructive submission of no TMDL. First Suppl. Compl. ¶¶ 103-104; Pl. Combined Memo at 2, 4, 5. In Argument II we explain why EPA's approval of the 2016 list is not a final agency action with respect to Ohio's nutrient pollution reduction plans and why EPA's approval of Ohio's 2016 list is moot, but a constructive submission argument depends on Ohio's intent, and that should be evaluated based on Ohio's most current statements. In other words, proposed Count Two also fails to state a claim because it fails to assert Ohio's *present* intentions regarding a TMDL for the open waters of western Lake Erie.

Erie amount to a constructive submission for EPA to approve or disapprove, separate and apart from Ohio's 2016 Section 303(d) list of impaired waters. Pl. Combined Memo at 9. Plaintiffs also argue that EPA in fact approved those statements when EPA approved the 2016 list. *Id.*

Plaintiffs' argument presents two problems. First, EPA's approval of Ohio's 2016 list is moot, so if EPA took any reviewable final agency action regarding a constructive submission (which it has not), that final agency action could only be EPA's approval of the 2018 list. Second, even if EPA's approval of the 2016 list is not moot, Ohio's statements regarding its plans to address nutrient pollution in Lake Erie are not a constructive submission of no TMDL, and EPA did not take any final agency action regarding Ohio's statements.

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Like Count Two, Plaintiffs' proposed Count One challenges EPA's approval of Ohio's 2016 Section 303(d) list. Plaintiffs argue that even though EPA has now approved a 2018 list, EPA's approval of the 2016 list is not moot because it is an action that is capable of repetition yet

evading review. Pl. Combined Memo at 7-8. Plaintiffs downplay the mootness argument as a "flurry of procedural claims that amount to nothing," *id.* at 6, but mootness is an essential question of subject matter jurisdiction that a court cannot simply waive aside.

Plaintiffs' challenge to EPA's approval of the 2016 list is moot. *See Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174, 180-81 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017). The plaintiffs in *Blue Water* sought to challenge "the reclassifications in [a] 2012" report, but EPA addressed those reclassifications in "both the 2012 and 2014" reports. 266 F. Supp. 3d at 180-81; *see also id.* (the 2014 report "reiterated the rationale stated in the 2012 [report] regarding the reclassification and de-listings at issue"). The court held that "a decision may be superseded by a subsequent decision based on the same rationale because the subsequent decision replaces the prior decision, rendering it void." *Id.* Just as the 2014 report in *Blue Water* "replace[d] the previous list," *id.*, Ohio's 2018 list replaced its 2016 list, so the 2016 list has "no further legal effect." *Id.*[2] The Court cannot

[2] Plaintiffs add in a footnote that the Court could allow them to amend

order any effective relief with respect to the 2016 list.

Plaintiffs assert that they satisfy the capable of repetition yet evading review exception to mootness. They argue that any legal defect in EPA's approval of the 2016 list is capable of repetition because the approval of the 2018 list "merely duplicates" EPA's prior approval, and that it evades review because it is too short in its duration to litigate. Pl. Combined Memo at 6, 8.

But any reading of Ohio's 2016 submission and EPA's 2016 approval to suggest that Ohio constructively submitted no TMDL by expressly disclaiming any responsibility to develop one, is resoundingly refuted by the 2018 Integrated Report and EPA's 2018 approval. The sole support for Plaintiffs' constructive submission claim – statements taken out of context from Ohio's 2016 Integrated Report and misconstrued as definitive statements that Ohio will never develop a TMDL for the western basin of Lake Erie – are *not* repeated in the 2018

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proposed Count One to address EPA's approval of the 2018 list, as the *Blue Water* court did, Pl. Combined Memo at 9 n.2. EPA agrees that this would resolve any mootness concerns, but that amendment would be futile. As we explain below, when EPA approved Ohio's 2018 list EPA took no action on Ohio's future TMDL plans, so Plaintiffs fail to identify a reviewable final agency action regarding either approval.

Integrated Report. Indeed, as noted *supra* at 9, the 2018 Integrated Report classifies all of the Lake Erie assessment units as "Impaired, needs TMDL." 2018 Integrated Report at J-16. Ohio also wrote that where the nutrient reductions from TMDLs in tributaries to Lake Erie "are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps." *Id.* at J-12. And EPA stated in its 2018 Approval that it "expects that under those circumstances [*i.e.*, the inadequacy of Ohio's current nutrient pollution reduction plans] such 'next steps' *would* include TMDL development for the Lake Erie Assessment Units directly." 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) ("EPA 2018 Approval") (ECF No. 40-1, attached as Exhibit A to Pl. Combined Memo), at 18 (emphasis added); *see also* 2018 Integrated Report at D-31 (recognizing that if the water quality in the western basin fails to improve, "a TMDL may ultimately be required").

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

Even if EPA's approval of Ohio's 2016 list were not moot, EPA's

statements regarding Ohio's plans do not amount to final agency action on whether Ohio constructively submitted no TMDL. Instead, EPA's approval is final agency action on exactly what it purports to be: the State's section 303(d) list of impaired waters, no more, no less.

Plaintiffs point out that EPA made a finding that Ohio's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking." Pl. Combined Memo at 10. As we noted in our opening memo, EPA simply confirms that the state has included a priority ranking that "tak[es] into account the severity of the pollution and uses to be made of such waters." 40 C.F.R. § 130.7(b)(4). EPA does not actually approve the ranking, much less Ohio's "discussion of its prioritization." *See* 2006 Assessment Guidance at 63 ("EPA will review the priority ranking but will not take action to approve or disapprove it."); *McLerran*, 2015 WL 1188522 at *6 (there is "no specific mechanism for reviewing [a state's] prioritization").

Plaintiffs also point to EPA's "blanket determination" that Ohio's 2016 list met the statutory and regulatory requirements. Pl. Combined Memo at 10. Plaintiffs argue that *McLerran* is analogous and refutes

Ohio's "flawed" approach. *id.* at 11, but Plaintiffs skip an essential step: in *McLerran* there was no question that EPA had taken final agency action on whether the state had made a constructive submission. The court in *McLerran* reviewed a separate approval document, issued outside the regular Section 303(d) review process and in response to a specific request to determine whether a state had abandoned a specific TMDL, in which EPA made the explicit conclusion that the state's strategy and task force were "an acceptable alternative to a TMDL." 2015 WL 1188522 at *4. This is materially different than the general statement at issue here, in the context of an Integrated Report. Unlike in *McLerran*, there is no final agency action on whether Ohio has abandoned a TMDL for the open waters of western Lake Erie, and without a final agency action, Count One fails to state a claim.

Plaintiffs raise the possibility of supplementing their complaint with yet a different count, addressing EPA's approval of Ohio's 2018 list, Pl. Combined Memo at 9 n.2, but that would also be futile. *See supra* n.2. In EPA's approval of Ohio's 2018 list, EPA noted Ohio's acknowledgment that TMDLs are required for any assessment units

that are listed as impaired. EPA 2018 Approval at 18. EPA's approval also explains that removing a segment from the Section 303(d) list may be warranted in some cases. For example, a TMDL would not be required if Ohio's efforts "result in the attainment of water quality standards prior to the development of a TMDL." *Id.* However, the substance of EPA's action was, like in 2016, an approval of Ohio's actual Section 303(d) list of impaired waters and its inclusion of a priority ranking of those waters, not an approval of the State's nutrient pollution reduction efforts as an alternative to a TMDL. *Id.* at 20.

Plaintiffs' proposed Count One therefore fails to state a claim, whether Plaintiffs plead Count One as a challenge to EPA's approval of Ohio's 2016 list or as a challenge to EPA's approval of Ohio's 2018 list.

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

Because Plaintiffs' two new proposed claims both fail to state a claim, and because EPA's approval of Ohio's 2016 Section 303(d) list, as amended, mooted Plaintiffs' claim that Ohio failed to list the open waters of western Lake Erie as impaired, there is nothing left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should grant Defendants' cross motion for summary judgment.

Respectfully submitted this 6th day of August 2018.

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CERTIFICATE OF SERVICE

I hereby certify that on August 6, 2018, I electronically filed the foregoing REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
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Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act

July 29, 2005

Watershed Branch
Assessment and Watershed Protection Division
Office of Wetland, Oceans and Watersheds
Office of Water
United States Environmental Protection Agency

This document provides EPA's guidance for preparing the 2006 Integrated Report. The Integrated Report is intended to satisfy the listing requirements of sections 305(b) and 314 of the Clean Water Act (CWA). This guidance document discusses existing requirements of the CWA and EPA's implementing regulations. Those statutory and regulatory provisions contain legally binding requirements. This document describes those requirements; it does not substitute for them. The recommendations in this document are not binding; indeed, there may be other approaches that would be appropriate in particular circumstances. When EPA makes a decision on a state's section 303(d) list, it will make each decision on a case-by-case basis and will be guided by the applicable requirements of the CWA and implementing regulations, taking into account comments and information presented at that time by interested persons regarding the appropriateness of applying these recommendations to the particular situation.

CONTENTS

Section Page

ABBREVIATIONS AND ACRONYMS v

I. INTRODUCTION 6

II REPORTING REQUIREMENTS UNDER THE CLEAN WATER ACT SECTIONS 303(D), 305(B), 314 AND CORRESPONDING REGULATIONS 9

III. RECOMMENDED ORGANIZATION OF AN INTEGRATED REPORT 13
EXECUTIVE SUMMARY 14
PART A. INTRODUCTION 14
PART B. BACKGROUND INFORMATION 14
PART C SURFACE WATER MONITORING AND ASSESSMENT. 17
PART D. GROUND WATER MONITORING AND ASSESSMENT 25
PART E. PUBLIC PARTICIPATION 25

IV. ISSUES CONCERNING THE DEVELOPMENT AND USE OF AN ASSESSMENT METHODOLOGY 29

V. FIVE-PART CATEGORIZATION OF WATERS 46

VI. REPORTING RESULTS 65

GLOSSARY 66

APPENDIX: DATA ELEMENTS FOR 2006 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT AND DOCUMENTATION FOR DEFINING AND LINKING SEGMENTS TO THE NATIONAL HYDROGRAPHY DATASET
. 70

TABLES

Table		Page
2-1	SUMMARY OF STATE REPORTING REQUIREMENTS UNDER CWA SECTIONS 303(D), 305(B) AND 314 AND CORRESPONDING REGULATIONS	11
3-1	ATLAS	15
3-2	SIZE OF SURFACE WATERS ASSIGNED TO REPORTING CATEGORIES	19
3-3	ATTAINMENT RESULTS CALCULATED USING PROBABILISTIC MONITORING DESIGNS	20
3-4	SEGMENT/POLLUTANT COMBINATIONS REMOVED FROM STATE'S YEAR 2004 SECTION 303(D) LIST	21
3-5	TMDL DEVELOPMENT STATUS	21
3-6	INDIVIDUAL DESIGNATED USE SUPPORT SUMMARY	22
3-7	SIZE OF WATERS IMPAIRED BY CAUSES	22
3-8	SIZE OF WATERS IMPAIRED BY SOURCES	23
3-9	TROPHIC STATUS OF SIGNIFICANT PUBLICLY OWNED LAKES	24
3-10	TRENDS IN LAKE WATER QUALITY	24
3-11	SUMMARY OF WATER QUALITY REPORTING ELEMENTS OF AN INTEGRATED REPORT	27
5-1	RECOMMENDED WATER QUALITY INDICATORS FOR GENERAL DESIGNATED USE CATEGORIES	52
5-2	DOCUMENTATION OF "GOOD CAUSE" TO MOVE SEGMENTS FROM CATEGORY 5.	58

FIGURES

Figure		Page
4-1	USING MULTIPLE TYPES OF DATA TO ASSESS ATTAINMENT	45

EXHIBITS

Exhibit		Page
3-1	RECOMMENDED ORGANIZATION FOR YEAR 2006 INTEGRATED REPORT SUBMITTALS	13
5-1	2006 INTEGRATED REPORTING GUIDANCE: SEGMENT CATEGORIZATION GUIDE	48

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ABBREVIATIONS AND ACRONYMS

ADB	Assessment Database
AU	Assessment Unit
CALM	Consolidated Assessment and Listing Methodology
CPP	Continuing Planning Process
CFR	Code of Federal Regulations
CWA	Clean Water Act
DQO	Data Quality Objectives
DU	Designated Use
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
FGDC	Federal Geographic Data Committee
GPRA	Government Performance Report Act
IR	Integrated Report
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NSSP	National Shellfish Sanitation Program
OW	Office of Water
PPG	Performance Partnership Grant
PWS	Public Water Supply
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RIT	Reach Indexing Tool
SDWA	Safe Drinking Water Act
STORET	STORage and RETrieval
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WQC	Water Quality Criteria
WQS	Water Quality Standard

I. INTRODUCTION

The *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* was developed specifically for the 2006 reporting cycle. The objective of this document is to provide to states, territories, authorized tribes, and interstate commissions[1] a recommended reporting format and a suggested content to be used in developing a single document that integrates the reporting requirements of the Clean Water Act (CWA) section 303(d) and section 305(b). This guidance for developing the Integrated Report (IR) supports the Environmental Protection Agency's (EPA) strategy for achieving a broad-scale, national inventory of water quality conditions. Use of the IR format will serve to report on water quality standards (WQS) attainment status of assessed waters, document availability of data and information for each segment, identify trends in water quality conditions, and provide information to managers in setting priorities for future actions to protect and restore the health of our nation's aquatic resources.

EPA has established a goal that all fifty-six states and territories utilize the integrated reporting format by 2008. EPA continues to promote this comprehensive assessment approach in order to enhance the states' ability to track both programmatic and environmental goals of the CWA, and ideally, to increase the pace of achieving these important environmental goals. This document includes recommendations designed to allow states and other interested stakeholders to track the progress of interim management actions by employing the multi-category reporting framework. By issuing this guidance well in advance of the April 1, 2006 deadline for submission of CWA section 303(d) lists and section 305(b) reports, EPA intends to encourage the broadest possible adoption of the integrated reporting approach.

EPA continues to advocate the use of the five-part categorization format for sorting waters (see box below for brief description and Section V). While this document is more comprehensive than previous Integrated Report Guidance, there are clarifications to the previous (2004) Integrated Report Guidance. Specifically, this guidance provides:

- increased emphasis on the use of the Assessment Database (ADB) or compatible electronic data format (the ADB is being modified to accommodate the recent format, content, and multi-category listing option that the guidance suggests),
- greater clarity on the content and the format of those components of the IR that are recommended and required under CWA sections 303(d), 305(b), and 314,
- greater clarity on issues associated with data solicitation, collection, consideration, and interpretation of water quality standards,
- additional information on the option to report water quality status of individual segments in more than one category (e.g., to show that some designated uses of a water are being attained and some designated uses are not),[2] and
- additional clarity and flexibility on undertaking and reporting alternatives to total maximum daily loads (TMDLs) for attaining water quality standards (e.g., utilization of reporting "Category 4b").

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[1] In the remainder of this document, unless specified otherwise, *states* also refers to authorized tribes, territories and interstates commissions.

[2] In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality, although note that states determine their section 303(d) list (i.e., Category 5) consistent with 40 CFR 130.7 (b)(3).

It is important to note that certain components of the recommended format and content for the 2006 IR document are based on requirements of the CWA and EPA's implementing regulations (e.g., the submission of an approvable section 303(d) list), whereas other components are based on Agency recommendations. In section II of this guidance, those components *required* by the CWA sections 303(d), 305(b), 314, and the corresponding regulations are identified.

In addition to identifying the required components in the 2006 IR submission, this guidance will indicate the components of the 2006 IR document for which EPA recommends states provide an opportunity for *public review and comment* (e.g., the list of impaired waters requiring TMDLs and the assessment methodology used by the state to develop their IR document).

Five Reporting Categories

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Integrated Monitoring and Assessment

The Clean Water Act requires states to provide every two years an assessment of the quality of all their waters (section 305(b)) and a list of those that are impaired or threatened (section 303(d)). To efficiently meet this charge, EPA recommends that states, tribes, and other water quality monitoring collaborators use a combination of monitoring and assessment techniques to:

1. increase the percentage and types of waters assessed;
2. reliably estimate the overall condition of all waters within a state; assess changes over time; and measure progress toward the "fishable-swimmable" goal of the Clean Water Act (section 305(b));
3. comprehensively identify all impaired and threatened waters to support section 303(d) listing requirements; and
4. prioritize site-specific assessments needed to confirm the location of both high quality and impaired waters, and support control, restoration, and prevention actions.

EPA has strongly encouraged states to use integrated monitoring and assessment techniques. These include probability-based assessments and other predictive tools, as well as site-specific assessments. The use of probability assessments can eliminate the risk of generating a biased picture of water quality conditions state-wide and provide a cost-effective bench mark of state water quality program effectiveness. The probability-based assessment results can also help a state decide if it should target certain waters for further assessment or if limited resources for water quality assessment could be used more effectively in other ways. States currently using broad-scale probability-based assessment to complement their site-specific assessment include VA, SC, KY, and IN, among others.

V. FIVE-PART CATEGORIZATION OF WATERS

Use of the Integrated Report format and the use of the five-part categorization scheme envisions that each state provides a comprehensive description of the water quality standards attainment status of all segments within a state. In this guidance, the term "segment" is synonymous with the term "assessment unit" (AU) used in previous IR Guidance. Fundamental to this accounting is the use of a consistent and rational segmentation and geo-referencing approach for all segments including rivers, streams, lakes, wetlands, estuaries, and coastal waters. There is no single approach to the development of a segmentation scheme. However, it is important that the selected segmentation approach be consistent with the state's water quality standards and be capable of providing a spatial scale that is adequate to characterize the WQS attainment status of the segment. The IRG provides some recommendations on how states may develop a segmentation scheme for monitoring, assessing and categorizing water quality conditions. Additionally, the IRG provides recommendations for assigning individual segments to the five-category system.

A. Recommendations for Segmenting Waters

EPA recommends that states consider using the National Hydrography Dataset (NHD)[15] coding scheme to georeference their segments, where segments may comprise part of an NHD reach, an individual NHD reach, or a collection of NHD reaches or parts of reaches. Alternatively, if a state has already developed a comparable Geographic Information System (GIS) framework, EPA requests that states provide any relevant information necessary to allow consistent georeferencing. Additionally, this information should be included in the state's ADB submission. States generally partition waters to represent homogeneity in physical, biological or chemical conditions. This segmentation may reflect an *a priori* knowledge of factors such as flow, channel morphology, substrate, riparian condition, adjoining land uses, confluence with other waterbodies, and potential sources of pollutant loadings (both point and nonpoint). While there is no single default dimension for a segment size, states have utilized these or similar principles when they defined the segments used in their water quality standards. Other factors may include the following:

- The expected natural variability of the measured criteria associated with the WQSs.
- The type of water (e.g., a small stream, a wide river, a tidal and stratified estuary, and coastal shoreline).
- Time of travel of a parcel of water in the waterbody or segment or the magnitude of any tidal excursions.
- The amount of and type of data and information necessary to provide a reasonably accurate characterization of the criteria (or core indicators) associated with the designated uses in the segment or waterbody.
- Any expected changes in significant influences in the watershed (land use, point or nonpoint sources of pollutants).
- Any site-specific concerns such as patchy or unique habitat distribution patterns or biological population distributions.

[15] By making this recommendation, EPA is not equating availability of geographical information on a water segment in the NHD with the legal definition of water of the U.S. under CWA.

Using NHD or other comparable GIS framework, a state should assign a discrete "address" or geo-location to each segment, and document the process used for defining water segments in their methodologies. The physical boundaries (beginning and end points) of a segment should be defined in such a manner that a scientifically valid assessment of each and every segment can be made. The individual size of a segment will vary based upon methodologies. Segments should, however, be larger than a sampling station but small enough to represent a relatively homogenous parcel of water (with regard to hydrology, land use influences, point and nonpoint source loadings, etc.).

B. How should segments be assigned to EPA's five reporting categories?

EPA continues to advocate the use of the five category approach for classifying the WQS attainment status for each segment. In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality. A segment is considered impaired when WQS[16] are not being supported and/or met, and is considered threatened when WQS are not expected to be fully supported and/or met in the next listing cycle. In classifying the status of water quality in 2006, states have the option to report each segment in one or more categories. EPA recommends that states use the following five reporting categories to classify segments as meeting or not meeting applicable WQS:

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Exhibit 5-1 provides an example of how to consider designated uses in the categorization process. EPA believes that the placement of segments into the five reporting categories best allows states to document attainment of applicable WQSs, and to develop monitoring strategies that effectively respond to the needs identified in the assessment, while ensuring that the attainment status of each water quality standard applicable to a particular segment is addressed.

[16] Water quality standards include designated use(s), criteria, and the antidegradation policy. Water quality criteria are important elements of water quality standards and attainment of criteria should also be evaluated in making listing decisions (See 40 CFR 130.7 (b)(3)). Failure to meet WQC warrant listing of waters under section 303(d). EPA has not developed guidance at this time on determining attainment status for antidegradation policies. EPA recognizes that such policies, while an important part of WQS, may not lend themselves to "attainment" determinations on a segment specific basis.

Exhibit 5-1. 2006 Integrated Reporting Guidance: Segment Categorization Guide

The following schematic describes a process states might consider using for determining the placement of segments into the Integrated Report (IR) Categories. The process begins with the assessment of the water quality standard attainment status (designated use(s), criteria) of each segment, and concludes with the placement of each segment into one or more of the five IR Categories. The assessment of the water quality standards attainment status should be consistent with the state's assessment and listing methodology and must ensure that segments not meeting or not expected to meet applicable water quality standards are identified. While the schematic focuses on the assessment of designated uses (DU) for each segment, as previously stated all components of the water quality standard are considered in the categorization of a segment.

Step-by-step process to categorize a segment

1. For each segment, assemble and consider all existing and readily available data and/or information to determine the support status for each individual designated use.
2. Based on the data and information available, make support decisions for each DU in the segment and assign the appropriate symbol (✔+, ✔-, ?, T, 4a, 4b, 4c – See *Symbols and Definitions*).
3. Using the results of Step 2, place the segment into the appropriate category or categories.

Symbols and Definitions:

✔+ = The existing data and information shows that a use ***is supported***.

✔- = The existing data and information shows that a use ***is not supported.***

? = There is insufficient existing data and information to make a use support determination, consistent with the state's assessment and listing methodology.

T = A use in this segment is currently being supported, but is **THREATENED** and it is projected not to be supporting by the next scheduled list submission date.

4a = A TMDL to address a specific segment/pollutant combination has been approved or established by EPA.

4b = A use impairment caused by a pollutant is being addressed by the state through other pollution control requirements.

4c = A use is impaired, but the impairment is not caused by a pollutant.

In the following schematic, each box represents one (1) segment. Each segment may contain one or more DUs. After compiling and considering all existing and readily available data and information for each DU in a specific segment, support decisions are made. Placement of the segment into the appropriate category or categories is based on the sufficiency of the data and information, and the analysis of whether the data demonstrates that the DU is supported.

SEGMENT #1 (1 DU) → **ASSESSMENT**

DU1 → ✔+

SEGMENT #2 (2 DUs) → **ASSESSMENT**

DU1, DU2 → T, ✔-

SEGMENT #3 (3 DUs) → **ASSESSMENT**

DU1, DU2, DU3 → ✔+, ✔+, ?

SEGMENT #4 (4 DUs) → **ASSESSMENT**

DU1, DU2, DU3, DU4 → ✔-, 4a, ?, ✔+

SEGMENT CATEGORIZATION

	DU1	DU2	DU3	DU4	Single Category	Multi-Category
SEGMENT 1	✔+				C1	C1
SEGMENT 2	T	✔-			C5	C5
SEGMENT 3	✔+	✔+	?		C2	C2 & C3
SEGMENT 4	✔-	4a	?	✔+	C5	C5, C4a, C3 & C2

Additional examples are provided below to further illustrate the process of segment classification into multiple categories.

	DU1	DU2	DU3	DU4	Single-Category	Multi-Category
SEGMENT A	✔+	✔+	✔+	✔+	C1	C1
SEGMENT B	✔-	✔-	✔-	✔-	C5	C5
SEGMENT C	✔-	✔-	✔-	T	C5	C5
SEGMENT D	?	?	?	?	C3	C3
SEGMENT E	4b	✔-	✔-	✔-	C5	C4b, C5
SEGMENT F	✔+	✔+	✔-	✔-	C5	C2 & C5
SEGMENT G	✔+	✔+	?	?	C2	C2 &C3
SEGMENT H	?	?	?	✔-	C5	C3 & C5
SEGMENT I	✔+	✔+	✔+	4c	C4c	C2, C4c
SEGMENT J	?	?	4c	T	C5	C3, C4c, & C5
SEGMENT K	✔+	?	?	✔-	C5	C2, C3, & C5
SEGMENT L	✔+	✔+	?	T	C5	C2, C3 & C5
SEGMENT M	✔+	?	4b	✔-	C5	C2, C3, C4b & C5

States have the option to place segments into more than one of the five categories when appropriate. The placement of segments into more than one category will allow states to:

1. Demonstrate progress in the efforts to develop TMDLs,
2. Track progress as segments incrementally attain some, but not all water quality standards, and
3. Identify those segments where there is a need to obtain additional data and information for purposes of determining attainment status of some water quality standards.

While EPA recommends that states adopt and utilize the IR format for reporting the status of their water quality in 2006, states may choose to submit separate 303(d) and 305(b) reports. Furthermore, even if a state chooses to use the IR format, it may choose to place each segment into only one category and rely on the reporting capability of ADB to provide detail on the support status of all individual uses. More detailed guidance for determining the appropriate categorization of segments is provided below. It is important to note that states must consider all existing and readily available data and information in developing their section 303(d) lists, and may choose to assess a segment and assign the segment to a category using data and information other than monitored data (e.g., land use, pollutant loading coefficients, remote sensing data, modeling, etc.).

C. May a state use subcategories or additional categories in its Integrated Report?

Yes, in order to refine their classifications, states may choose to establish new or additional subcategories in addition to the proposed five major categories. For example, a state may decide to divide Category 3 into two subcategories in order to distinguish between those segments for which no data and/or information exist from those segments for which some data and/or information exist, but the data are insufficient to make a determination whether the segment is attaining applicable standards. A state may also choose to use subcategories for segments placed into Category 3 when establishing monitoring priorities. For example, the state may place its segments into different subcategories depending on whether the segment is high, medium, or low priority for follow-up monitoring based on information from probability-based monitoring, landscape or water quality models, land use data, or limited site-specific monitoring.

D. Which segments should states include in Category 1?

Segments may be placed into Category 1 if all designated uses are supported, and no use is threatened. When a segment meets the Category 1 requirements, the state has concluded, consistent with their water quality standards (and their assessment methodology) that sufficient data and information exist to determine that ***all applicable water quality standards are being attained,*** thereby making the use of Category 2 unnecessary for this segment, (see Category 2 discussion below). By placing a segment into Category 1, the state is also concluding that there are adequate data and there is sufficient information to make a determination for any water quality standard, making the use of Category 3 unnecessary for this segment (see Category 3 discussion below).

1. *In order to place a segment in Category 1, must states have specific data and information regarding the status of each water quality standard?*[17]

No. States may describe in either their assessment methodology or in their water quality standards a subset or hierarchy of indicators (as described in the CALM guidance and *Elements of a State Water Monitoring and Assessment Program*) that serve to characterize whether conditions in a segment are capable of meeting all applicable water quality standards.

Because limited resources affect the design of water quality monitoring programs, the state should use a tiered approach to monitoring that includes a core set of baseline indicators selected to represent each applicable designated use, plus supplemental indicators selected according to site-specific or project-specific decision criteria. Using this tiered approach, the state should be able to make the best use of its resources to meet water quality decision needs, including assessing water quality standards attainment and designated use support, identifying needed changes to water quality standards, describing causes and sources of impairments, developing water quality-based source controls, and assessing whether water quality standards are attained. Where the assessment of the supplemental indicators applicable to every designated use in a segment documents that all uses are supported and no use is threatened, that segment should be placed into Category 1.

The monitoring strategy should define a core set of indicators (e.g., water quality parameters) for each water resource type that include physical/habitat, chemical/toxicological, and biological/ecological endpoints as appropriate, that reflect designated uses, and that can be used routinely to assess attainment with applicable water quality standards throughout the state. This core set of indicators is monitored to provide Statewide or basin/watershed level information on the fundamental attributes of the aquatic environment and to assess water quality standards attainment/impairment status. Previously, chemical and physical indicators were emphasized; however, biological monitoring and assessment should assume a prominent role in state monitoring as well.

The monitoring strategy should also describe the process the state uses for identifying supplemental indicators to monitor. Supplemental indicators are often key to identifying causes and sources of impairments and targeting appropriate source controls. These supplemental indicators may include each water quality criteria in the state's water quality standards, any pollutants controlled by the National Pollutant Discharge Elimination System (NPDES), and any other constituents or indicators of concern.

Table 5-1 presents examples of recommended core and supplemental water quality indicators. The Consolidated Assessment and Listing Methodology provides additional information on considerations for selection of supplemental indicators (see http://www.epa.gov/owow/monitoring/calm.html, Chapter 10).

[17] Part D(1) of Section V has been adapted from Section II (Part D) of *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

Table 5-1. Recommended Water Quality Indicators for General Designated Use Categories

	Aquatic Life & Wildlife	Recreation	Drinking Water	Fish/Shellfish Consumption
Recommended Core Indicators	*Condition of biological communities (EPA recommends the use of at least two assemblages) *Dissolved oxygen *Temperature *Conductivity *pH *Habitat assessment *Flow *Nutrients *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Eutrophic condition Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Pathogen indicators (E. coli, enterococci) *Nuisance plant Growth *Flow *Nutrients *Chlorophyll *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Secchi depth Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Trace metals *Pathogens *Nitrates *Salinity *Sediments/TDS *Flow *Landscape conditions (e.g., % cover of land uses)	*Pathogens *Mercury *Chlordane *DDT *PCBs *Landscape conditions (e.g., % cover of land uses)
Supplemental Indicators	*Ambient toxicity *Sediment toxicity *Other chemicals of concern in water column or sediment *Health of organisms	*Other chemicals of concern in water column or sediment *Hazardous chemicals *Aesthetics	*Volatile organic compounds (VOCs) (in reservoirs) *Hydrophyllic pesticides *Nutrients *Other chemicals of concern in water column or sediment *Algae	*Other chemicals of concern in water column or sediment

Source: *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

2. Should states use biosurvey data to list a segment as in attainment for aquatic life use support?

EPA encourages the use of biosurvey data in concert with other specified and supplemental indicators for making an aquatic life use attainment determination. Properly developed biosurvey data can provide direct evidence of aquatic life use support. States may develop, consistent with their assessment methodology and water quality standards, their own bioassessment approach to assessing aquatic life use support. CALM and the 2003 *Elements of a State Water Monitoring and Assessment Program,* recommend the use of at least two assemblages (e.g., fish and macroinvertebrates) in such assessments (See Table 5-1 taken from *Elements of a State Water Monitoring and Assessment Program*).

3. What data should states have to determine that a segment is meeting a "fish consumption" use?

Assessment determinations regarding fish/shellfish consumption uses should be based on parameter-specific data for two groups of pollutants: (1) human pathogens, or indicators thereof, and (2) chemicals with high bioaccumulation potential. Among the bioaccumulative pollutants, EPA recommends mercury, chlordane, Dichloro-diphenyl-trichloroethane (DDT), and polychlorinated biphenyls (PCBs) as core indicators.

E. Which segments should states include in Category 2?

Segments should be placed in Category 2 if the state determines that available data and/or information indicate that some, but not all of the designated uses are supported. If the state has chosen to use the multi-category approach, segments reported in Category 2 may also be reported in Categories 3, 4, or 5 depending upon the results of the analysis of all available data and information on the other uses in the segment. However, if a single-category approach is used, Category 5 takes precedence over all other categories.

F. Which segments should states include in Category 3?

Segments should be placed in Category 3 when there is insufficient available data and/or information to make a use support determination. Category 3 is consistent with and responds to one of the recommendations in the National Research Council's (NRC) report, Assessing the TMDL Approach to Water Quality Management (2001), in which the authors suggested that a category be created for those segments where there existed insufficient data and/or information to assess the use. The state should identify those segments that are higher and lower priority for followup monitoring, and may do so using predicative tools such as probability surveys or landscape models. Category 3 provides states with the flexibility to monitor these segments in a manner consistent with their overall monitoring strategy and schedule.

G. Which segments should states include in Category 4?

Segments may be placed in Category 4 if available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed. States may place segments that meet this definition in one of the following three subcategories:

- a state developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination (Category 4a);

- other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time (Category 4b);
- the non-attainment of any applicable water quality standard for the segment is the result of pollution and is not caused by a pollutant (Category 4c).

1. Which segments should states include in Category 4a?

Segments should be placed in Category 4a when a TMDL to address a specific segment/pollutant combination has been approved or established by EPA. Once the TMDL has been approved or established, the state should implement the TMDL as soon as practicable. Additionally, EPA encourages states to provide monitoring schedules for these segments to ensure that sufficient data and information are obtained to document progress of the implementation actions towards meeting the applicable water quality standards. Segments in this category may also be included in other categories, as appropriate (See Exhibit 5-1).

2. Which segments should states include in Category 4b?

EPA regulations recognize that alternative pollution control requirements may obviate the need for a TMDL. Segments are not required to be included on the section 303(d) list if technology-based effluent limitations required by the Act, more stringent effluent limitations required by state, local, or federal authority, or "[o]ther pollution control requirements (e.g., best management practices) required by local, State or Federal authority" are stringent enough to implement applicable water quality standards (see 40 CFR 130.7(b)(1)) within a reasonable period of time. This guidance acknowledges that the most effective method for achieving water quality standards for some water quality impaired segments may be through controls developed and implemented without TMDLs (referred to as a "4b alternative"). The discussion below focuses on the use of "other pollution control requirements" as a basis for the conclusion that a segment does not need a TMDL.

a. What demonstration does EPA expect a state to make to support a successful Category 4b proposal?

EPA will evaluate on a case-by-case basis a state's decisions to exclude certain segment/pollutant combinations from Category 5 (the section 303(d) list) based on the 4b alternative. States should provide in their submission the rationale which supports their conclusion that there are "other pollution control requirements" sufficiently stringent to achieve applicable water quality standards within a reasonable period of time.

Specifically, this rationale should include: (1) a statement of the problem causing the impairment, (2) a description of the proposed implementation strategy and supporting pollution controls necessary to achieve water quality standards, including the identification of point and nonpoint source loadings that when implemented assure the attainment of all applicable water quality standards, (3) an estimate or projection of the time when water quality standards will be met, (4) a reasonable schedule for implementing the necessary pollution controls, (5) a description of, and schedule for, monitoring milestones for tracking and reporting progress to EPA on the implementation of the pollution controls, and (6) a commitment to revise as necessary the implementation strategy and corresponding pollution controls if progress towards meeting water quality standards is not being shown. EPA acknowledges that the level of rigor necessary to support the state's rationale will vary depending on the complexity of the

water impairments and corresponding implementation strategies. Note that a state could pursue water quality trading under 4b, so long as it follows the principles described in the Agency's relevant guidance.

If the Agency determines that the controls are not, in fact, "requirements," or that they will not result in attainment of applicable water quality standards within a reasonable time, then EPA may disapprove the state's failure to include the segment at issue on the section 303(d) list (i.e., Category 5) and add the segment to the list. In subsequent list submissions, EPA may determine that a segment that has been placed into Category 4b must go back into Category 5, if the circumstances have changed such that the state can no longer support its original 4b demonstration.

b. What constitutes acceptable "pollution control requirements" to support Category 4b alternatives?

Because of the case-specific nature of water quality impairments and controls designed to address such impairments, EPA cannot identify classes of controls that will always be adequate to support a conclusion that a segment is not required to be included in Category 5. In evaluating whether a particular set of pollution controls are in fact "requirements" as specified in EPA's regulation, the Agency will consider a number of factors including: (1) authority (local, state, federal) under which the controls are required and will be implemented with respect to sources contributing to the water quality impairment (examples may include: self-executing state or local regulations, permits, and contracts and grant/funding agreements that require implementation of necessary controls), (2) existing commitments made by the sources to implementation of the controls (including an analysis of the amount of actual implementation that has already occurred), (3) the availability of dedicated funding for the implementation of the controls, and (4) other relevant factors as determined by EPA depending on case-specific circumstances.

Since the overriding objective of the 4b alternative is to promote implementation activities designed to achieve water quality standards in a reasonable period of time, for all of the factors listed above, EPA will evaluate each 4b alternative on a case-by-case basis, including in particular the existence of identifiable consequences for the failure to implement the proposed pollution controls. Depending on the specific situation, "other pollution control requirements" may be requirements other than those based on statutory or regulatory provisions, as long as some combination of the factors listed above are present and will lead to achievement of WQSs within a reasonable period of time. For example, established plans of government agencies that require for attainment of WQS with a reasonable period of time may qualify even when their components include incentive-based actions by private parties. States may also choose to rely on controls that have already been implemented where there is sufficient certainty that implementation will continue until WQS are achieved and will not be reversed. Because the controls are already in place and achieving progress, EPA may consider such controls to be requirements even if their implementation did not occur pursuant to binding legal authority.

c. What constitutes a reasonable period of time for purposes of 4b?

EPA expects that segments impaired by a pollutant but not listed under section 303(d) based on the implementation of existing control requirements will attain WQSs within a reasonable period of time. What constitutes a "reasonable time" will vary depending on factors such as the initial severity of the impairment, the cause of the impairment (e.g., point source discharges, in place sediment fluxes, atmospheric deposition, nonpoint source runoff), riparian condition, channel condition, the nature and behavior of the specific pollutant (e.g., conservative, reactive), the size and complexity of the segment (a

simple first-order stream, a large thermally-stratified lake, a density-stratified estuary, and tidally-influenced coastal segment), the nature of the control action, cost, public interest, etc. States should consider such factors and provide, as stated in Section IV.G.2.A. above, a time estimate by which the controls will result in WQS attainment, including an explanation of the basis for their conclusion. EPA will evaluate on a case-specific basis whether the estimated time for WQS attainment is reasonable.

d. What are some examples to illustrate how the preceding guidance would be applied?

EPA will evaluate on a case-specific basis each set of controls a state uses to support a decision to include a segment in Category 4b. The following circumstances are examples of controls which may be sufficient to support such a decision, depending on the facts of the specific case:

- A waterbody is impaired solely by point sources. Each point source has an NPDES permit containing limits sufficient to implement WQS in that waterbody by the end of the permit terms.
- A waterbody is impaired by nonpoint source sediment input. The state has adopted regulations requiring sources to implement certain best management practices (BMPs), and can enforce the regulatory requirements under state law. The state demonstrates that implementation of BMPs by these sources will result in meeting WQS in the waterbody in a reasonable time.
- A waterbody is impaired by nonpoint sources and the state has entered into contracts for source remediation. Implementation of the contract terms will result in attainment of WQS in the waterbody in a reasonable time. While the state cannot obtain specific performance as a contract remedy, it can file a claim for significant monetary damages if the terms are not met.
- A waterbody is impaired by nonpoint sources which have already implemented some or all of certain measures that will result in attainment of WQS in that waterbody in a reasonable time. The controls are unlikely to be removed or reversed (e.g., watershed restoration measures pursuant to 319 grant).
- A waterbody is impaired by nonpoint sources within federal lands where a forest management plan has been developed and is being implemented. In this case, certain elements are included in the forest management plan emphasizing BMP certification programs, require adaptive adjustments of practices, and specify monitoring options needed to demonstrate compliance with state water quality standards.

3. Which segments should states include in Category 4c?

Segments should be placed in Category 4c when the states demonstrates that the failure to meet an applicable water quality standard is not caused by a pollutant, but instead is caused by other types of pollution. Segments placed in Category 4c do not require the development of a TMDL. Pollution, as defined by the CWA is "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water" (section 502(19)). In some cases, the pollution is caused by the presence of a pollutant and a TMDL is required. In other cases, pollution does not result from a pollutant and a TMDL is not required. States should schedule these segments for monitoring to confirm that there continues to be no pollutant associated with the failure to meet the water quality standard and to support water quality management actions necessary to address the cause(s) of the impairment. Examples of circumstances where an impaired segment may be placed in Category 4c include segments impaired solely due to lack of adequate flow or to stream channelization.

EPA encourages the state to collect or assemble additional data and/or information to verify the initial placement of the segment, and to re-categorize the segment based on the assessment of the additional data and/or information where appropriate.

H. Which segments should states include in Category 5?

This category constitutes the section 303(d) list that EPA will review and approve or disapprove pursuant to 40 CFR 130.7. States must include on their section 303(d) list those waters required to be listed by the Clean Water Act and EPA's implementing regulations. Segments must be placed in Category 5 when, based on existing and readily available data and/or information, technology-based effluent limitations required by the Act, more stringent effluent limitations, and other pollution control requirements are not sufficient to implement an applicable water quality standard and a TMDL is needed. 40 CFR 130.7(b)(1).

A segment that is included in Category 5 may also be included in other categories where appropriate. For example, the segment may be attaining some applicable standards, in which case it may also be included in Category 2. As the state develops and EPA approves TMDLs for the pollutants identified as causing a Category 5 segment to exceed an applicable standard, the segment can be placed in Category 4a, but must also remain in Category 5 if it is exceeding any applicable standard and a TMDL needs to be developed for the pollutant causing that exceedance. However, note that Category 5 takes precedence if the state chooses to list a segment in only one category.

1. Is Category 5 of the Integrated Report for 2006 a new section 303(d) list, and must the state account for all segments previously listed as needing a TMDL in the 2004 list?

The section 303(d) list (segments in Category 5) once approved (or, if necessary, established by EPA following disapproval of a state's list) is a new list that replaces the previous list. The time frame for establishing TMDLs should be 8 to 13 years from the date of the original listing. For example, a segment originally included on the 1998 section 303(d) list, and still identified on the 2006 submission as requiring a TMDL, should be addressed by 2011.

Segments included on previous 303(d) lists or previously placed in Category 5 should be accounted for in subsequent submissions. However, the fact that a segment was previously included in Category 5 (or on the 303(d) list) does not necessarily mean that it must remain in Category 5 until a TMDL is established. In some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the applicable standard is met). Alternatively, the state may determine that other required control measures are sufficient to implement the applicable standard, and therefore may move the segment to Category 4b. The state may also determine based on the assessment of new data and information that pollutants do not cause or contribute to the impairment of the segment and therefore may move the segment to Category 4c. The state may also demonstrate that the original Category 5 listing was erroneous (i.e., not consistent with its assessment methodology or WQSs).

EPA may request, as discussed below, that the state demonstrate good cause for not including individual segments (including previously listed segments) in Category 5 (40 CFR 130.7(b)(6)(iv)). EPA may request this demonstration if the state does not develop an adequate record supporting the basis for

the decision or does not specifically explain its decision to move segments previously listed in Category 5 to other categories.

2. *What constitutes good cause for not including in the current submission segments that were previously included in Category 5 (the section 303(d) List)?*

To provide interested stakeholders with a more complete understanding of the changes that may have occurred from one IR cycle (or 303(d) submission) to the next, and to help expedite EPA's review and approval/disapproval action for those segments in Category 5, EPA recommends that states submit with their IR (or their 303(d) list) a table documenting changes in segment placement or categorization from the 2004 IR, and a brief summary of the basis for those changes. Table 5-2 provides an example of how states might do this.

Table 5-2. Documentation of "Good Cause" to Move Segments from Category 5.

Segment previously in Category 5	New placement in 2006	Explanation for change
Segment 214	Category 4a	TMDL completed and approved by EPA for Chromium.
Segment 266	Category 4c	The analysis of new data concluded that the aquatic life use impairment is solely due to low river flow.
Segment 321	Category 4b	The state has proposed an alternative approach to attain WQS by implementing required controls via NPDES permits.
Segment 349	Category 1	The assessment of new data documents that applicable WQS are now being attained.
Segment 350	Category 3	Previous listing in Category 5 was inconsistent with assessment methodology. Available data insufficient to determine attainment status.

In addition, EPA may request that states provide "good cause" for not including on the 2006 section 303(d) list (Category 5) submission segments that were previously included on the list. If EPA makes such a request, the state must explain its basis for not including the segment on the list. Consistent with 40 CFR 130.7(b), "good cause" for not including segments in Category 5 may be based on the following determinations:

- The assessment and interpretation of more recent or more accurate data in the record demonstrate that the applicable WQS(s) is being met.
- The results of more sophisticated water quality modeling demonstrate that the applicable WQS(s) is being met.
- Flaws in the original analysis of data and information led to the segment being incorrectly listed.
- A demonstration pursuant to 40 CFR 130.7(b)(1)(ii) that there are effluent limitations required by state or local authorities that are more stringent than technology-based effluent limitations, required by the CWA, and that these more stringent effluent limitations will result in the attainment of WQSs for the pollutant causing the impairment.

- A demonstration pursuant to 40 CFR 130.7(b)(1)(iii) that there are other pollution control requirements required by state, local, or federal authority that will result in attainment of WQSs for a specific pollutant(s) within a reasonable time (i.e., 4b).
- Documentation that the state included on a previous section 303(d) list an impaired segment that was not required to be listed by EPA regulations, e.g., segments where there is no pollutant associated with the impairment.
- Approval or establishment by EPA of a TMDL since the last section 303(d) list.
- A state inappropriately listed a segment that is within Indian country, as defined in 18 U.S.C. section 1151.
- Other relevant information that supports the decision not to include the segment on the section 303(d) list.

EPA has the authority to disapprove a submission if EPA identifies existing and readily available information that shows a segment is required by the CWA and EPA regulations be included in Category 5 (the section 303(d) list). In that situation, EPA will partially disapprove the state's list and identify additional segments for inclusion in Category 5.

3. Can previously listed segments (without new data or information) be delisted solely because they have not yet been assessed with a new methodology?

No. EPA does not believe it would be appropriate to remove segments previously listed in Category 5 (without new data or information) ***solely*** because they have not yet been assessed with a new methodology. However, there are some situations where a segment may be removed from Category 5 without relying on data and information collected after the date of the previous list. For example, if the state evaluates the pre-existing data and information using a new or revised methodology that accurately reflect the applicable WQS, and the results of that evaluation provide a "good cause" basis for not including the segment on the 2006 section 303(d) list, the segment would no longer need to be included in Category 5. However, the delisting should only occur if it is determined that the basis for the decision is consistent with the state's applicable WQSs and is reasonable.

4. Must Category 5 include threatened segments?

Yes, states must include threatened segments in Category 5 where appropriate (40 CFR 130.7(b)). The definition of "water quality limited segment" in EPA's regulations implementing CWA section 303(d) includes waters not expected to meet applicable water quality standards, which EPA refers to as "threatened" waters. 40 CFR 130.2(j). EPA recommends that states consider as threatened those segments that are currently attaining WQS, but are projected as the result of applying a valid statistical methodology to exceed WQS by the next listing cycle (every two years). For example, segments should be listed if the analysis of existing data and information demonstrates a declining trend in the segment's WQS, and the projected trend will result in a failure to meet that standard by the date of the next list (i.e., 2008 for purposes of the 2006 assessment cycle). The state assessment and listing methodology should describe how the state identifies threatened segments.

5. *Must Category 5 include an impaired segment if the specific pollutant causing the impairment has not been identified?*

Yes, if a designated use is not supported and the segment is impaired or threatened, the fact that the specific pollutant is not known does not provide a basis for excluding the segment from Category 5. These segments must be listed unless the state can demonstrate that no pollutant(s) causes or contribute to the impairment. Prior to establishing a TMDL for such segments the pollutant causing the impairment must be identified.

If the assessment of the new data and information demonstrates that the use impairment is not associated with a pollutant and is attributable only to other types of pollution (e.g., flow or habitat alteration) the segment may be placed into Category 4c. EPA has developed guidance to assist states in identifying the causes of a biological impairment. This document, "Stressor Identification Guidance," was released in December 2000 (EPA 822-B-00-025). This document is also available on the Internet at: http://www.epa.gov/ost/waterscience/biocriteria/stressors/stressorid.pdf.

6. *When should Category 5 include segments covered by fish and shellfish consumption advisories?*

EPA generally believes that fish and shellfish consumption advisories and certain shellfish growing area classifications based on segment specific information demonstrate impairment of CWA section 101(a) "fishable" uses. This applies to fish and shellfish consumption advisories and certain shellfish area classifications for all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. Furthermore, advisories based on the results from probability surveys or other predictive tools having a high degree of confidence (i.e., 95%) may also form the basis of listing segments as impaired. States, on their own prerogative, may choose to place segments into Category 5 (or on the section 303(d) list) using probability surveys when fish and shellfish consumption advisories and certain shellfish area classifications constitute potential risks to human health.

For purposes of determining whether a segment is impaired and should be included on section 303(d) lists states are required to consider all existing and readily available data and information (see 40 CFR 130.7). This should include physical, chemical and biological data, including data on pathogens (such as bacteria and phytotoxins) as well as fish and shellfish tissue concentration data, where such data are existing and readily available. States collect several types of monitoring data to help determine if segments are attaining or maintaining applicable water quality standards. If a state does not consider particular existing and readily available data and information in deciding which segments are impaired and must be placed on the section 303(d) list, they must provide an explanation to EPA of why they did not use such data and information.

While numeric human health criteria for ambient water column concentrations of pollutants are a basis for determining impairment, the attainment of such criteria does not always mean that designated uses are being protected. Segment-specific factors sometimes cause pollutants, including pathogens, to accumulate in fish and shellfish tissue at higher levels than predicted by the methodology used to derive the numeric human health criteria. Examples of such factors include water temperature, nutrient levels, food web structure, the concentration of dissolved organic carbon in the ambient water, and accumulations in the sediment. Hence, a segment can be meeting numeric ambient water quality criteria, but not attaining the designated uses because fish or shellfish tissue concentrations exceed levels that are protective of human health. In instances where tissue concentrations indicate an impairment of the

designated use, even though ambient water column concentrations of pollutants do not indicate an exceedance, EPA recommends states translate the applicable narrative criteria on a site- specific basis or adopt site specific numeric criteria to account for higher than expected exposures from contaminated fish or shellfish tissue and protect designated uses.

Applicable shellfish growing area classifications should be used as part of determinations of attainment of water quality standards and listing of impaired segments. Shellfish growing area classifications are developed by the National Shellfish Sanitation Program (NSSP) using water column and tissue data (where available), and information from sanitary surveys of the contributing watershed, to protect public health. The states review these NSSP classifications every three years. There are certain NSSP classifications and data that do not necessarily indicate WQS violation. These include: "Prohibited" classifications set as a precautionary measure due to the proximity of wastewater treatment discharges, or absence of a required sanitary survey; shellfish tissue pathogen data (which can fluctuate based on short-term conditions not representative of general water quality); or short-term actions to place growing areas in the closed status.

When deciding whether to identify a segment as impaired, states need to determine whether there are impairments of designated uses and narrative criteria, as well as the numeric criteria. Although the CWA does not explicitly direct the use of fish and shellfish consumption advisories or NSSP classifications to determine attainment of water quality standards, states are required to consider all existing and readily available data and information to identify impaired segments on their section 303(d) lists. For purposes of determining whether a segment is impaired and should be included on a section 303(d) list, EPA considers a fish or shellfish consumption advisory, a NSSP classification, and the supporting data, to be existing and readily available data and information that demonstrates non-attainment of a section 101(a) "fishable" use when:

- the advisory is based on fish and shellfish tissue data,
- a lower than "Approved" NSSP classification is based on water column and shellfish tissue data (and this is not a precautionary "Prohibited" classification or the state water quality standard does not identify lower than "Approved" as attainment of the standard),
- the data are collected from the specific segment in question, and
- the risk assessment parameters (e.g., toxicity, risk level, exposure duration and consumption rate) of the advisory or classification are cumulatively equal to or less protective than those in the state's water quality standards.

This applies to all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. However, for fish/shellfish advisories for "dioxin and dioxin-like compounds", due to unique risk characterization issues, listing decisions should be made on a case-by-case basis.

EPA acknowledges that in some cases, fish and shellfish consumption advisories may not demonstrate that a section 101(a) "fishable" use is not being attained in an individual segment. For example, a state may have issued a statewide or regional warning regarding fish tissue contaminated with a bioaccumulative pollutant, based on data from a subset of segments. A state may use a higher fish consumption value in determining the need for an advisory compared to the value used in establishing water quality criteria for the protection of human health. As noted above, a state may also classify shellfish growing areas "Prohibited" as a precautionary measure due to the proximity of wastewater treatment discharges or where a required sanitary survey has not been conducted. In such instances, these

segments need not be listed as impaired under section 303(d) unless there are segment specific data (and the data were not considered during the development or review of a non-precautionary NSSP classification), showing non-attainment of section 101(a) uses.

Some fish and shellfish consumption advisories and NSSP classifications are based on Food and Drug Administration (FDA) action levels as opposed to EPA's risk-based methodology for the protection of human health. FDA action levels are established to protect consumers of interstate shipped, commercially marketed fish and shellfish rather than fish and shellfish caught and consumed within the state. FDA action levels also include non-risk based factors (e.g., economic impacts) in their derivation, while water quality criteria must protect the designated uses without regard to economic impacts.

Where tissue contamination that triggers an advisory based on FDA action levels indicates an exceedance of state human health criteria, the advisory is an indication that section 101(a) "fishable" uses are not attained, and therefore, these segments should be placed into Category 5 or included on the 303(d) list.

7. How should Category 5 handle segments for which WQS are being revised or where temporary variances are in place?

The attainment decision must be based on the applicable WQS. In the case of a standard that is being revised, that standard is not applicable until it has been approved by EPA. 40 CFR 131.21. Therefore states must include in Category 5 segments that do not meet an applicable WQS at the time of listing, even if the new standard is in the process of being revised to be less stringent, until such time as EPA approves the revised standard. However, these segments would not have to be considered a high priority for TMDL scheduling. If EPA approves a revised standard in the future, the segment may be removed from the section 303(d) list at that time provided the segment does not meet the listing requirements with respect to the new standard. With respect to variances, which are temporary and usually apply to a particular discharger, but may also apply to a segment, the applicable WQS typically is the underlying standard, and therefore the segment should be placed in Category 5 if it does not support one or more of the designated uses in the underlying standard.

8. Must Category 5 include a segment where the criterion has been exceeded, but the exceedance is the result of background or natural conditions?

In some cases, a segment may exhibit water quality characteristics or chemical concentrations approaching or exceeding those levels established in the state's water quality standards due solely to non-anthropogenic causes. If the state's water quality standards include a specific exclusion for exceedances caused by "natural conditions", these segments would not be considered impaired (i.e., they could be excluded from Categories 4 and 5). These segments should instead be placed into Categories 1 through 3 as appropriate. For such segments, these background or natural conditions can be defined by assessing the results of water quality monitoring efforts, by the use of predictive models, or a characterization based on data from a watershed with similar hydrologic, land use, and pollutant loading characteristics.

9. What additional information is needed for segments in Category 5?

Identification of Pollutants

Section 130.7(b)(4) requires states to identify, for each segment included on the section 303(d) list (Category 5), the "pollutants causing or expected to cause violations of the applicable water quality standards." For the 2006 listing cycle, segments identified as impaired or threatened based on biological criteria should be included in Category 5 unless the state demonstrates that a pollutant is not causing the impairment, or inclusion in Categories 4a or 4b is warranted. States must identify all pollutants that are known to be causing the impairment of a segment.

Prioritization and TMDL Schedule

Section 303(d)(1) requires states to "establish a priority ranking" for the segments it identifies on the list, taking into account the severity of the pollution and the uses to be made of such segments, and to establish TMDLs "in accordance with the priority ranking." Consistent with section 130.7(b)(4) each state shall also submit biennially a priority ranking including waters targeted for TMDL development in the next two years. Each listed pollutant-segment combination (i.e., those in Category 5) must receive a clear priority ranking, which EPA recommends be either in the form of a scheduled TMDL completion date or a ranking such as high, medium, or low. States have considerable flexibility in deciding how best to apply these factors in prioritizing their list of waters needing TMDLs. For example, a waterbody with a severe water quality problem may be given a high priority for TMDL development in light of the severity of the concern. Conversely, a severe water quality problem may require complex analysis before developing a TMDL, and the state may therefore choose to give it a lower priority to allow time to collect necessary information and complete the analysis. Thus, the most severe water quality problems or the most toxic pollutants need not always be given the highest priority for TMDL development, if circumstances warrant a lower priority. EPA will review the priority ranking but will not take action to approve or disapprove it.

Federal regulations provide that "schedules for submissions of TMDLs shall be determined by the Regional Administrator and the State" (40 CFR 130.7(d)(1)). Factors such as the state's use of a rotating basin approach or commitments specified in court orders or consent decrees may be considered when states develop priorities and schedules. EPA recommends that states develop a schedule for establishing TMDLs as expeditiously as practicable and that the schedule (1) identifies which TMDLs will be established in each year of the upcoming integrated reporting cycle and (2) estimates the approximate number of TMDLs to be established for each year thereafter. EPA encourages the states to ensure that the schedule provides that all TMDLs for every pollutant-segment combination listed on previous section 303(d) lists be established in a time frame that is no longer than 8 to 13 years from the time the pollutant-segment combination is first identified in Category 5. EPA will not take any action on the schedule. The schedule is intended to help the public and EPA to understand the state's priorities and assist in work planning.

In developing their schedules, states will need to decide which TMDLs are higher priority than others. States need not specifically identify each TMDL as high, medium or low priority. Instead, the schedule itself can reflect the state's priority ranking. The CWA does not prescribe a particular method of expressing a priority ranking, and EPA believes a TMDL schedule is a reasonable, efficient way to demonstrate priority ranking. In some circumstances, the order in which TMDLs are established might be

subject to some modifications as the schedule is implemented, based on logistical efficiencies or data availability.

Ohio Environmental Protection Agency

Ohio 2018 Integrated Water Quality Monitoring and Assessment Report

Lake Erie

Division of Surface Water
Final Report

June 2018

Table of Contents

Section A: An Overview of Water Quality in Ohio A-1

Section B: Ohio's Water Resources
B1: Facts and Figures B-1
B2: 2020 Water Quality Goals B-8

Section C: Managing Water Quality
C1: Program Summary – Surface Water C-1
C2: Program Summary – Environmental and Financial Assistance C-19
C3: Program Summary – Drinking and Ground Waters C-20
C4: Program Summary – Environmental Services C-23
C5: Cooperation among State Agencies and Departments C-23
C6: Funding Sources for Pollution Controls C-24
C7: New 303(d) Vision Implementation in Ohio C-28

Section D: Framework for Reporting and Evaluation
D1: Assessment Units D-2
D2: Evaluation of the Ohio River D-6
D3: Evaluation of Lake Erie D-6
D4: Ohio's Water Quality Standards and Use Designations D-7
D5: Sources of Existing and Readily Available Data D-8
D6: Public Involvement in Compiling Ohio's Section 303(d) List of Impaired Waters D-12
D6.1: Solicitation for External Water Quality Data, 2018 Integrated Report Project (May 23, 2017) D-12
D6.1.1: Web Page with Instructions for Submitting Level 3 Credible Data D-13
D6.2: Web Page Announcing 2018 Integrated Report Preparation D-17
D6.3: Notice of Availability and Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-18
D6.3.1: Response to Comments Received regarding the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-19
D6.3.2: Comments Received during the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-36

Section E: Evaluating Beneficial Use: Human Health (Fish Contaminants)
E1: Background E-1
E2: Rationale and Evaluation Method E-1
E3: Results E-6
E4: Supplemental Information E-25
E4.1: Calculation of Fish Concentrations from Water Quality Standards Inputs E-25
E4.2: What's the difference between the Fish Consumption Advisory decision and the impairment decision? E-29

Section F: Evaluating Beneficial Use: Recreation
F1: Background (Bacteria) F-1
F2: Evaluation Method (Bacteria) F-2
F3: Results (Bacteria) F-8
F3.1: Lake Erie Public Beaches F-8
F3.2: Rivers and Streams F-17
F3.3: Inland Lakes F-22
F4: Recreation Assessment for Algae in Western Lake Erie F-27
F4.1: Background F-27
F4.2: Rationale and Evaluation Method F-27

F4.3: Results F-36

Section G: Evaluating Beneficial Use: Aquatic Life
G1: Background and Rationale G-1
G1.1: Background G-1
G1.2: General Determination of Attainment Status G-2
G2: Evaluation Method G-3
G2.1: Rivers and Streams: Large River Assessment Units (LRAUs) G-3
G2.2: Rivers and Streams: Watershed Assessment Units (WAUs) G-3
G2.3: Lake Erie Shoreline and Islands: Lake Erie Assessment Units (LEAUs) G-6
G3: Results G-7
G3.1: LRAUs G-8
G3.2: WAUs G-10
G3.3: LEAUs G-14

Section H: Evaluating Beneficial Use: Public Drinking Water Supply
H1: Background H-1
H2: Evaluation Method H-1
H2.1 Beneficial Use Designation H-1
H2.2 Water Quality Standards H-3
H2.3 Attainment Determination H-4
H2.4 Data Sources and Requirements H-5
H2.5 Ohio River Assessments H-6
H3: Results H-6
H4: Supplemental Information H-8

Section I: Considerations for Future Lists
I1: Wetlands I-1
I1.1 Documented High-Quality Wetlands I-2
I1.2 Significant Wetland Areas I-2
I1.3 Next Steps I-3
I2: Mercury Reduction at Ohio EPA I-11
I2.1: Ohio Law I-11
I2.2: Ohio Projects I-11
I2.3: Ohio Resources I-12
I2.4: Federal Rules I-12
I3: Inland Lakes and Reservoirs I-12
I3.1: Background of Ohio's Inland Lake Water Quality Monitoring Program I-13
I3.2: Status of Inland Lakes Program I-13
I3.2.1: Lake sampling – Lake Habitat Aquatic Life Use Assessment I-14
I3.2.2: Water Quality Standards for the Protection of Aquatic Life in Lakes I-14
I3.3: Preview of Future Listings I-15
I3.3.1: Methodology Preview: Lake Habitat Use Assessment I-16
I3.3.2: Results I-16
I4: Future Lake Erie Monitoring and Assessment I-19

Section J: Addressing Waters Not Meeting Water Quality Goals
J1: Ohio's 303(d) Listing Framework J-1
J2: Prioritizing the Impaired Waters: the 303(d) List J-3
J3: Addressing Nutrients in Lake Erie J-10
J4: Summary of Results J-16
J5: Changes for the 2018 303(d) List J-20
J6: Schedule for TMDL Work J-26
J6.1: Ohio TMDL Status J-26

J6.2: Long-Term Schedules for Monitoring and TMDLs J-26
J6.3: Short-Term Schedule for TMDL Development J-26

Section K: Maps
Ohio 8-Digit Hydrologic Units
Section 303(d) Human Health (Fish Tissue) Use Categories Watershed Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Large River Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Lake Erie Assessment Units
Section 303(d) Recreation Use Categories Watershed Assessment Units
Recreation Use Index Scores Watershed Assessment Units
Section 303(d) Recreation Use Categories Large River Assessment Units
Recreation Use Index Scores Large River Assessment Units
Section 303(d) Recreation Use Categories Lake Erie Assessment Units
Section 303(d) Aquatic Life Use Categories Watershed Assessment Units
Aquatic Life Use Index Scores Watershed Assessment Units
Section 303(d) Aquatic Life Use Categories Large River Assessment Units
Aquatic Life Use Index Scores Large River Assessment Units
Section 303(d) Aquatic Life Use Categories Lake Erie Assessment Units
Aquatic Life Use Index Scores Lake Erie Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Watershed Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Large River Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Lake Erie Assessment Units
Ohio Total Maximum Daily Load Program Progress

Section L: Summary Tables of Waterbody Conditions; List of Prioritized Impaired Waters; and Category 4B Demonstrations
L1: Status of Watershed Assessment Units L-2
L2: Status of Large River Assessment Units L-42
L3: Status of Lake Erie Assessment Units L-43
L4: Section 303(d) List of Prioritized Impaired Waters (Category 5) L-44
L5: Category 4B Demonstrations Contained in Approved Ohio TMDLs to Date L-85
L5.1: Projects included in the 2012 Integrated Report L-85
L5.2: Projects included in the 2014 Integrated Report L-97

Section M: An Overview of Ground Water Quality in Ohio
M1: Introduction M-1
M2: Ohio's Ground Water Programs M-2
M3: Ohio's Major Aquifers M-4
M4: Site-Specific Ground Water Contamination Summary M-8
M5: Major Sources of Ground Water Contamination M-10
M6: Summary of Ground Water Quality by Aquifer M-15
M7: Conclusions and Future Directions for Ground Water Protection M-40

Section N: References

List of Tables and Figures

Tables

B-1. Ohio's water resource statistics B-1
B-2. List of Ohio's principal streams and large rivers B-4
B-3. 2020 goals for four beneficial uses, Lake Erie and the Ohio River B-9
C-1. OWDA loans administered during calendar years 2015-2016 ..... C-26
D-1. Ohio water quality standards in the 2018 IR D-8
D-2. Data types used in the 2018 IR D-10
D-3. Descriptions of data used in the 2018 IR from sources other than Ohio EPA D-11
E-1. Comparison between fish concentration values and FCA program values E-3
E-2. Example data for calculating a weighted average fish tissue value E-4
E-3. A summary of changes in attainment from 2016 to 2018 IR E-6
E-4. Waters not supporting the human health use because levels of PCBs or mercury in fish tissue exceed the threshold level upon which the WQS criterion is based. These waters are category 5. ..... E-7
E-5. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based. These waters are category 1 ..... E-9
E-6. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based and which were categorized as impaired in the 2016 IR. These waters have become category 1 with the current assessment E-11
E-7. Waters with contaminants other than PCBs and mercury that affect fish tissue (included on the 303(d) list). These waters are category 5 ..... E-11
E-8. Waters for which the existing unimpaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 1h E-11
E-9. Waters for which the existing impaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 5h E-14
E-10. Waters with current fish tissue data where inadequate samples exist to determine impairment status. These waters are category 3i E-20
E-11. Large rivers and their impairment status E-22
E-12. Inland lakes and their impairment status E-23
E-13. Lake Erie assessment units and their impairment status E-25
F-1. Summary of the RU assessment methods F-2
F-2. Determining assessment status of Lake Erie shoreline AUs F-5
F-3. Determining assessment status of WAUs and LRAUs F-7
F-4. Recreation index score matrix F-8
F-5. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the western basin (Sandusky Bay and west) F-11
F-6. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the central basin (east of cedar point) F-12
F-7. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the central basin shoreline AU F-14
F-8. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the western basin shoreline AU F-14
F-9. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the islands shoreline AU. F-15

F-10. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the Sandusky basin shoreline AU. F-15
F-11. Aggregated exceedance frequencies at 65 Lake Erie public beaches from 2013-2017 (pooled by Lake Erie shoreline AU to report use support). F-17
F-12. Annual Ohio EPA *E. coli* sampling effort and RU assessment (using Ohio EPA data) in Ohio streams, rivers and inland lakes, 2011-2017 recreation seasons F-18
F-13. Overall differences in the assessment of RU attainment, 2010-2018 ..... F-18
F-14. Summary assessment status of the RU in Ohio's WAUs by assessment cycle F-20
F-15. Summary assessment status of the RU in Ohio's LRAUs F-21
F-16. Summary assessment status of the RU for inland lakes, 2013-2017 ..... F-22
F-17. Swimming advisory posting at Ohio's inland lake public beaches (2013-2017). F-25
F-18. Proposed Ohio Lake Erie AUs F-28
F-19. Data collected in Ohio waters of Lake Erie that is credible data level 3 or could likely be approved as level 3 with review and coordination F-31
F-20. The number of 10-day time frames exceeding the 30 percent coverage threshold (with 20,000 cells/mL) or greater) in the western basin open water unit for each year beginning in 2012 ..... F-36
G-1. Summary of aquatic life use assessment for Ohio's WAUs, LRAUs and LEAUs: 2002-2018 Integrated Report cycles G-9
G-2. Breakdown by size category of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-3. Breakdown by designated or recommended aquatic life use of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-4. Prevalence of the top five causes of aquatic life use impairment in WAUs and LRAUs based on biological and water quality survey data collected from 2003-2016 ..... G-12
H-1. PDWS attainment determination. H-4
H-2. Waters designated as impaired for (not supporting) the PDWS beneficial use. H-12
H-3. Summary of PDWS assessment results for the nitrate, pesticide and algae indicators H-18
I-1. List of high-quality wetland areas I-3
I-2. List of significant wetland areas I-8
I-3. Proposed lake habitat use criteria I-15
I-4. Summary of the lake habitat use assessment for lakes sampled in 2015-2016 using the draft assessment methodology described in this section I-17
J-1. Category definitions for the 2018 Integrated Report and 303(d) list J-2
J-2. Potential listing opportunities in Ohio's listing framework. J-3
J-3. Priority points for impaired AUs. J-5
J-4. Summary of results for each beneficial use J-16
J-5. Number of AUs removed from or added to the 303(d) list J-20
J-6. Summary of reasons for changes to the 2018 303(d) list J-20
J-7. Removals from the 303(d) list because of a flaw in the original listing J-21
J-8. Removals from the 303(d) list because of new data J-21
J-9. Addition to the 303(d) list because of flaw in original listing J-23
J-10. Additions to the 303(d) list because of new data J-23
J-11. Ohio TMDLs approved by U.S. EPA at the 11-digit hydrologic unit scale J-27
J-12. Ohio TMDLs approved by U.S. EPA at the 12-digit hydrologic unit scale J-31
J-13. Short-term schedule for TMDL development J-33
M-1. Summary of Ohio's Ground water protection programs. M-3
M-2. Ground water contamination summary M-8
M-3. Major sources of potential ground water contamination M-14

M-4. Counts of public water systems where 2007-2017 decadal mean values of compliance data occur in the Watch List and Impaired Category M-17
M-5. Counts of wells where 2007-2017 decadal mean values of AGWQMP data occur in the Watch List and Impaired Category (maximum values used for nitrate). M-27

Figures

B-1. Map of Ohio's principal streams and large rivers. B-2
B-2. Ohio Scenic River System B-3
C-1. Ohio Lake Erie AOCs and major Lake Erie tributaries C-7
D-1. Ohio's large rivers (rivers with drainages greater than 500 mi^2) and their watersheds D-3
D-2. Ohio's 12-digit WAUs and 8-digit hydrologic units D-4
D-3. Ohio's Lake Erie assessment units – western basin, islands, Sandusky basin and central basin shorelines and open water areas D-5
E-1. Illustration of the relationship among the WQS values, the values that trigger issuance of fish consumption advisories (FCAs) and the resulting decision regarding waterbody impairment associated with an FCA. E-2
E-2. Flowchart for the categorization of fish tissue data for the IR E-6
F-1. Lake Erie public beaches sampled under Ohio's bathing beach monitoring program. F-3
F-2. Erie and Sandusky County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-3. Cuyahoga and Loraine County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-4. Example of bacteria sampling locations, upper Walhonding River study area (2010) F-6
F-5. Frequency of advisory postings at Ohio's Lake Erie public beaches F-16
F-6. Histogram of RU index scores for Ohio's WAUs F-19
F-7. New Ohio Lake Erie AUs F-29
F-8. Monitoring locations in the western basin of Lake Erie in 2017 ..... F-30
F-9. Bloom severity observed and projected (with 40 percent TP reduction) since 2002 ..... F-35
G-1. Flowchart for determining if WAU score can be derived based on available sampling locations. G-5
G-2. Percent attainment status and goal progress ("100 percent by 2020") for monitored miles of Ohio's LRAUs (23 rivers/38 AUs/1247.54 miles total) G-10
G-3. Average full attainment watershed score for Ohio's HUC11 WAUs (IR cycles 2002-2010) and HUC12 WAUs (IR cycles 2010-2018). G-13
G-4. Breakdown by designated or recommended aquatic life use of sites in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 (n= 3,911 sites) G-13
G-5. Status and trend of aquatic life use "80 percent by 2020" goal for wading and principal stream and river sites in Ohio based on the last five IR cycles. G-14
G-6. Average IBI scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-16
G-7. Average MIwb scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-17
H-1. Ohio WAUs, LRAUs and LEAUs that contain at least one active surface water drinking water intake. H-2
H-2. AUs with nitrate indicator results H-9
H-3. AUs with pesticide indicator results H-10
H-4. AUs with algal toxin indicator results H-11
I-1. Supplemental weekly sampling locations for chlorophyll and microcystin; sampled by University of Toledo and the Ohio State University/Stone Laboratory (boxed sites) researchers in 2017 ..... I-20
J-1. Listing by smaller AUs and individual beneficial uses J-3
J-2. Priority points assigned based on use impairment or other factors (extra points). J-4

J-3. Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey. J-7
J-4. Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey. J-9
J-5. Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009. J-10
J-6. Key steps in the state TMDL and binational Annex 4 processes. J-13
J-7. Summary of 2018 IR results for watershed AUs by beneficial use. J-17
J-8. Summary of 2018 IR results for large river AUs by beneficial use. J-18
J-9. Summary of 2018 results by AU type. J-19
J-10. Summary of reasons for changes to the 2016 303(d) list. J-21
M-1. Aquifer types in Ohio modified from ODNR glacial and bedrock aquifer maps. M-4
M-2. Iron distribution in AGWQMP wells, overlain on major aquifers. M-5
M-3. Manganese distribution in AGWQMP wells, overlain on major aquifers. M-6
M-4. Distribution of public water systems on impaired list for arsenic for both treated and raw waters. M-34
M-5. Distribution of public water systems in impaired category and on the watch list for sulfate in raw water. M-35
M-6. Distribution of public water systems on fluoride MCL watch list for treated and raw water. M-36
M-7. Distribution of public water systems with maximum nitrate in treated and raw water greater than the MCL. M-37

List of Acronyms and Abbreviations

AmphIBI	amphibian index of biotic integrity
AMP	Atrazine monitoring program
AOC	Area of Concern (as identified under the Great Lakes Water Quality Agreement)
ARRA	American Recovery and Reinvestment Act of 2009
AU	assessment unit
BAV	beach action value
BEACH	Beaches Environmental Assessment and Coastal Health (Act)
BMP	best management practice
BNR	biological nutrient removal
BUI	Beneficial Use Impairment (as described in the Great Lakes Water Quality Agreement)
CABB	Center for Applied Bioassessment and Biocriteria
CAFO	Concentrated Animal Feeding Operations
CDBG	Community Development Block Grant
CDC	Center for Disease Control
cfu	colony forming unit
Corps	U.S. Army Corps of Engineers
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSO	combined sewer overflow
CSP	Conservation Stewardship Program
CWH	coldwater habitat
CWA	Clean Water Act
DDAGW	Division of Drinking and Ground Waters
DDT	dichlorodiphenyltrichloroethane
DEFA	Division of Environmental and Financial Assistance
DES	Division of Environmental Services
DLG	digital line graph
DRG	digital raster graphic
DSW	Division of Surface Water
EAG	External Advisory Group
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
EWH	exceptional warmwater habitat
FCA	fish consumption advisory
FFY	federal fiscal year
FSA	Farm Service Agency
FWPCA	Federal Water Pollution Control Act
GIS	Geographic Information System
GLLA	Great Lakes Legacy Act
GLRC	Great Lakes Regional Collaboration
GLRI	Great Lakes Restoration Initiative
GLSM	Grand Lake St. Marys
GLWQA	Great Lakes Water Quality Agreement
GRP	Grassland Reserve Program
GRTS	Generalized Random Tessellation Stratified (survey design)
HAB	harmful algal bloom
HSD	honest significant difference
HUC	hydrologic unit code

IBI	index of biotic integrity
ICI	invertebrate community index
IDP	indirect discharge permit
IR	Integrated Report
kg	kilogram
L	liter
LA	load allocation
LAMP	lakewide action and management plan
LCI	Lake Condition Index
LDI	Landscape Development Intensity
LEAU	Lake Erie assessment unit
LEC	(Ohio) Lake Erie Commission
LENT	Lake Erie nutrient targets
LEPF	(Ohio) Lake Erie Protection Fund
LH	lake habitat
LHD	local health district
LRAU	large river assessment unit
LRW	limited resource water
LTCP	long-term control plan
MBI	Midwest Biodiversity Institute
MF	membrane filter
mg	milligram
mi^2	square miles
mL	milliliter
MIwb	modified index of well-being
MOR	monthly operating data
MPN	most probable number
MRBI	Mississippi River Basin Initiative
MS4	municipal separate storm sewer systems
MWH	modified warmwater habitat
NARS	National Aquatic Resource Survey
NCCA	National Coastal Condition Assessment
NCWQR	National Center for Water Quality Research
NEORSD	Northeast Ohio Regional Sewer District
ng	nanogram
NHD	National Hydrography Dataset
NLCD	National Land Cover Dataset
NOAA	National Oceanic and Atmospheric Administration
NOI	notice of intent
NPDES	National Pollutant Discharge Elimination System
NPS	nonpoint source
NRCS	Natural Resources Conservation Service
NSMP	Nonpoint Source Management Plan
NSSP	National Shellfish Sanitation Program
NWI	National Wetland Inventory
NWQI	National Water Quality Initiative
OAC	Ohio Administrative Code
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
OMZA	outside mixing zone average

ORC	Ohio Revised Code
ORSANCO	Ohio River Valley Water Sanitation Commission
OSIP	Ohio Statewide Imagery Program
OTMP	Ohio Tributary Monitoring Program
OWDA	Ohio Water Development Authority
OWRC	Ohio Water Resources Council
PAHs	polyaromatic hydrocarbons
PHA	public health advisory
ppb	parts per billion
PCB	polychlorinated biphenyls
PCR	primary contact recreation
PDWS	public drinking water supply
POTW	publicly owned treatment works
PS	point source
PTI	permit to install
PTO	permit to operate
PWS	public water supply
QA	quality assurance
QC	quality control
QDC	qualified data collector
QSC	Quicksilver Caucus
RAP	Remedial Action Plan
RAS	return activated sludge
RF3	Reach File Version 3
RM	river mile
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SFY	state fiscal year (July 1 to June 30)
SIU	significant industrial user
sq mi	square miles
SSM	single-sample maximum
STORET	STOrage and RETtrieval (a U.S. EPA water quality database)
STV	statistical threshold value
SWIF	Surface Water Improvement Fund
SWIMS	Surface Water Information Management System
TDS	total dissolve solids
TMDL	total maximum daily load
TNTC	too numerous to count
TOC	total organic carbon
µg	microgram
USDA	United States Department of Agriculture
U.S. EPA	United States Environmental Protection Agency
USC	United States Code
USGS	U.S. Geological Survey
UV	ultraviolet
VIBI	vegetation index of biotic integrity
VIBI-FQ	VIBI – floristic quality
WAS	waste activated sludge
WAUs	watershed assessment unit
WBLE	western basin of Lake Erie

WEG	(Ohio EPA's) wetland ecology group
WHIP	Wildlife Habitat Incentives Program
WHO	World Health Organization
WLA	wasteload allocation
WPCLF	Water Pollution Control Loan Fund
WQ	water quality
WQC	Water Quality Certification (Section 401)
WQM	Water Quality Management (plan)
WQPSD	Water Quality Permit Support Document
WQS	water quality standards
WRP	Wetlands Reserve Program
WRRSP	Water Resource Restoration Sponsor Program
WSRLA	Water Supply Revolving Loan Account
WWH	warmwater habitat
WWTP	wastewater treatment plant

Executive Summary

The *Ohio Integrated Water Quality Monitoring and Assessment Report* summarizes water quality conditions in the State of Ohio. This report satisfies Ohio's water quality reporting requirements under Sections 303(d), 305(b) and 314 of the federal Clean Water Act. This report was last updated in 2016. **Analysis and listing changes are based on data collected during 2015 and 2016 for aquatic life and human health (fish tissue) uses; recreation and public drinking water supplies uses consisted of data from 2016 and 2017**.

Using methods devised to determine the suitability of waters for four specific uses—aquatic life (fish and aquatic insects), recreation (such as boating and swimming), human health (related to fish tissue contamination) and public drinking water supplies—available data were compared with water quality goals. The results indicate which waters are meeting goals and which are not. Waters not meeting the goals for one or more of the four types of uses are referred to as *impaired.* The waters found to be impaired are prioritized and scheduled for further study and restoration.

This report describes the methods used to judge impairment of each type of use and have evolved in each reporting cycle as the Agency gains access to more data and develops better ways to interpret them.

Results are reported for 1,538 watershed units, 38 large river units (in Ohio's 23 rivers that drain more than 500 square miles) and seven Lake Erie units. Additional information on streams draining between 20 and 500 square miles is also presented as this subset of waterbodies is used to calculate and track progress of Ohio's 80 percent full attainment by 2020 goal for wading and principal streams and rivers.

The percent of monitored miles of Ohio's large rivers in full attainment stayed steady compared to the same statistic reported in the 2016 IR. The 100 percent full attainment by 2020 aquatic life goal statistic for Ohio's largest rivers now stands at 87.5 percent, compared to 87.4 percent from the 2016 report. Conversely, smaller streams continue to improve with the percent of assessed sites in full aquatic life use attainment increasing from 66.1 percent to 69.3 percent. The top reasons for aquatic life impairment continue to be sediment, nutrients, habitat modification, hydromodification and organic enrichment.

For the human health use (fish tissue), polychlorinated biphenyl (PCB) contamination in fish is the cause of most of the human health impairments in Ohio. Mercury is the second leading cause.

The chemicals of concern causing impairment of the public drinking water supply use include nitrate, atrazine and cyanotoxin (due to certain algae). The primary source of the chemicals is nonpoint source runoff from agricultural land use. Additional sources of nitrate include home and commercial fertilizer application, failing septic systems, unsewered areas and wastewater treatment plant discharges. Of the 119 public drinking water supply assessment units, 37 are now listed as impaired by algae, with another 17 on the watch list for algae.

The recreation (bacteria) use analysis focuses on the number of bacteria in the water. For Lake Erie public beaches, the frequency of swimming advisories varies widely, ranging from 1.2 percent to more than 50 percent. Generally, beaches located near population centers have the most problems. Results are also reported for streams and inland lakes.

The recreation use has also been assessed for algae impacts in the western basin of Lake Erie. The western basin shoreline, the islands shoreline and the western basin open water assessment units are all listed as impaired by algae.

Of the 6,316 possible category assignments, the 2018 303(d) list includes changes in 209, with 69 delistings and 135 new listings. Most 303(d) removals and new listings are due to new data.

Changes since the 2016 Integrated Report

Changes made between the 2016 Integrated Report and the 2018 Integrated Report are as follows:

- This report contains revised assessment units for the entire Ohio portion of Lake Erie in Section D1.
- This report also discusses future methodology development for recreation assessment of Lake Erie based on algae blooms in Section I.
- The methodology for evaluating the recreation (bacteria) use has been updated to include the revised *E. coli* water quality criteria, effective January 2016, in Section F1.
- A new subcategory, 5p, was added to track which impairments are based on threatened status, primarily for nutrients.

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

D7. Public Comments and Responses to Comments on Draft Report

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

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

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

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

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

Comments Related to Specific Watersheds

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Addressing Waters Not Meeting Water Quality Goals

The federal Clean Water Act (CWA) requires that states identify waters not meeting water quality goals and then prioritize them for action to restore their beneficial uses[1]. The resulting list of prioritized impaired waters is known as the 303(d) list. Ohio's 2018 303(d) list is presented in Section L4 of this report.

Ohio made substantial changes to its listing process in 2010 (see Sections A and J in the *2010 Integrated Report* [Ohio EPA, 2010]); Ohio's *2012 Integrated Report* and 303(d) list (Ohio EPA, 2012) contained relatively few changes compared to the major adjustments made in 2010. A significant change to the 2014 report included the addition of a new indicator (algae) to the public drinking water supply (PDWS) use. The 2016 report contained changes in how the information was organized and what data sets were used (for instance, 2015 data was included for both recreation and PDWS uses) and was amended to include new open water assessment units for Lake Erie and a new recreation assessment methodology based upon algae. In 2018, the most significant changes are to the recreation use assessments and how Lake Erie Assessment Unit are defined (increased from six to seven units). The assessment based on bacteria has been updated to comply with the new *E. coli* WQS which include a 90-day geometric mean and statistical threshold value (see Sections F1-F3). In addition, an assessment method for recreation based on algae for the western basin of Lake Erie has been added in Section F4.

This section outlines the listing framework, lays out the prioritizing and delisting processes and results and reports on the status of Ohio total maximum daily load (TMDL) efforts including schedules for future TMDLs in Ohio.

J1. Ohio's 303(d) Listing Framework

The process of listing involves assigning a condition status (a category) for each of four beneficial uses for each assessment unit (AU). Data requirements, descriptions of available data, assessment methodologies and results were discussed and reported by individual beneficial use in Sections E, F, G and H.

In 2010, Ohio modified the five-category listing structure suggested by U.S. EPA to accommodate listing by beneficial use and introduced subcategories to give more information about the status of each water. In 2012, one additional subcategory - t - was added to aid reporting the status of AUs relative to approved TMDLs and data availability. In 2014, the "t" subcategory was altered slightly and a new category - d - was added to better reflect circumstances encountered as Ohio EPA revisits watersheds having approved TMDLs. In 2016, a new subcategory in Category 5 (5-alternative or 5-alt) was added to report on alternative restoration approaches for CWA 303(d) listed waters. Such waters will still require TMDLs until water quality standards are achieved. Ohio does not have any AUs listed under 5-alt in this report but anticipates using this subcategory in the future. In 2018, a new subcategory "p" is added under Category 5 to track which impairments are based on threatened status, primarily for nutrients. Table J-1 summarizes the categories and subcategories used in this report.

Also, in 2010, Ohio began listing by beneficial use within each AU and reporting on a smaller AU size. Watershed AUs shifted from an average size of 130 square miles to 27 square miles. Under the old system, an impairment of one beneficial use caused the AU to be Category 5 (impaired) regardless of the status of other uses.

[1] Beneficial uses include aquatic life, human health (fish contaminants), recreation and public [drinking] water supply.

Table J-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[2]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[3] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[4]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

Figure J-1 illustrates the significance of these changes in the listing procedures. A = aquatic life use; R = recreation use; H = human health use; and P = public water supply use. The numbers refer to the categories described in Table J-1 above. In the example, an AU listed in 2008 as impaired (category 5) appeared on the 2010 303(d) list as five units with four uses each; thus, reporting one piece of information changed to reporting 20 pieces of information. Whereas the 2008 list indicated only that the unit was impaired, the new listing indicates all the following information:

- Aquatic life use is impaired (5) in one unit, not impaired (1) in one and unknown (3) in one. A TMDL to address impairments has been completed in one unit (4A) and the impairment in the remaining unit is being addressed in some other way (4B, for example, a discharge permit).
- Recreation use is impaired (5) in three units, unknown (3) in one and a TMDL to address the impairment in one unit has been completed (4A).
- Human health results based on fish tissue analysis indicate that four of the five units are impaired (5) and one is unknown (3).
- Public drinking water supplies exist in only two of the five units and one of those is impaired (5). The status of the other is unknown (3).

[2] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[3] HUC means hydrologic unit code.
[4] Ohio currently has no waters that are listed under this subcategory.

For the aquatic life use, Ohio EPA continues the transition that began in 2010 of translating data evaluated at the 11-digit hydrologic unit size to the smaller 12-digit size. We expect that the few remaining relic categories will be dealt with as those areas are monitored again.

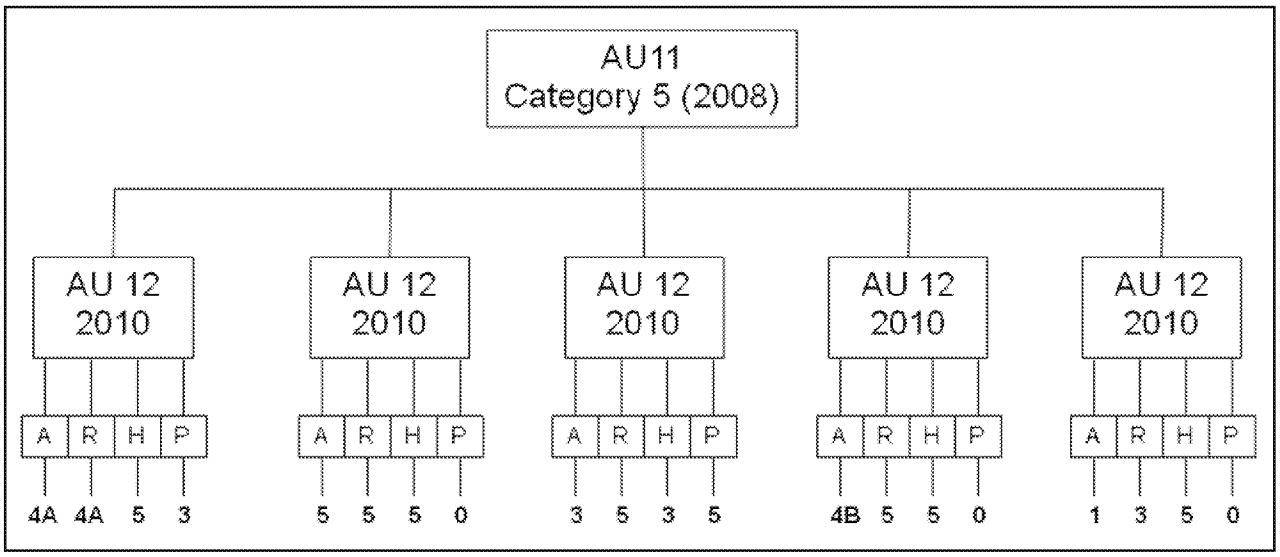

Figure J-1 — Listing by smaller AUs and individual beneficial uses.

Table J-2 shows the number of potential listings that could result from the combination of smaller AUs and listing by individual use.

Table J-2 — Potential listing opportunities in Ohio's listing framework.

	2008 and Before			2010 and After		
AU Types	Number of AUs	Status Reports per Unit	Total Number of Possible Listings	Number of AUs	Status Reports per Unit	Total Number of Possible Listings
Watershed	331	1	331	1538	4	6,152
Large river	23	1	23	38	4	152
Lake Erie shore	3	1	3	3	4	12
Totals	357	1	357	1,579	4	6,316

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

As previously stated, the impaired waters are identified and assigned a category by individual beneficial use in Sections E, F, G and H. After waters are identified as impaired and it is determined that a TMDL is required, the waters are prioritized to produce the 303(d) list (see Section L4). Because Ohio uses a highly integrated monitoring and TMDL linkage to ensure efficient use of resources, it makes sense to continue to set priorities by AU rather than by individual use.

Ohio River and Open Waters of Lake Erie

ORSANCO has lead responsibility for the multi-jurisdictional Ohio River water quality as outlined in Section D2. Binationally, the U.S. and Canada are working together under the GLWQA to address water quality issues in Lake Erie. Ohio EPA is actively participating in TMDLs for tributaries as well as many other actions for Lake Erie outlined in Section J3, so priority for Ohio EPA-initiated TMDLs is assigned a low priority for these waters. TMDLs in watersheds that drain to the Ohio River and Lake Erie will reduce the pollutant load delivered to each water.

Inland Waters and Lake Erie Shoreline

A point system is used to assign priority to impaired AUs. A total of 22 points could be assigned to an AU, distributed as shown in Figure J-2. The priority results for specific AUs are reported in Section L and in AU summary information available on the web page.

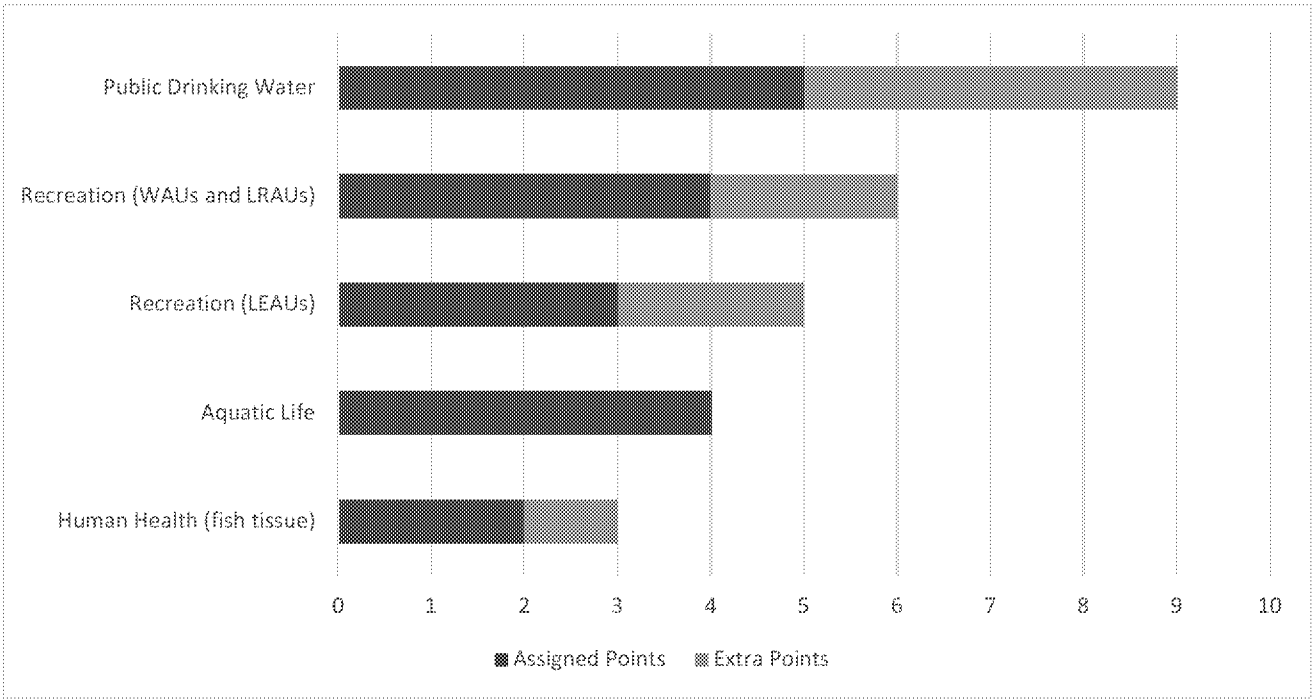

Figure J-2 — Priority points assigned based on use impairment or other factors (extra points).

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.

Two additional points may be awarded to AUs that are impaired for the recreation use and contain Class A waters. Class A waters are those most suitable for recreation, such as popular paddling streams and lakes with public access points developed, maintained and publicized by governmental entities. Priority points for Lake Erie recreation use are calculated based on the bathing water geometric mean for *E. coli* and the percentage of days that the AU exceeded that criteria. An impaired AU gets one point if the percentage of days in exceedance was in the range of 0 to 10 percent; two points if in the range of 10.1 percent to 20

percent; and three points if the percentage of days in exceedance was greater than 20.1 percent. Two additional points may also be awarded to AUs that are impaired for recreation use based on algae.

Table J-3 — Priority points for impaired AUs.

Point Values	Condition	Number of AUs		
		WAUs	LRAUs	LEAUs
Human Health Use impairment (fish tissue contaminants) (maximum of 3 points)				
2	Listed as impaired for Fish Contaminants (Human Health Use)	436	32	4
1	Additional point in AUs that exceed 500 ppb for PCBs or Hg	3	0	0
Recreation Use impairment – WAUs and LRAUs (maximum of 6 points)				
1	Listed as impaired with AU score between 0 and 25	108	0	
2	Listed as impaired with AU score between 75.1 and 100	92	17	
3	Listed as impaired with AU score between 25.1 and 50	271	2	
4	Listed as impaired, with AU score between 50.1 and 75	279	7	
2 extra	Additional points if AU contains Class A waters	74	26	
Recreation Use impairment - LEAUs (maximum of 5 points)				
1	Listed as impaired with 0 to 10% of season exceeding *E. coli* criteria			1
2	Listed as impaired with 10.1% to 20% of season exceeding *E. coli* criteria			1
3	Listed as impaired with > 20.1% of season exceeding *E. coli* criteria			2
2 extra	Additional points if AU is impaired for algae			3
Aquatic Life Use impairment (maximum of 4 points)				
1	Listed as impaired, with AU score between 0 and 25	161	0	2
2	Listed as impaired, with AU score between 75.1 and 100	35	8	0
3	Listed as impaired, with AU score between 25.1 and 50	119	2	2
4	Listed as impaired, with AU score between 50.1 and 75	93	2	0
Public Drinking Water Use impairment (maximum of 9 points)				
5	Listed as impaired for Public Drinking Water Use for one indicator	33	5	6
2 extra	Additional points in AUs impaired for each additional indicator	1	3	0
1	Not listed as impaired, but on watch list; one point for each indicator	33	3	0

As outlined in Section C3, the priority schedule for TMDL projects in Table J-15 was developed considering the above information, as well as the following:

- Social Factors (highly used recreational waters, drinking water supply for significant populations, ongoing/sustained involvement of any local groups or government, etc.)
- Value Added (is a TMDL the most efficient way to achieve improved water quality?)
- Is there an approved watershed action plan – if so how many implemented projects?
- How much regulatory authority exists over sources?
- Is there an alternative way to improve water quality more quickly than a TMDL? (for example, immediate implementation of an existing plan or projects, or imposing more stringent permit limits to address a localized problem)
- Are there other factors in play? Examples include:
    - Pending enforcement for a discharger (possible 4B option)
    - U.S. Army Corps of Engineers modeling of reservoir discharge to improve downstream water quality
    - Local or statewide strategy or requirements in place to address an issue/pollutant (for example, new health department rules for home sewage treatment systems if they are sole/primary source of impairment)

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.

In the *2014 Integrated Report*, Ohio listed waters impaired by algal toxins for the first time. In the 2016 report, more waters are listed, especially lakes and reservoirs. 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.

Based on a review of the inland lakes or reservoirs that were listed as impaired or on the Watch List for algae indicators in the 2014 Integrated Report, as well as the more recent data collected for algae at PDWS with intakes in inland lakes or reservoirs that led to the 303(d) listing in this report, the following inland lakes were chosen as Ohio's priorities for the next few years:

- Tappan Lake in Harrison county (upper Little Stillwater Creek)
- W.H. Harsha Lake in Clermont County (Lucy Run - East Fork Little Miami River)
- Clyde/Beaver Creek Reservoir in Seneca County (Beaver Creek, Green Creek)

The impairments (or watch list parameters) cited include nitrate, pesticides and algae indicators. Where there is a TMDL developed, it is older and/or does not include the stream reaches that most impact the lake/reservoir. In most cases, there are active local parties interested and/or there is a sizable population served by these sources. Ohio EPA considers nutrients (primarily phosphorus as the TMDL parameter) to be the priority for the inland lake efforts. However, the cause of impairment in more than one area also includes pesticides and/or nitrates, so other pollutants may be added to the TMDL or alternative plan. These waters are listed on the 303(d) Priority list in Section L4 as follows:

AU Number	AU Name	Sq. Mi. in Ohio	Human Health	Recreation	Aquatic Life	PDW Supply	Priority Points
05040001 15 03	Upper Little Stillwater Creek	29.72	1	1	3	5	5
05090202 12 03	Lucy Run-East Fork Little Miami River	32.48	1	1	5	5	7
04100011 12 02	Beaver Creek	29.3	3i	4Ah	4A	5	5
04100011 12 03	Green Creek	30.78	1	5	4A	5	9

While they do not have the highest priority points, the AUs with higher priority points that include a PDWS impairment already have a TMDL under development or will be addressed through other means such as the Great Lakes Water Quality Agreement Annex 4 nutrient reduction efforts discussed in J3.

Tappan Lake

- Stillwater Creek basin – primarily forest with mining influences.
- 2,350 acres of water surface.
- Provides drinking water to the Village of Cadiz (pop. ~ 3,350).
- Lake is operated by the U.S. Army Corp of Engineers. It is a multipurpose project for flood reduction, recreation and fish and wildlife enhancement.
- Assessed by Ohio EPA in 2012-2013 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin).

2018 IR Update

The Tappan Lake Nutrient Reduction Initiative (TLNRI) was formed at the end of 2017 by the Muskingum Watershed Conservancy District and the Village of Cadiz. TLNRI's goal is to eliminate the presence of harmful algal blooms and their resultant water-borne toxins in Tappan Lake within the next decade. The TLNRI has outlined the following steps toward achieving their goal:

- Phase 1: Comprehensive study of existing water quality data for the watershed and identification of gaps (year one)
- Phase 2: Collection of data to fill gaps, evaluation and selection of remedial actions for the watershed (years two through four)
- Phase 3: Implementation of action plan for the watershed (years five through 10)

Ohio EPA is an active partner in the initiative and will provide support through participation in the four subgroups. The Stillwater Creek watershed is a high priority project for either a TMDL or an alternative plan. The Agency will continue to participate in the TLNRI efforts and determine which approach is most appropriate as that work unfolds.

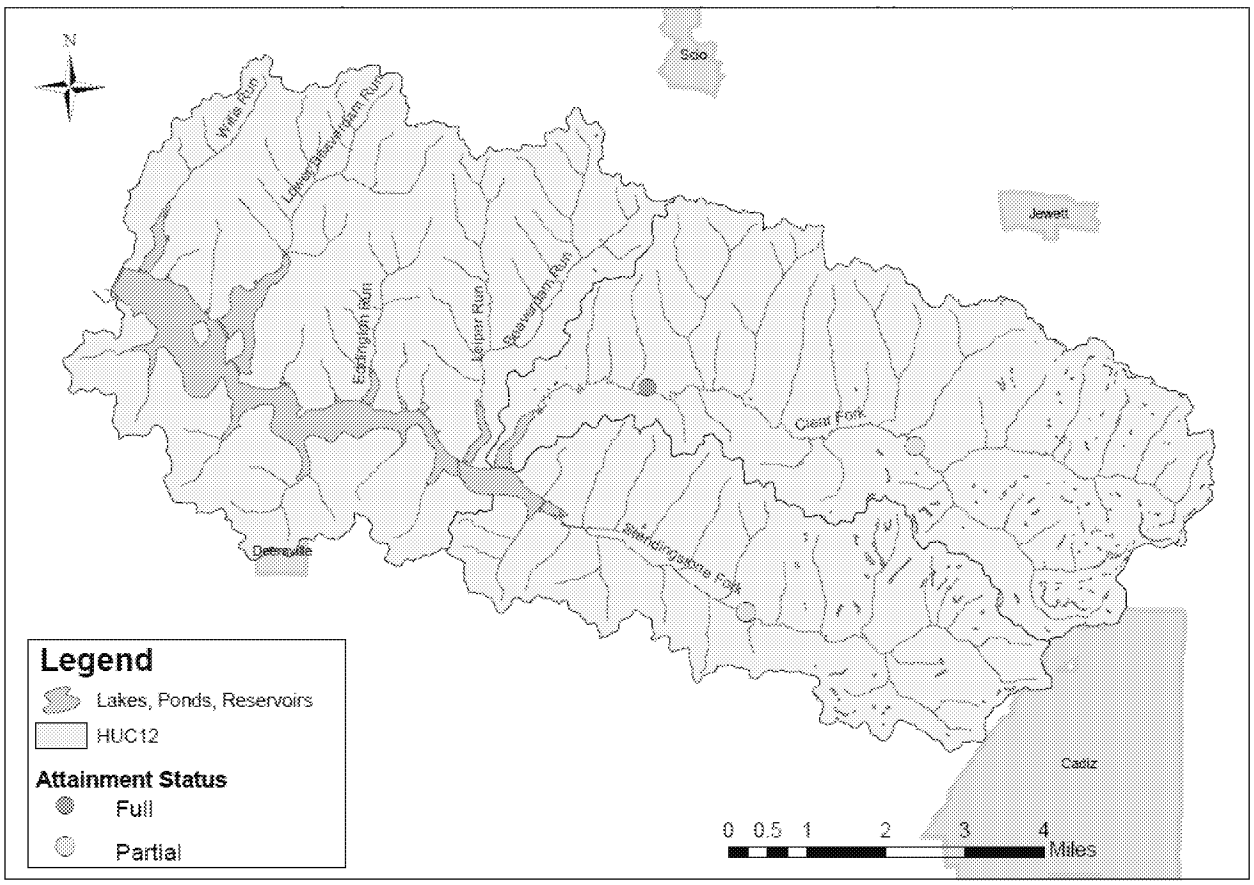

Figure J-3 — Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey.

William H. Harsha Lake

- Located in the East Fork of the Little Miami River watershed – largely agriculture and forest with some urban influence.
- 2,160 acres of water surface.
- Lake is operated by the U.S. Army Corp of Engineers and is a multipurpose project for flood reduction, water supply, recreation and wildlife habitat.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin) and placed it on the watch list for atrazine.

From the *Ohio EPA East Fork Little Miami River Technical Support Document, 2014*:

- Clermont County operates a community public water system that serves a population of approximately 117,097 people. The water supply sells water to the village of Batavia, village of Williamsburg and New Richmond Robin-Grays water system. Clermont County operates two ground water plants and one surface water plant. The BMW surface water plant draws water from an intake structure on Harsha (East Fork) Lake. The system's treatment capacity is approximately 27.5 million gallons per day, but current average production is 12.5 million gallons per day.
- There are several environmental organizations active in the East Fork Little Miami River watershed. The oldest of these is Little Miami Incorporated (LMI) which has been active for 45 years. Most of LMI's activities have involved the purchase of conservation easements or property purchases in the riparian zone of the river. Clermont County and SWCDs in Clermont, Brown, Highland and Clinton counties formed the East Fork Watershed Collaborative to take advantage of ODNR's Watershed Coordinator Program.
- Several research projects have been initiated in the East Fork watershed and Harsha Lake by U.S. EPA's National Exposure Research Laboratory in Cincinnati and the U. S. Army Corps of Engineers. Among other topics research and monitoring are examining HABs and nutrients, impacts on the Clermont County water intake, carbon sequestration, methane release, nutrient trading, environmental tipping points and fish population genetics. Currently, seven different projects are conducting monitoring in Harsha Lake.

2018 IR Update

The East Fork Watershed Cooperative, formed in 2001, continues to be active in addressing water quality issues in the East Fork Little Miami River watershed. The Cooperative is in the process of updating watershed action plans into Nine Element Nonpoint Source Implementation Strategy Plans. The first updated plan for the Fivemile Creek HUC 12, approved by Ohio EPA on July 31, 2017, is located upstream of Harsha Lake. The East Fork Little Miami River watershed is a high priority TMDL project for TMDL development. The Agency plans to initiate the next steps in the TMDL development process by the 2020 IR.

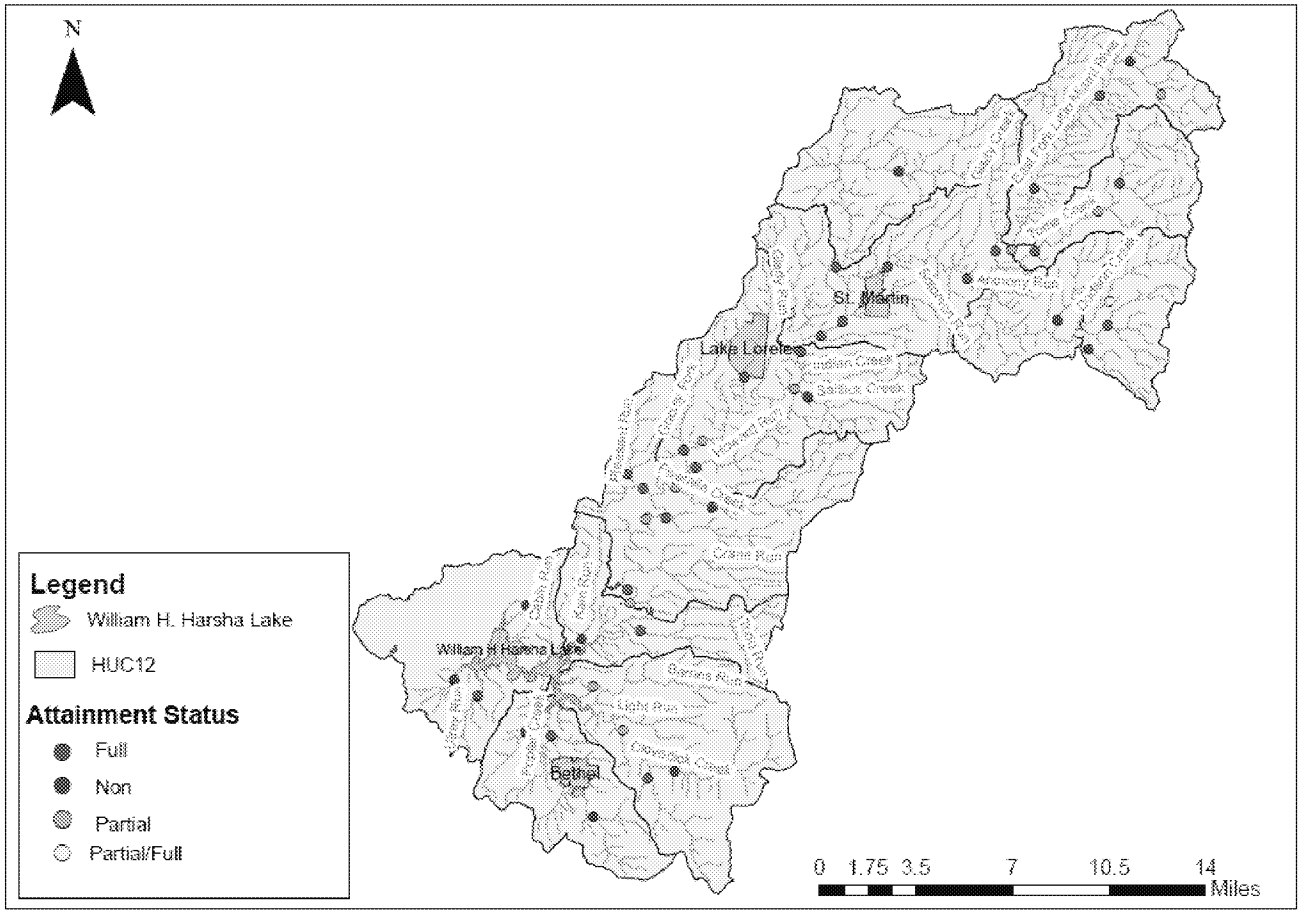

Figure J-4 — Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey.

Clyde/Beaver Creek Reservoir (up-ground)

- Sandusky river watershed - primarily agricultural land use above reservoir.
- 110 acres of water surface.
- Provides drinking water to the City of Clyde (pop. ~6,320).
- Reservoir was assessed by Ohio EPA in 2009-2010 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* placed the lake on the watch list for PDWS use based on algae indicators (microcystin) and nitrates. In the *2016 Integrated Report* it was listed as impaired for PDWS use based on algae indicators.
- The Raccoon Creek reservoir that also serves the City of Clyde is filled with water from Beaver Creek. The Raccoon creek reservoir was listed in the 2014 IR as impaired for PDWS based on algae indicators (microcystin).
- A TMDL for the lower Sandusky River was completed by Ohio EPA and approved by U.S. EPA but did not set specific loads for Beaver Creek since the stream was not listed as impaired.

2018 IR Update

Sampling of Raccoon Creek reservoir was completed in 2016 and 2017 as part of Ohio EPA's inland lakes sampling program. The results of this sampling will be included in the 2020 IR and will be used to direct the next steps in the restoration process for this watershed.

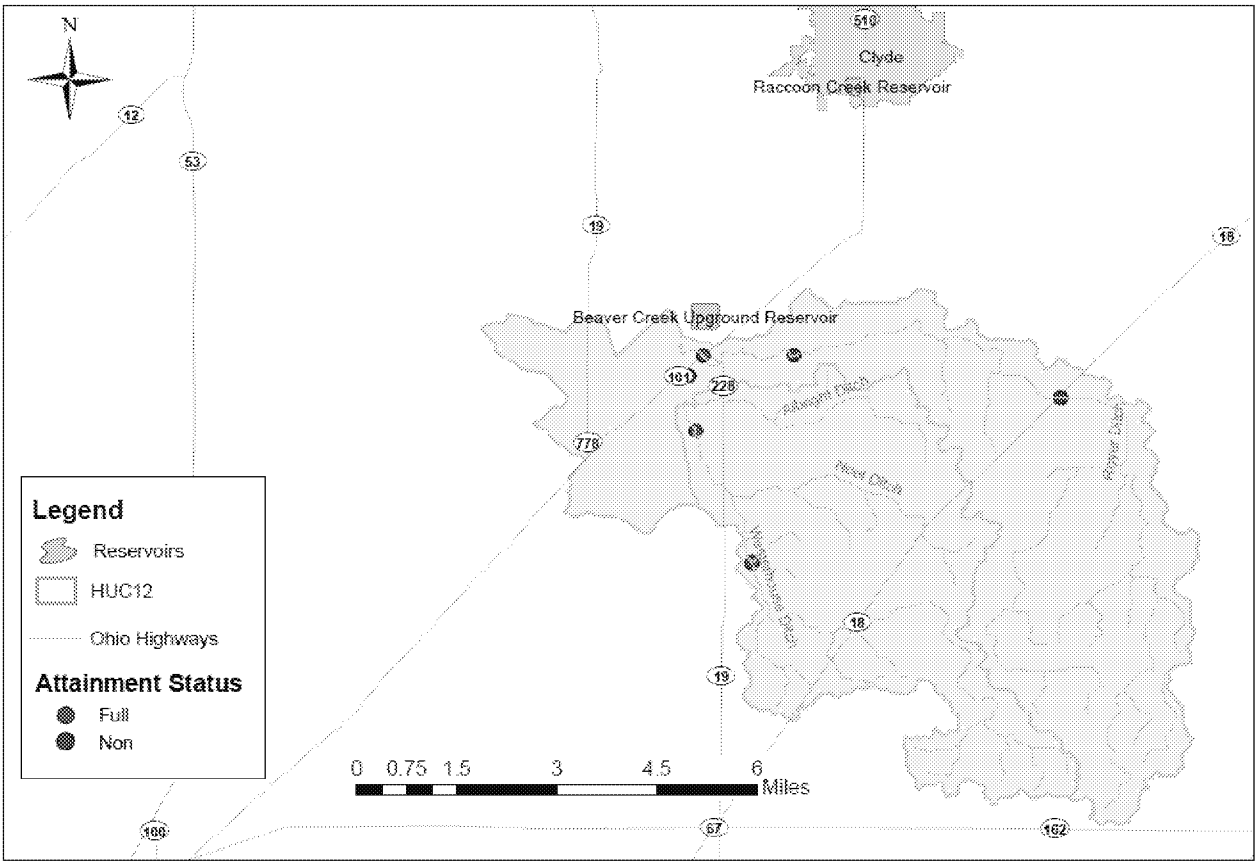

Figure J-5 — Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009.

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 in accordance with the Domestic Action Plan; and active participation on Annex 4 (Nutrients) and other Great Lakes Water Quality Agreement (GLWQA) efforts. Effective lake management and coordinated implementation are needed to address the Western Basin of Lake Erie algal blooms and the Central Basin hypoxia issues, requiring a multi-state and binational effort. Currently, there are many parallel planning and management efforts ongoing at the state, federal and binational level. For the open waters of Lake Erie, respecting and working through the binational governance framework is the appropriate process and Ohio intends to aggressively pursue state measures that complement the process and are neither duplicative nor contradictory.

Great Lakes Water Quality Agreement

Binationally, the U.S. and Canada are working together under the GLWQA to develop nutrient reduction strategies; and create and implement action plans to meet the targets. Annex 4 of the 2012 GLWQA specifically addresses nutrients in the Great Lakes and contains short-term requirements specific for Lake Erie. The U.S. and Canada formally adopted new phosphorus targets for the western and central basins of Lake Erie in February 2016. These targets have been incorporated into Ohio's Domestic Action Plan and are the goals for all the state's efforts to reduce phosphorus loading to the lake.

As water quality has improved through the decades, Ohio EPA has addressed most of the significant point source problems and are now left with primarily nonpoint source related impairments. The current Lake Erie algal blooms and Central Basin hypoxic zone are driven by nutrient loading to the Lake. Recent assessments by the Ohio Phosphorus Task Force (Phases I and II) and Annex 4's Objectives and Targets Task team, as well as a Nutrient Mass Balance Study completed by Ohio EPA in December 2016, 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 waterbody (Lake Erie). To compliment the 40 percent phosphorus reduction goals set forth by the Annex 4 committee, a separate analysis is being done to set seasonal/annual load reductions targets for the smaller tributaries (for example, within the Maumee basin). Ohio is directly involved in developing these goals and reduction targets needed for Lake Erie while moving forward on developing implementation strategies and acting to reduce nutrient contributions to the lake.

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.

Lake Erie Collaborative Agreement

The Lake Erie Collaborative Agreement was another state/province led-initiative; it was signed in June 2015 by Ohio, Michigan and Ontario (*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. One of the goals spelled out in the Collaborative Agreement was to reduce nutrient levels going into Lake Erie by 40 percent. The other was to develop a strategic plan to manage dredge material 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.

Ohio's Domestic Action Plan for Lake Erie

The State of Ohio's Domestic Action Plan expanded upon the *Collaborative Implementation Plan* and was submitted to U.S. EPA on Feb. 7, 2018. The commitment to meet the Collaborative Agreement phosphorus reduction goals of 20 percent by 2020 and 40 percent by 2025 was also incorporated into this plan. The plan is not intended to static but to be revised following the adaptive management philosophy. (*lakeerie.ohio.gov/Portals/0/Ohio DAP/DAP 1-0 Final for USEPA 2018-02-07.pdf*).

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 continue utilizing this tool to target implementation in Ohio's Lake Erie watersheds as it works to meet the Annex 4 phosphorus targets and allocations.

The TMDL document 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.

Ohio has completed TMDLs 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 nutrients and algae and have established phosphorus 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. However, Ohio is working with U.S. EPA, Tetratech (the contractor), Indiana and Michigan to develop a method for setting load reduction goals for the smaller tributaries to Lake Erie (for example, the tributaries to the Maumee river) and evaluate whether the tributary TMDLs will provide the load reductions needed to protect the lake. Where the local TMDL reductions are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps.

The Annex 4 process of developing loading targets and Domestic Action Plans are very similar 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.

State TMDL vs Binational Annex 4

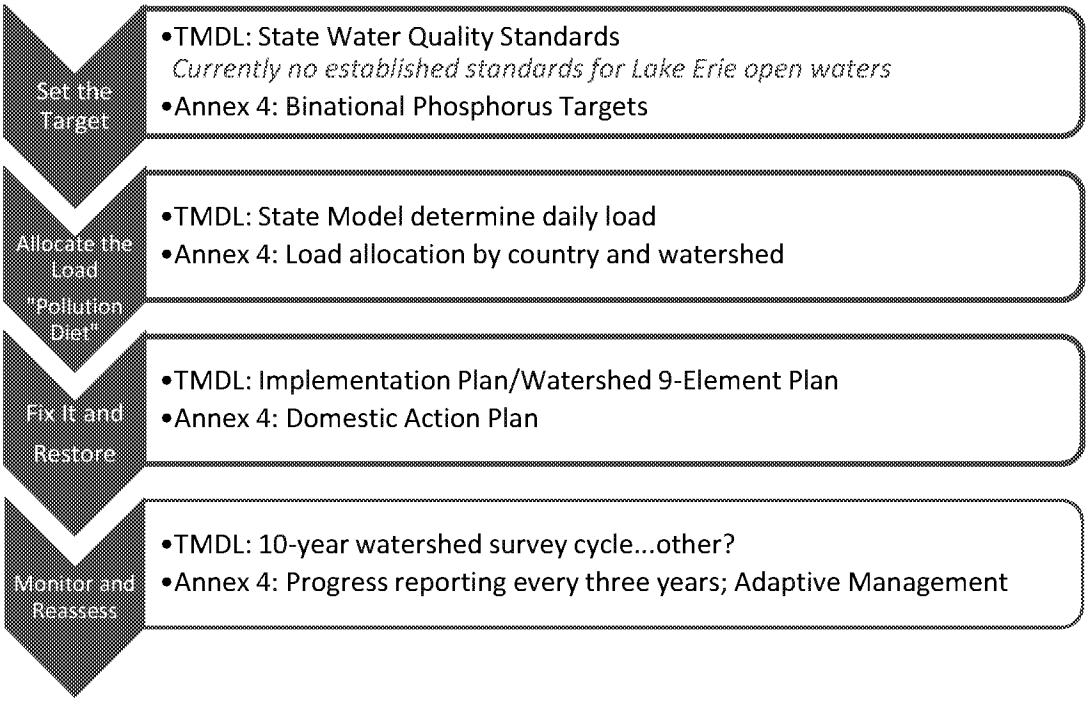

Figure J-6 — Key steps in the state TMDL and binational Annex 4 processes.

Ohio-based Nutrient Reduction Efforts

Ohio EPA's *NPS Management Plan* (Plan) is the Agency's guiding document that outlines recommended strategies, goals and objectives for controlling nonpoint sources of water quality impairment. The Plan was most recently updated in 2014 and identifies specific management activities to be implemented by Ohio EPA's NPS management program. The recent algal blooms on Lake Erie, the Ohio River and across the inland waters of Ohio were caused by excessive nutrients and exacerbated by changing weather patterns such as warmer temperatures and more intense storm events. The long-term solution is to reduce sources of nutrients while holistically restoring stream health and improving the waterway's ability to assimilate and utilize nutrients. This is also known as the stream's assimilative capacity. Restoring stream health will not only reduce the amounts of nutrients that reach the receiving water body, but restoration of in-stream and riparian habitat supports a healthy ecosystem, builds resilience to climate change impacts and improves recreational opportunities. The most current version of Ohio's *NPS Management Plan* is available at *epa.ohio.gov/Portals/35/nps/NPS_Mgmt_Plan.pdf.*

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 in 2010 and has expanded the scope and scale of implementation, developed a statewide strategy, targeted funding and undertaken legislative action to address the problem. As part of the more than $3 billion Ohio has invested comprehensively in the Lake Erie watershed, more than $150 million was made available starting in 2014 to help to public water systems keep drinking water safe and wastewater facilities reduce the amount of phosphorus they discharge into the Lake Erie watershed. In addition, Ohio continues to target millions of dollars to support local health departments to find and fix faulty residential septic systems that are contributing nutrients to Ohio waters.

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

- 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 *epa.ohio.gov/dsw/wqs/NutrientReduction.aspx*.
- GLRI Demonstration and Nutrient Reduction Projects — Nine grants totaling more than $13.9 million were awarded to Ohio. Highlights include: installation of the first two saturated buffers installed in Ohio; installation of approximately 70 controlled drainage structures; development of 52 whole farm conservation plans; planting of more than 9,000 acres of cover crops; installation and planting of 50 acres of reconstructed or restored wetlands; restoration of 3,500 linear feet of stream and 500 feet of streambank stabilization; installation of 4,400 feet of two-stage ditches; installation of rain gardens and vegetated infiltration basins in the Toledo area; and completion of 29 storm water, wetland and stream restoration projects in Cuyahoga County.
- 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[5]; 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.
- Ohio Senate Bill 150 — This bill, effective Aug. 21, 2014, requires, among other things, that beginning Sept. 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.
- Ohio HB 64 — This bill, effective June 30, 2015, required 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 *legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-64*.
- 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.
- 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.
- 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 several recommendations to be implemented during the next several years. For example,

[5] "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.

the report recommends ways for farmers to better manage fertilizers and animal manure and 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 *agri.ohio.gov/topnews/waterquality/docs/FINAL_REPORT_03-09-12.pdf.*

- 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 *lakeerie.ohio.gov/Portals/0/Reports/Task_Force_Report_October_2013.pdf.*
- 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 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 *epa.ohio.gov/portals/35/documents/point_source_workgroup_report.pdf.*

J4. Summary of Results

The consolidated results of the 2018 analysis are shown in Table J-4 and Figure J-7 — Summary of 2018 IR results for watershed AUs by beneficial use. through Figure J-9.

Table J-4 — Summary of results for each beneficial use[6]

	Human Health (fish tissue)	Recreation	Aquatic Life	Public Drinking Water Supply
Watershed assessment units				
Not being used for PDWS	0	0	0	1434
Attains	230	157	500	31
Unknown	872	186	109	39
Impaired, needs TMDL	436	750	411	33
Impaired, TMDL complete	0	445	408	1
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	14	0
Impaired, natural condition	0	0	96	0
Total watersheds considered	**1538**	**1538**	**1538**	**1538**
Large river assessment units				
Not being used for PDWS	0	0	0	29
Attains	6	3	18	0
Unknown	0	3	0	4
Impaired, needs TMDL	32	26	12	5
Impaired, TMDL complete	0	6	5	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	3	0
Impaired, natural condition	0	0	0	0
Total large rivers considered	**38**	**38**	**38**	**38**
Lake Erie assessment units				
Not being used for PDWS	0	0	0	1
Attains	0	0	0	0
Unknown	3	2	3	0
Impaired, needs TMDL	4	5	4	6
Impaired, TMDL complete	0	0	0	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	0	0
Impaired, natural condition	0	0	0	0
Total Lake Erie considered	**7**	**7**	**7**	**7**

[6] 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.

L

Summary Tables of Waterbody Conditions; Lists of Prioritized Impaired Waters; and Monitoring and TMDL Schedules

Section L contains tables showing the 303(d) listing details for each of the assessment unit types and is divided into five sections as follows:

- Section L1: Status of Watershed Assessment Units
- Section L2: Status of Large River Assessment Units
- Section L3: Status of Lake Erie Assessment Units
- Section L4: Section 303(d) List of Prioritized Impaired Waters
- Section L5: Category 4B demonstrations contained in approved Ohio TMDLs to date

In Sections L1 through L4, there are four columns labeled, in order, Human Health, Recreation, Aquatic Life and PDW Supply. These four columns represent each beneficial use included in the 303(d) list of impaired waters and the numbers in the columns represent the category for that assessment unit for that beneficial use. Table L-1 defines the categories and subcategories assigned to each use.

Table L-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[1]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[2] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[3]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

[1] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[2] HUC means hydrologic unit code.
[3] Ohio currently has no waters that are listed under this subcategory.

05090202 90 02	Little Miami River Mainstem (O'Bannon Creek to Ohio River)	1757	5	4Ah	5	0	4

Section L3. Status of Lake Erie Assessment Units		Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
Assessment Unit	Assessment Unit Name						
041202000101	Lake Erie Islands Shoreline (≤3m)	4.99	5	5	5	5	14
041202000201	Lake Erie Western Basin Shoreline (≤3m)	47.88	5	5	5	5	17
041202000202	Lake Erie Sandusky Basin Shoreline (≤3m)	68.01	5	5	5	5	16
041202000203	Lake Erie Central Basin Shoreline (≤3m)	13.39	5	5	5	0	9
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
041202000302	Lake Erie Sandusky Basin Open Water (>3m)	361.71	3i	3	3	5	5
041202000303	Lake Erie Central Basin Open Water (>3m)	2544.98	3i	3	3	5	5

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 37 of 38. PageID #: 9510

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Section L4. Section 303(d) List of Prioritized Impaired Waters							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
041202000201	Lake Erie Western Basin Shoreline (<=3m)	47.88	5	5	5	5	17
04100009 90 02	Maumee River Mainstem (Beaver Creek to Maumee Bay)	6608	5	5h	5	5	16
041202000202	Lake Erie Sandusky Basin Shoreline (<=3m)	68.01	5	5	5	5	16
04100009 90 01	Maumee River Mainstem (Tiffin River to Beaver Creek)	6058	5	5h	5	5	15
05030103 08 06	Burgess Run-Yellow Creek	20.19	5h	5h	5	5	15
041202000101	Lake Erie Islands Shoreline (<=3m)	4.99	5	5	5	5	14
04100005 90 01	Maumee River Mainstem (IN border to Tiffin River)	2315	5	5h	1	5	13
04100007 12 06	Big Run-Flatrock Creek	48.28	5	5h	5	1	12
05040003 03 04	Delano Run-Kokosing River	32.95	5	5h	5	0	12
05060001 04 06	Glade Run-Scioto River	38.34	5h	5h	5	3i	12
05060001 06 02	Middle Mill Creek	59.91	3	5h	5d	5	12
05090202 10 05	West Fork East Fork Little Miami River	28.88	1h	5h	5	5	12
05030103 90 01	Mahoning River Mainstem (Eagle Creek to Pennsylvania Border)	1075	5	5h	5	0	11
05080002 90 02	Great Miami River Mainstem (Four Mile Creek to Ohio River)	5371	5	5h	5	0	11
04100006 03 03	Flat Run-Tiffin River	33.17	5	5h	5	3i	11
04100007 06 04	Dry Fork-Little Auglaize River	57.07	1	5h	1	5	11
04110002 02 03	Lake Rockwell-Cuyahoga River	61.33	5	5	4Ah	5	11
05060001 90 02	Scioto River Mainstem (Olentangy River to Big Darby Creek)	2641	5	5h	5	0	10
05080001 90 01	Great Miami River Mainstem (Tawawa Creek to Mad River)	1853	5	5h	5	3i	10
04100003 02 04	West Branch St Joseph River	14.76	5	5h	5	0	10
04100004 02 05	Prairie Creek-St Marys River	42.22	5	5h	5	0	10
04100004 03 03	Yankee Run-St Marys River	59.44	5	5h	5	0	10
04100006 05 02	Brush Creek	66.01	5h	5h	5	0	10
04100012 02 04	Mouth Vermilion River	28.13	5	5h	5h	1	10
04110003 01 05	Lower Ashtabula River	18.27	5	5h	5	0	10
05030103 08 05	Headwaters Yellow Creek	19.36	3	5h	5	5	10
05080002 07 04	Dicks Creek	27.71	5h	5h	5	0	10
05090202 02 06	Shawnee Creek-Little Miami River	32.07	5h	5h	5d	0	10
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
05060001 90 01	Scioto River Mainstem (L. Scioto R. to Olentangy R.); excluding O'Shaughnessy and Griggs reservoirs	1068	5	3i	5	5	9
04100001 03 07	Heldman Ditch-Ottawa River	28.15	5	5h	5	0	9
04100003 03 03	Eagle Creek	35.00	5h	5h	5	0	9
04100004 01 02	Center Branch St Marys River	29.00	5h	5h	5	0	9
04100004 02 04	Twelvemile Creek	23.58	5h	5h	5	0	9
04100009 06 03	Haskins Road Ditch-Maumee River	15.73	3	5h	1	5	9
04100011 12 03	Green Creek	30.78	1	5h	4A	5	9
04110001 01 08	Baker Creek-West Branch Rocky River	26.08	5	5h	5	0	9

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 38 of 38. PageID #: 9511

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

INTRODUCTION AND SUMMARY

Defendants oppose Plaintiffs' Motion for Leave to File Supplemental Complaint, Doc. 36, because both of Plaintiffs' proposed supplemental counts fail to state a claim upon which relief may be granted. First, both counts seek to challenge EPA's approval of Ohio's 2016 list of impaired waters, but EPA's July 9, 2018, approval of Ohio's 2018 list supersedes the 2016 list and moots Plaintiffs' claims. Second, Plaintiffs' proposed supplemental count one, a claim under the Administrative Procedure Act ("APA"), fails to state a claim because Plaintiffs fail to identify a final agency action. Although EPA's approval of Ohio's 2016 list is a final agency action as to the listing of impaired waters, Plaintiffs are not challenging that decision. Instead, Plaintiffs argue that Ohio decided it would never submit a total maximum daily load ("TMDL") for western Lake Erie and argue that EPA approved that purported "no TMDL" decision. In fact, Ohio made no such decision, nor did EPA. Third, Plaintiffs' proposed supplemental count two, pled in the alternative as a violation of a nondiscretionary duty, fails to state a claim because it, too, rests of the false premise that

Ohio decided it would never submit a TMDL for western Lake Erie. Because Ohio has not "constructively submitted" no TMDL for western Lake Erie, any statutory duty to review that "constructive submission," should such a duty exist, has not been triggered.

EPA further cross-moves for summary judgment on the existing Complaint, which challenges an action – EPA's May 19, 2017, approval of Ohio's 2016 Section 303(d) List absent the inclusion of the open waters of Lake Erie – that has long since been reversed through subsequent action by EPA and the State and is therefore completely moot.

BACKGROUND

A. Statutory and Regulatory Background

As part of the Clean Water Act's ("CWA") cooperative state/federal framework for addressing water quality, each state must identify waters within its boundaries for which existing pollution controls are not stringent enough to meet applicable water quality standards. 33 U.S.C. § 1313(d)(1). Such waters are known as "water quality limited segments" pursuant to 40 C.F.R. § 130.2(j) or colloquially as "impaired

waters." Every two years, a state must submit a list of water quality limited segments still requiring TMDLs. 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(d)(1). Because the list is required by Section 303(d) of the CWA, 33 U.S.C. § 1313(d), it is commonly referred to as the "Section 303(d) list."

Each state must establish a priority ranking for the water quality limited segments on its Section 303(d) list, taking into account the severity of pollution and the uses to be made of those waters. 33 U.S.C. § 1313(d)(1)(A). States must also identify among those waters which ones are targeted for TMDLs within the next two years. 40 C.F.R. § 130.7(b), (d). States are required to establish TMDLs for each water quality limited segment on their Section 303(d) lists, in accordance with the priority ranking. 33 U.S.C. § 1313(d)(1)(C); 40 C.F.R. § 130.7(c)(1). TMDLs are plans that set the quantity of a pollutant that may be introduced into a receiving water without exceeding applicable water quality standards, taking into account seasonal variations and an adequate margin of safety. 33 U.S.C. § 1313(d)(1)(C). Calculations to establish TMDLs are subject to public review. 40 C.F.R. §

130.7(c)(1)(ii).

Ohio, like many states, combines its Section 303(d) list with a water quality report and submits both together as an "integrated report." In *Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017), the court erroneously stated that states identify their impaired waters *and* establish their TMDLs by submitting these integrated reports. 266 F. Supp. 3d at 176.[1] That misreads the statute, regulations, and EPA's guidance. Section 303(d) lists and integrated reports on the one hand, and TMDLs on the other, are distinct and very different documents and actions. Section 1313(d)(1)(A) requires states to "identify" impaired waters; section 1313(d)(1)(C) then requires states to "establish" for those identified waters a TMDL.

EPA regulations carry forward this distinction. In 40 C.F.R. § 130.7, subsection (b) addresses the "identification and priority setting for water quality-limited segments still requiring TMDLs," *i.e.*, the Section 303(d) list, while subsection (c) addresses the TMDLs

[1] *See also* April 11, 2018, Order, Doc. 29 at 8.

themselves. Thus, while an integrated report typically contains the Section 303(d) list, including a priority ranking of water quality limited segments still requiring TMDLs and the state's schedule for which TMDLs will be developed over the next two years, the TMDLs themselves are not part of the integrated report (or the Section 303(d) list), nor are they typically submitted with that report.

The timing provisions for Section 303(d) lists and for TMDLs are also distinct. The statute sets a deadline for the initial list of "waters identified" and the initial "loads established" based on when EPA first identifies relevant pollutants under Section 304(a)(2)(D) of the Act, but otherwise Section 303(d) lists and TMDLs are due "from time to time" under the statute. 33 U.S.C. § 1313(d)(2). EPA regulations require states to submit Section 303(d) lists every two years, but there is no similar regulatory deadline for states to submit additional TMDLs. 40 C.F.R. § 130.7(d)(1). Instead, TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." *Id.* There is no statutory or regulatory timeframe, deadline, or other restriction on

the timing for states to submit TMDLs, or for states and EPA to determine schedules.

Therefore, as explained by longstanding EPA guidance, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, at 63 (July 29, 2005) ("2006 Assessment Guidance"), available at https://www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf.[2] This guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57. EPA has also explained that "[i]n some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the

[2] The 2006 Assessment Guidance focuses on how to assess, categorize, and report on water quality attainment and supporting data and information. 2006 Assessment Guidance at 6. It does not address how to develop or submit TMDLs.

applicable standard is met)." *Id.*

Once a state submits a Section 303(d) list, or a TMDL, EPA must approve or disapprove the submission within 30 days. 33 U.S.C. § 1313(d)(2). If EPA disapproves a Section 303(d) list, EPA must identify the water quality limited segments that should be on the list, and must do so within 30 days after the date of disapproval. *Id.* EPA must then "promptly issue a public notice" and take comment on the water quality limited segments so identified. 40 C.F.R. § 130.7(d)(2). Finally, after considering the comments received, EPA must then make any appropriate revisions to the list. Similarly, if EPA disapproves a state TMDL, EPA must establish its own TMDL within 30 days after EPA's disapproval. *Id.*

If EPA approves a Section 303(d) list or disapproves a list and identifies waters for the state or approves or disapproves a TMDL that has been publicly noticed, those actions are final agency actions that an interested party may challenge under the Administrative Procedure Act. If EPA fails to act, an interested party can sue EPA for its failure to perform "any act or duty under this chapter which is not

discretionary with [EPA]." 33 U.S.C. § 1365(a)(2). However, no such action may be commenced "prior to sixty days after the plaintiff has given notice of such action to the Administrator [of EPA]." *Id.* § 1365(b)(2). EPA's regulations specify the form and content of the required notice. *See, e.g.*, 40 C.F.R. § 135.2(a)(3) (notice must be accomplished by certified mail and sent to specific recipients); 40 C.F.R. § 135.3(b) (notice must identify the statutory provision which requires the nondiscretionary action and describe with "reasonable specificity" the action taken or not taken).

B. Factual Background

Ohio submitted its 2016 integrated report (including its 2016 Section 303(d) list) on October 20, 2016. EPA approved Ohio's 2016 Section 303(d) list on May 19, 2017, but withdrew that approval on January 12, 2018. Ohio supplemented its 2016 Section 303(d) list on May 4, 2018, and EPA approved that amendment on May 10, 2018.

On June 1, 2018, Ohio submitted its 2018 integrated report (and 2018 Section 303(d) list), and on July 9, 2018, EPA approved Ohio's 2018 Section 303(d) list. In both the 2016 Section 303(d) list (as

amended and approved in May 2018) and the 2018 Section 303(d) list, Ohio listed as impaired three assessment units for the open waters of Lake Erie: the Western Basin, the Sandusky Bay area, and the Central Basin. These open water assessment units are in addition to several shoreline assessment units, including public drinking water supply intake zones, that are also identified in both reports as impaired.

ARGUMENT

Although leave to supplement a pleading "shall be freely given when justice so requires," a motion to supplement under Fed. R. Civ. P 15 should be denied if the amendment would be futile, *i.e.*, if the amendment "could not withstand a Rule 12(b)(6) motion to dismiss." *Riverview Health Institute LLC v. Medical Mutual of Ohio*, 601 F.3d 505, 520 (6th Cir. 2010) (internal citations and quotations omitted). Because neither of the proposed additional counts state a claim on which relief may be granted, the amendment would be futile and should be denied.

I. Both of Plaintiffs' Proposed New Counts Are Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Both of Plaintiffs' proposed counts fail to state a claim because

they challenge EPA's approval of Ohio's 2016 Section 303(d) list, but that list (and EPA's approval thereof) has been superseded by the 2018 list (and EPA's approval thereof). In *Blue Water Baltimore*, 266 F. Supp. 3d at 180-181, the court found that EPA's approval of a state's 2014 303(d) list superseded its approval of the preceding 2012 303(d) list, thus mooting plaintiffs' challenge to EPA's approval of the 2012 list. This Court should do the same, and hold that Ohio's 2018 Section 303(d) list, once approved by EPA, supersedes Ohio's 2016 list and moots Plaintiffs' challenges to EPA's approval of the 2016 list.

II. Plaintiffs' Proposed Count One Does Not Challenge a Final Agency Action Reviewable Under the APA.

As this Court has explained, to be "final," an agency action must mark the consummation of the agency's decisionmaking process and must determine rights or obligations from which legal consequences will flow. April 11, 2018, Order, Doc. 29, at 20-21.

EPA's approval of Ohio's 2016 Section 303(d) list, as amended, is certainly final agency action with respect to the actual listing of impaired waters, which is the subject of Plaintiffs' original complaint. However, EPA did not take any final agency action with respect to what

Plaintiffs now seek to challenge: Ohio's purported decision refusing to develop a TMDL for western Lake Erie. Contrary to Plaintiffs' arguments, there is no final agency action regarding that, for two reasons.

First, the factual predicate for Plaintiffs' argument is expressly contradicted by the one, and only, source of information on which Plaintiffs rely: Ohio's amended 2016 Section 303(d) list. Plaintiffs assert that "in that submission," *i.e.*, the amended 2016 Section 303(d) list, Ohio "refused to develop and establish a [TMDL] for the phosphorus pollution" in western Lake Erie. Pl. Mot. at 1. *See also* Pl. Mem. at 1 ("in the same submission," *i.e.*, the amended 2016 Section 303(d) list, "Ohio EPA stated that it would not develop a TMDL to address the harmful algal bloom problem.") *See also* proposed First Suppl. Compl. ¶ 18 (citing the amended 2016 list at 9, "Ohio EPA has flatly stated that it would not move forward with the development of a TMDL."); *id.* ¶ 77 (citing the amended 2016 list at 9, "Ohio EPA specifically indicated it would *not* develop a TMDL for western Lake Erie"); *id.* ¶¶ 92-93 ("in its May 4, 2018, submission," "Ohio EPA . . . has

definitively stated it will not develop a TMDL").

What Ohio EPA actually said is worth quoting in full:

> Given the complexity of the algae bloom problem, Ohio believes the best approach for solving the issues in western Lake Erie is through the collaborative process established under Annex 4 of the Great Lakes Water Quality Agreement and the Domestic Action Plans as they afford a holistic, multi-jurisdictional perspective that does not exist in a traditional TMDL process. If the current collaborative processes fail to restore the designated use attainment *we recognize that a TMDL or other approach allowed by the USEPA to address impaired waters under the CWA will ultimately be required.*

2016 Integrated Report Amendment at 9 (emphasis added).

This is not a situation where the Court must resolve an ambiguity or draw an inference. The only support offered for the key assertion underlying Plaintiffs' position in fact says the opposite of what Plaintiffs claim. Ohio has neither abandoned its obligation to produce a TMDL for western Lake Erie, nor has Ohio refused to develop a TMDL. Without this factual predicate of an express refusal to develop a TMDL, there can be no EPA action approving the alleged state refusal, as there is no refusal to approve or disapprove.

Second, even if the Court were to ignore Ohio's recognition that it might in the future develop a TMDL, and find Plaintiffs' assertion that

the lack of a current TMDL submission necessarily constitutes a refusal to do so, Plaintiffs' proposed count one is still futile because there was no final agency action regarding the purported "no TMDL" statement.

In its approval letter, EPA noted that the amended Section 303(d) list "discusses how Ohio will continue to address nutrient loadings to Lake Erie." Letter from Cathy Stepp, Regional Administrator, to Tiffani Kavalec, Chief, Division of Surface Water, Ohio EPA, May 10, 2018, at 1-2. But EPA's letter goes on to state that EPA finds that Ohio EPA's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking" under 40 C.F.R. § 130.7(b)(4). *Id.* at 2.

When EPA reviews a state's Section 303(d) list, the agency simply confirms that the state has included a priority ranking that, consistent with EPA's regulations, "tak[es] into account the severity of the pollution and uses to be made of such waters." 40 C.F.R. § 130.7(b)(4). *See* 2006 Assessment Guidance, at 63 ("EPA will review the priority ranking but will not take action to approve or disapprove it."). EPA does not weigh the relative merits of the state's ranking, and the

statute "provides no specific mechanism for reviewing this prioritization." *Sierra Club v. McLerran*, No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015). EPA's acknowledgement that Ohio did prioritize the impaired waters of Lake Erie (which Plaintiffs do not challenge) does not itself represent either the consummation of EPA's decisionmaking on whether Ohio has abandoned its obligation to produce a TMDL or represent a conclusion that determines rights or obligations or has legal consequences. In fact, Plaintiffs themselves note that EPA did not "even mention[] the State of Ohio's failure to comply with its TMDL responsibilities." Pl. Mem. at 2. Contrary to Plaintiffs' assertions, EPA's lack of reference to the absence of a submission that Ohio did not yet have any obligation to provide is not surprising. Instead, EPA simply recognized what Ohio EPA did: the state included the segments on its list of impaired waters impaired "still requiring TMDLs", 40 C.F.R. § 130.7(b)(2), and assigned a prioritization to the open waters of western Lake Erie.

Plaintiffs rely heavily on the *McLerran* case, arguing that it refutes Ohio's approach. But *McLerran* involved materially different

facts. Instead of a Section 303(d) list, in *McLerran* the state developed a draft TMDL, but finalized the document as a "Strategy" which involved the creation of a task force, and stated that it "is not currently planning to develop" a TMDL. 2015 WL 1188522 at *3. Sierra Club requested EPA to determine whether the state had abandoned the TMDL, and EPA concluded the state had not, and that the strategy and task force were "an acceptable alternative to a TMDL." *Id.* *4. The court agreed with EPA that the state had not abandoned the TMDL – a point to which we will return in the discussion of Plaintiffs' proposed count two – but found under the APA that EPA's approval of the task force was arbitrary. *Id.* *10. This separate approval document, issued in response to a specific request to determine whether a state had abandoned a specific TMDL, is materially different than the general statement at issue here, in the different context of EPA's approval of a Section 303(d) list of impaired waters. Unlike in *McLerran*, EPA's acknowledgement that Ohio's 303(d) list "discusses how Ohio will continue to address nutrient loadings to Lake Erie" is not an explicit decision on the precise question of abandonment, and is therefore not a

final agency action. The fact is that Ohio was not obligated to submit a TMDL simultaneously with its submission of its Section 303(d) list and thus EPA had no need to approve or reject that non-submission.

Because Plaintiffs cannot support their assertion that Ohio decided it will not develop any TMDL for western Lake Erie, and because EPA has not taken any final agency action regarding Ohio's statement that a TMDL "will ultimately be required," Plaintiffs' proposed count one fails to state a claim and allowing Plaintiffs to supplement the complaint would be futile.

III. Plaintiffs' Proposed Count Two Does Not Identify A Nondiscretionary Duty.

Plaintiffs' proposed count two asserts that EPA violated a nondiscretionary duty to act within 30 days because Ohio EPA allegedly decided "not to undertake development of a TMDL for western Lake Erie." Proposed Supplemental Compl. ¶ 103.

Plaintiffs' motion to add their proposed count two should be denied for their failure to follow the required process. As EPA has previously explained, such a claim requires 60-day statutory notice before filing suit, 33 U.S.C. § 1365(b)(2): this requirement cannot be

waived. Plaintiffs did not provide the requisite notice.

Even if Plaintiff had somehow satisfied that requirement, Plaintiffs' proposed count two still fails to state a claim. In their motion, Plaintiffs explain that they seek to include their proposed count two "as a protective measure" in the event that there is no final agency action "regarding Ohio EPA's decision not to submit a TMDL." Pl. Mem. at 11 n.1. Plaintiffs' proposed count two assumes no final agency action by EPA and is therefore based on the same faulty reading of Ohio's amended 2016 Section 303(d) list by assuming that a TMDL must be submitted with a 303(d) list.

Plaintiffs argue that some courts have found that a state's decision not to submit a TMDL is a "constructive submission" of "no TMDL," thereby triggering EPA's nondiscretionary duty to approve or disapprove of that "constructive submission." *See, e.g.*, Proposed Supplemental Compl. ¶ 104. For example, in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984), the court found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure may amount to the 'constructive submission' by that state of no TMDL's

[sic]." *Id.* The long passage of time – six years, in that case – "raises the possibility that the states have determined that TMDL's for Lake Michigan are unnecessary." *Id.* at 997.

Like *Scott*, most courts that have applied the constructive submission theory have looked at a state's entire TMDL program. *See, e.g., Ohio Valley Envir. Coal. v. Pruitt,* No. 17-1430, 2018 WL 3039954 (4th Cir., June 20, 2018) (in light of West Virginia's good faith efforts, "we cannot conclude that West Virginia has 'clearly and unambiguously' refused to submit TMDLs"). Plaintiffs do not assert that Ohio has failed to submit any TMDLs, but instead point to the only court decision that has considered whether a state could trigger a constructive submission by refusing to submit a single, particular TMDL: *McLerran*. That decision held that "a state's failure to prepare a particular TMDL [can] ripen into a constructive submission." 2015 WL 1188522 at *7. However, as noted above, *McLerran* found that the State of Washington had not constructively submitted no TMDL, because there were "information gaps . . . such that [the state] could not confidently issue a TMDL at any point in the near future." *Id.* at *8. In particular, the

court noted that the state "lacked sufficient scientific data and had not satisfied certain pre-submission requirements, *i.e.*, public notice and consultation." *Id.* In contrast, if a TMDL were "essentially complete and ready for submission, a last-minute pivot to an illusory alternative may indicate a decision to abandon the TMDL." *Id.*

Here, Ohio has only recently listed western Lake Erie as impaired, and Plaintiffs do not, and cannot, contend that Ohio has already developed the scientific data necessary for a TMDL, much less that Ohio has completed the required public notice requirements. Thus, even if the Court were to accept the constructive submission theory and the *McLerran* court's extension of that theory to a single TMDL, Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.

IV. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

As noted in Defendants' May 11, 2018, Status Report, Doc. 30 at 2, EPA's May 10, 2018, action approving Ohio's Section 2016 303(d) list, as amended, moots Plaintiffs' claims as pled in Plaintiffs' original complaint, to the extent the Court has jurisdiction over those claims.

See April 11, 2018, Order (Doc. 29) at 24 n.15 (citing *Anacostia Riverkeeper, Inc. v. Jackson*, 713 F. Supp.2d 50, 51 n.1 (D.D.C. 2010)). If the Court denies Plaintiffs' motion to supplement the complaint, nothing is left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should deny Plaintiffs' motion to file a supplemental complaint because neither of Plaintiffs' proposed supplemental counts state a claim upon which relief may be granted, and should grant Defendants' cross motion for summary judgment and terminate the case because EPA's approval of Ohio's amended 2016 Section 303(d) list moots Plaintiffs' original claims.

Respectfully submitted this 10th day of July 2018.

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CERTIFICATE OF SERVICE

I hereby certify that on July 10, 2018, I electronically filed the foregoing MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
Daniel R. Dertke

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

TABLE OF CONTENTS

TABLE OF AUTHORITIES ii

INTRODUCTION AND SUMMARY 1

BACKGROUND 2

ARGUMENT 5

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie 5

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act On Ohio's Plans To Address Nutrient Pollution in Lake Erie 12

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List 13

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie 16

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment 19

CONCLUSION 20

TABLE OF AUTHORITIES

CASES

Blue Water Baltimore v. Pruitt,
266 F. Supp. 3d 174, 180-81 (D.D.C. 2017),
judgment amended, 293 F. Supp. 3d 1 (D.D.C. 2017) 14

Ohio Valley Envtl. Coalition, Inc. v. Pruitt,
893 F.3d 225 (4th Cir. 2018) 5, 6, 7

San Francisco Baykeeper v. Whitman,
297 F.3d 877 (9th Cir. 2002) 6, 11

Scott v. Hammond,
741 F.2d 992 (7th Cir. 1984) 6, 7, 11, 12

Sierra Club v. McLerran,
No. 11-cv-1759, 2015 WL 1188522
(W.D. Wash., March 16, 2015) 7, 8, 9, 10, 17, 18

STATUTES

33 U.S.C. § 1313(d)(2) 3, 6

33 U.S.C. § 1314(a)(2)(D) 3

CODE OF FEDERAL REGULATIONS

40 C.F.R. § 130.7(b)(4) 4, 17

40 C.F.R. § 130.7(d)(1) 3

FEDERAL REGISTER

57 Fed. Reg. 33,040 (July 24, 1992) 5

LEGISLATIVE HISTORY

H. R. Rep. No. 92-911 (1972) 4

INTRODUCTION AND SUMMARY

The two motions before the Court essentially ask whether Ohio has made a "constructive submission" of no TMDL for nutrient pollution in the open waters of western Lake Erie. Plaintiffs' two new proposed claims assert that Ohio has not yet begun a TMDL for the lake's open waters, but Plaintiffs have not and cannot credibly assert that Ohio has clearly and unambiguously refused to ***ever*** prepare such a TMDL, and that makes all the difference. Ohio has not refused to prepare a TMDL for the western basin of Lake Erie and indeed expressly recognizes that a TMDL is needed and may be developed in the future. Therefore, even under the most expansive expressions of the so-called constructive submission theory articulated in *McLerran* and the other cases Plaintiffs cite, Plaintiffs' proposed Count Two fails to assert the facts necessary to state a claim that Ohio has constructively submitted no TMDL.

Plaintiffs also assert that when EPA approved Ohio's 2016 Section 303(d) list of impaired waters, EPA also approved certain statements Ohio made in its 2016 Integrated Report. Although EPA certainly

acknowledged Ohio's statements regarding the State's plans to address nutrient pollution in the lake's open waters, EPA neither approved nor disapproved them. Instead, EPA followed its regulations, which require EPA to approve or disapprove of the actual list of impaired waters still requiring TMDLs and the inclusion of priority rankings, *i.e.*, Ohio's Section 303(d) list. EPA has no formal role in reviewing the other parts of a state's Integrated Report. Plaintiffs' proposed Count One therefore fails to state a claim because Plaintiffs cannot point to any judicially reviewable final agency action regarding Ohio's plans to reduce nutrient pollution.

Finally, even if the Court finds that EPA did take final agency action regarding Ohio's plans, EPA's approval of Ohio's 2018 Section 303(d) list supersedes its approval of Ohio's 2016 list, which moots Plaintiffs' claim.

BACKGROUND

As we explained in our opening memorandum, ECF No. 39, the CWA sets a deadline for states to submit their initial TMDLs and Section 303(d) lists based on when EPA first identifies relevant

pollutants under 33 U.S.C. § 1314(a)(2)(D). After that, the statute requires states to submit subsequent Section 303(d) lists and TMDLs "from time to time." 33 U.S.C. § 1313(d)(2). While EPA's regulations specify that states must submit Section 303(d) lists every two years, *see* 40 C.F.R. § 130.7(d)(1), there is no similar regulatory requirement for TMDLs. Nor is there any requirement for states to submit additional TMDLs with their Section 303(d) list or as part of an integrated report. Instead, EPA's regulations simply provide that TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." 40 C.F.R. § 130.7(d)(1). Thus, there is no firm statutory or regulatory timeframe, deadline, or other restriction on the timing for states to submit TMDLs.

Nor is there any requirement for a state to begin work on a TMDL as soon as a water quality limited segment is listed as impaired. Plaintiffs argue that because Ohio has not yet started work on a nutrient TMDL, Ohio is not complying with a statutory requirement "to promulgate a [TMDL]." Pl. Combined Memo (ECF No. 40) at 1; *see also*

id. at 3 (asserting Ohio's "refusal to begin the TMDL process" is "illegal"). But in assembling their Section 303(d) lists, states must identify "waters targeted for TMDL development in the next two years," which allows waters to remain on a state's list for *more* than 2 years before waters are "targeted for TMDLs development." 40 C.F.R. § 130.7(b)(4). And as explained by longstanding EPA guidance interpreting the statutory and regulatory framework, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* at 63 (July 29, 2005) ("2006 Assessment Guidance") (relevant excerpts attached as Exhibit 1).

There is good reason for this flexibility because, as Congress understood when it enacted the TMDL program into law, "it is extremely difficult to apportion the discharge load from all point sources along a waterway or section of a waterway." H. R. Rep. No. 92-911, at 105-06 (1972). This is especially true of "'complex' TMDLs that may cover a large watershed or address particularly challenging pollution

problems," as opposed to comparatively "routine or 'simple' TMDLs that may be developed as part of an NPDES permit reissuance." Surface Water Toxics Control Program and Water Quality Planning and Management Program, 57 Fed. Reg. 33,040, 33,044 (July 24, 1992). For those TMDLs that require "complex analysis," it is appropriate to "allow time to collect necessary information and complete the analysis." 2006 Assessment Guidance at 63; *see also Ohio Valley Envtl. Coalition, Inc. v. Pruitt*, 893 F.3d 225, 231 n.4 (4th Cir. 2018) ("TMDLs may require substantial time and resources to develop."). The same guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57.

ARGUMENT

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie.

Plaintiffs repeatedly argue that Ohio has refused to begin the TMDL process for the open waters of western Lake Erie. *See, e.g.*, Pl. Combined Memo at 2, 3, 4, 5, 6. But, as explained below, the relevant legal question is whether Ohio has "'clearly and unambiguously'"

indicate[d] that it will not 'submit any TMDLs and has no plans to remedy this situation.'" *Ohio Valley Envir. Coal.,* 893 F.3d at 230 (quoting *S.F. Baykeeper v. Whitman*, 297 F.3d 877, 882 (9th Cir. 2002)). Plaintiffs have not and cannot point to any statement, action, or inaction by Ohio that clearly and unambiguously shows that Ohio will never prepare a TMDL for nutrient pollution in the open waters of western Lake Erie.

Plaintiffs rely on the constructive submission theory, which began in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984). In *Scott*, the State of Illinois had failed to submit any TMDLs, not even the initial ones for which the CWA does impose a deadline. However, the CWA does not provide a cause of action to sue a state if a state fails to submit a TMDL, so the plaintiffs in *Scott* sued EPA. EPA argued that once a state submits a TMDL, EPA must approve or disapprove the submission within 30 days, under 33 U.S.C. § 1313(d)(2), but if a state does not submit anything, EPA has no statutory duty to act. 741 F.2d. at 997-98. The Seventh Circuit found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure

. . . raises the possibility that the states have determined that [TMDLs] . . . are unnecessary." *Id.* at 997.

Almost every court which has adopted the legal fiction of a constructive submission has examined whether a state has abdicated its TMDL program statewide. *See Ohio Valley Envir. Coal.,* 893 F.3d at 229-30 (collecting cases). In a recent decision, the Fourth Circuit Court of Appeals reviewed the constructive submission caselaw and observed that courts "have declined to find a 'constructive submission' of no TMDLs where a state (1) has produced at least some TMDLs and (2) has a credible plan in place to produce others." *Id.* Plaintiffs do not, and cannot, allege that Ohio has failed either of those prongs, let alone both of them.

Plaintiffs instead argue that Ohio has constructively refused to submit a particular TMDL. Only one court, *Sierra Club v. McLerran*, No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015), has indicated that a state like Ohio, with an otherwise robust TMDL program, can nonetheless trigger a constructive submission. No court in this Circuit has adopted the constructive submission theory, much

less *McLerran*'s unprecedented extension of it, and the Court should not do so now. But even if the Court were to adopt the theory, and to take the additional step of following *McLerran*, not even that case supports Plaintiffs' attempt to state a constructive submission claim.

In *McLerran*, the court considered a citizen suit to compel EPA to disapprove the State of Washington's alleged constructive submission of no TMDLs for PCBs in the Spokane River. Although the court went beyond the constructive submission theory as articulated by the Fourth and Seventh Circuits, and other courts, to conclude there could be a constructive submission of no TMDL when a state "clearly and unambiguously indicate[s] that it will not produce a particular TMDL," the court actually held that such a situation had not occurred, even though the Spokane River was first listed for PCBs in 1996. *Id.* at *2, 7-9. In the court's view, where "information gaps persisted such that [the state] could not confidently issue a TMDL at any point in the near future, adopting an alternative may, under some circumstances, represent a reasonable interim measure rather than an abandonment of any future plans to prepare a TMDL." *Id.* at *8.

Assuming for the sake of argument that the Court agrees with *McLerran*'s view of the constructive submission theory, Plaintiffs have not alleged the specific facts necessary to meet *McLerran*'s standard. Ohio's 2018 Integrated Report explains "why a TMDL is not being pursued *immediately*," Ohio 2018 Integrated Water Quality Monitoring and Assessment Report ("2018 Integrated Report") (relevant excerpts attached as Exhibit 2) at D-31 (emphasis added). Ohio also lists most of the lake's assessment units as "Impaired, needs TMDL." *Id.* at J-16. As in *McLerran*, the State has not "abandon[ed] any future plans" to produce a TMDL for the open waters and Plaintiffs have alleged no specific facts to the contrary.

Plaintiffs also claim that Ohio is merely giving "lip service to the idea that it may establish a TMDL at some undetermined future time," Pl. Combined Memo at 1, but Plaintiffs have absolutely no support for that statement, and certainly nothing to show that the State has "clearly and unambiguously *abandoned* its obligation to produce a TMDL." *McLerran*, 2015 WL 1188522, at *7 (emphasis in original). Ohio's 2018 Integrated Report explains in detail the efforts Ohio is

making to address nutrients in Lake Erie. 2018 Integrated Report at J-10. These efforts include the Great Lakes Water Quality Agreement, the Lake Erie Collaborative Agreement, Ohio's Domestic Action Plan for Lake Erie, TMDLs for 22 of the 32 watersheds that feed into the lake, and numerous other nutrient reduction efforts. *Id.* at J-10 to J-15. Plaintiffs have identified nothing in the Clean Water Act that would strip Ohio of its "considerable flexibility" to pursue these nutrient pollution control efforts before developing a TMDL for the western basin of Lake Erie.

Plaintiffs dismiss these efforts out of hand, as simply a means of indefinitely delaying a TMDL, again relying on *McLerran*. Pl. Combined Memo at 1. But *McLerran* cannot save Plaintiffs' constructive submission claim, for two reasons. First, as just explained, the court in *McLerran* found that the State of Washington's exploration of an alternative to a TMDL did *not* amount to a constructive submission of no TMDL. Second, the waterbody in *McLerran* had been on the state's Section 303(d) list for 19 years. 2015 WL 1188522 *10. Here, in contrast, the open waters were first listed this year. While

Plaintiffs may argue that the lake's open waters should have been listed in 2016, they cannot dispute that the obligation to develop a TMDL cannot precede a waterbody's listing as impaired.

If Plaintiffs are allowed to state a claim for a constructive submission by alleging that Ohio has not begun work on a TMDL less than a year after the lake's open waters were listed, the constructive submission theory would be stretched far beyond what any judicial decision, including *McLerran*, has held. It would amount to a rule that a state must begin developing a TMDL as soon as a waterbody is listed. That would upend the states' statutory prioritization process and would go beyond anything that the CWA, EPA's regulations, or the caselaw requires. *Cf. San Francisco Baykeeper v. Whitman*, 297 F.3d 877, 885 (9th Cir. 2002) (Section 303(d) contains no "requirement of simultaneous submission of the list of polluted waters with the TMDL to correct each polluted water"). Such a holding would also effectively place Ohio's water quality program under a proxy conservatorship, something that no court has endorsed, which is precisely why the constructive submission theory has always been predicated on a state's "fail[ure]

over a long period of time to submit" TMDLs required by law. *Scott*, 741 F.2d at 996 (emphasis added).

Instead, Plaintiffs' motion to add their proposed Count Two should be denied because Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.[1]

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

In order for Plaintiffs' proposed Count One to state a claim, Plaintiffs must allege a judicially reviewable final agency action. Plaintiffs argue that the statements Ohio made in its 2016 Integrated Report regarding the State's plans to address nutrient pollution in Lake

[1] Plaintiffs' proposed Count Two suffers from the additional flaw that it only asserts that Ohio's 2016 section 303(d) list is a constructive submission of no TMDL. First Suppl. Compl. ¶¶ 103-104; Pl. Combined Memo at 2, 4, 5. In Argument II we explain why EPA's approval of the 2016 list is not a final agency action with respect to Ohio's nutrient pollution reduction plans and why EPA's approval of Ohio's 2016 list is moot, but a constructive submission argument depends on Ohio's intent, and that should be evaluated based on Ohio's most current statements. In other words, proposed Count Two also fails to state a claim because it fails to assert Ohio's *present* intentions regarding a TMDL for the open waters of western Lake Erie.

Erie amount to a constructive submission for EPA to approve or disapprove, separate and apart from Ohio's 2016 Section 303(d) list of impaired waters. Pl. Combined Memo at 9. Plaintiffs also argue that EPA in fact approved those statements when EPA approved the 2016 list. *Id.*

Plaintiffs' argument presents two problems. First, EPA's approval of Ohio's 2016 list is moot, so if EPA took any reviewable final agency action regarding a constructive submission (which it has not), that final agency action could only be EPA's approval of the 2018 list. Second, even if EPA's approval of the 2016 list is not moot, Ohio's statements regarding its plans to address nutrient pollution in Lake Erie are not a constructive submission of no TMDL, and EPA did not take any final agency action regarding Ohio's statements.

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Like Count Two, Plaintiffs' proposed Count One challenges EPA's approval of Ohio's 2016 Section 303(d) list. Plaintiffs argue that even though EPA has now approved a 2018 list, EPA's approval of the 2016 list is not moot because it is an action that is capable of repetition yet

evading review. Pl. Combined Memo at 7-8. Plaintiffs downplay the mootness argument as a "flurry of procedural claims that amount to nothing," *id.* at 6, but mootness is an essential question of subject matter jurisdiction that a court cannot simply waive aside.

Plaintiffs' challenge to EPA's approval of the 2016 list is moot. *See Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174, 180-81 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017). The plaintiffs in *Blue Water* sought to challenge "the reclassifications in [a] 2012" report, but EPA addressed those reclassifications in "both the 2012 and 2014" reports. 266 F. Supp. 3d at 180-81; *see also id.* (the 2014 report "reiterated the rationale stated in the 2012 [report] regarding the reclassification and de-listings at issue"). The court held that "a decision may be superseded by a subsequent decision based on the same rationale because the subsequent decision replaces the prior decision, rendering it void." *Id.* Just as the 2014 report in *Blue Water* "replace[d] the previous list," *id.*, Ohio's 2018 list replaced its 2016 list, so the 2016 list has "no further legal effect." *Id.*[2] The Court cannot

[2] Plaintiffs add in a footnote that the Court could allow them to amend

order any effective relief with respect to the 2016 list.

Plaintiffs assert that they satisfy the capable of repetition yet evading review exception to mootness. They argue that any legal defect in EPA's approval of the 2016 list is capable of repetition because the approval of the 2018 list "merely duplicates" EPA's prior approval, and that it evades review because it is too short in its duration to litigate. Pl. Combined Memo at 6, 8.

But any reading of Ohio's 2016 submission and EPA's 2016 approval to suggest that Ohio constructively submitted no TMDL by expressly disclaiming any responsibility to develop one, is resoundingly refuted by the 2018 Integrated Report and EPA's 2018 approval. The sole support for Plaintiffs' constructive submission claim – statements taken out of context from Ohio's 2016 Integrated Report and misconstrued as definitive statements that Ohio will never develop a TMDL for the western basin of Lake Erie – are *not* repeated in the 2018

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proposed Count One to address EPA's approval of the 2018 list, as the *Blue Water* court did, Pl. Combined Memo at 9 n.2. EPA agrees that this would resolve any mootness concerns, but that amendment would be futile. As we explain below, when EPA approved Ohio's 2018 list EPA took no action on Ohio's future TMDL plans, so Plaintiffs fail to identify a reviewable final agency action regarding either approval.

Integrated Report. Indeed, as noted *supra* at 9, the 2018 Integrated Report classifies all of the Lake Erie assessment units as "Impaired, needs TMDL." 2018 Integrated Report at J-16. Ohio also wrote that where the nutrient reductions from TMDLs in tributaries to Lake Erie "are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps." *Id.* at J-12. And EPA stated in its 2018 Approval that it "expects that under those circumstances [*i.e.*, the inadequacy of Ohio's current nutrient pollution reduction plans] such 'next steps' *would* include TMDL development for the Lake Erie Assessment Units directly." 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) ("EPA 2018 Approval") (ECF No. 40-1, attached as Exhibit A to Pl. Combined Memo), at 18 (emphasis added); *see also* 2018 Integrated Report at D-31 (recognizing that if the water quality in the western basin fails to improve, "a TMDL may ultimately be required").

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

Even if EPA's approval of Ohio's 2016 list were not moot, EPA's

statements regarding Ohio's plans do not amount to final agency action on whether Ohio constructively submitted no TMDL. Instead, EPA's approval is final agency action on exactly what it purports to be: the State's section 303(d) list of impaired waters, no more, no less.

Plaintiffs point out that EPA made a finding that Ohio's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking." Pl. Combined Memo at 10. As we noted in our opening memo, EPA simply confirms that the state has included a priority ranking that "tak[es] into account the severity of the pollution and uses to be made of such waters." 40 C.F.R. § 130.7(b)(4). EPA does not actually approve the ranking, much less Ohio's "discussion of its prioritization." *See* 2006 Assessment Guidance at 63 ("EPA will review the priority ranking but will not take action to approve or disapprove it."); *McLerran*, 2015 WL 1188522 at *6 (there is "no specific mechanism for reviewing [a state's] prioritization").

Plaintiffs also point to EPA's "blanket determination" that Ohio's 2016 list met the statutory and regulatory requirements. Pl. Combined Memo at 10. Plaintiffs argue that *McLerran* is analogous and refutes

Ohio's "flawed" approach. *id.* at 11, but Plaintiffs skip an essential step: in *McLerran* there was no question that EPA had taken final agency action on whether the state had made a constructive submission. The court in *McLerran* reviewed a separate approval document, issued outside the regular Section 303(d) review process and in response to a specific request to determine whether a state had abandoned a specific TMDL, in which EPA made the explicit conclusion that the state's strategy and task force were "an acceptable alternative to a TMDL." 2015 WL 1188522 at *4. This is materially different than the general statement at issue here, in the context of an Integrated Report. Unlike in *McLerran*, there is no final agency action on whether Ohio has abandoned a TMDL for the open waters of western Lake Erie, and without a final agency action, Count One fails to state a claim.

Plaintiffs raise the possibility of supplementing their complaint with yet a different count, addressing EPA's approval of Ohio's 2018 list, Pl. Combined Memo at 9 n.2, but that would also be futile. *See supra* n.2. In EPA's approval of Ohio's 2018 list, EPA noted Ohio's acknowledgment that TMDLs are required for any assessment units

that are listed as impaired. EPA 2018 Approval at 18. EPA's approval also explains that removing a segment from the Section 303(d) list may be warranted in some cases. For example, a TMDL would not be required if Ohio's efforts "result in the attainment of water quality standards prior to the development of a TMDL." *Id.* However, the substance of EPA's action was, like in 2016, an approval of Ohio's actual Section 303(d) list of impaired waters and its inclusion of a priority ranking of those waters, not an approval of the State's nutrient pollution reduction efforts as an alternative to a TMDL. *Id.* at 20.

Plaintiffs' proposed Count One therefore fails to state a claim, whether Plaintiffs plead Count One as a challenge to EPA's approval of Ohio's 2016 list or as a challenge to EPA's approval of Ohio's 2018 list.

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

Because Plaintiffs' two new proposed claims both fail to state a claim, and because EPA's approval of Ohio's 2016 Section 303(d) list, as amended, mooted Plaintiffs' claim that Ohio failed to list the open waters of western Lake Erie as impaired, there is nothing left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should grant Defendants' cross motion for summary judgment.

Respectfully submitted this 6th day of August 2018.

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CERTIFICATE OF SERVICE

I hereby certify that on August 6, 2018, I electronically filed the foregoing REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
Daniel R. Dertke

Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act

July 29, 2005

Watershed Branch
Assessment and Watershed Protection Division
Office of Wetland, Oceans and Watersheds
Office of Water
United States Environmental Protection Agency

This document provides EPA's guidance for preparing the 2006 Integrated Report. The Integrated Report is intended to satisfy the listing requirements of sections 305(b) and 314 of the Clean Water Act (CWA). This guidance document discusses existing requirements of the CWA and EPA's implementing regulations. Those statutory and regulatory provisions contain legally binding requirements. This document describes those requirements; it does not substitute for them. The recommendations in this document are not binding; indeed, there may be other approaches that would be appropriate in particular circumstances. When EPA makes a decision on a state's section 303(d) list, it will make each decision on a case-by-case basis and will be guided by the applicable requirements of the CWA and implementing regulations, taking into account comments and information presented at that time by interested persons regarding the appropriateness of applying these recommendations to the particular situation.

CONTENTS

Section Page

ABBREVIATIONS AND ACRONYMS v

I. INTRODUCTION 6

II REPORTING REQUIREMENTS UNDER THE CLEAN WATER ACT SECTIONS 303(D), 305(B), 314 AND CORRESPONDING REGULATIONS 9

III. RECOMMENDED ORGANIZATION OF AN INTEGRATED REPORT 13
EXECUTIVE SUMMARY 14
PART A. INTRODUCTION 14
PART B. BACKGROUND INFORMATION 14
PART C SURFACE WATER MONITORING AND ASSESSMENT. 17
PART D. GROUND WATER MONITORING AND ASSESSMENT 25
PART E. PUBLIC PARTICIPATION 25

IV. ISSUES CONCERNING THE DEVELOPMENT AND USE OF AN ASSESSMENT METHODOLOGY 29

V. FIVE-PART CATEGORIZATION OF WATERS 46

VI. REPORTING RESULTS 65

GLOSSARY 66

APPENDIX: DATA ELEMENTS FOR 2006 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT AND DOCUMENTATION FOR DEFINING AND LINKING SEGMENTS TO THE NATIONAL HYDROGRAPHY DATASET
. 70

TABLES

Table		Page
2-1	SUMMARY OF STATE REPORTING REQUIREMENTS UNDER CWA SECTIONS 303(D), 305(B) AND 314 AND CORRESPONDING REGULATIONS	11
3-1	ATLAS	15
3-2	SIZE OF SURFACE WATERS ASSIGNED TO REPORTING CATEGORIES	19
3-3	ATTAINMENT RESULTS CALCULATED USING PROBABILISTIC MONITORING DESIGNS	20
3-4	SEGMENT/POLLUTANT COMBINATIONS REMOVED FROM STATE'S YEAR 2004 SECTION 303(D) LIST	21
3-5	TMDL DEVELOPMENT STATUS	21
3-6	INDIVIDUAL DESIGNATED USE SUPPORT SUMMARY	22
3-7	SIZE OF WATERS IMPAIRED BY CAUSES	22
3-8	SIZE OF WATERS IMPAIRED BY SOURCES	23
3-9	TROPHIC STATUS OF SIGNIFICANT PUBLICLY OWNED LAKES	24
3-10	TRENDS IN LAKE WATER QUALITY	24
3-11	SUMMARY OF WATER QUALITY REPORTING ELEMENTS OF AN INTEGRATED REPORT	27
5-1	RECOMMENDED WATER QUALITY INDICATORS FOR GENERAL DESIGNATED USE CATEGORIES	52
5-2	DOCUMENTATION OF "GOOD CAUSE" TO MOVE SEGMENTS FROM CATEGORY 5.	58

FIGURES

Figure		Page
4-1	USING MULTIPLE TYPES OF DATA TO ASSESS ATTAINMENT	45

EXHIBITS

Exhibit		Page
3-1	RECOMMENDED ORGANIZATION FOR YEAR 2006 INTEGRATED REPORT SUBMITTALS	13
5-1	2006 INTEGRATED REPORTING GUIDANCE: SEGMENT CATEGORIZATION GUIDE	48

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ABBREVIATIONS AND ACRONYMS

ADB	Assessment Database
AU	Assessment Unit
CALM	Consolidated Assessment and Listing Methodology
CPP	Continuing Planning Process
CFR	Code of Federal Regulations
CWA	Clean Water Act
DQO	Data Quality Objectives
DU	Designated Use
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
FGDC	Federal Geographic Data Committee
GPRA	Government Performance Report Act
IR	Integrated Report
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NSSP	National Shellfish Sanitation Program
OW	Office of Water
PPG	Performance Partnership Grant
PWS	Public Water Supply
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RIT	Reach Indexing Tool
SDWA	Safe Drinking Water Act
STORET	STORage and RETrieval
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WQC	Water Quality Criteria
WQS	Water Quality Standard

I. INTRODUCTION

The *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* was developed specifically for the 2006 reporting cycle. The objective of this document is to provide to states, territories, authorized tribes, and interstate commissions[1] a recommended reporting format and a suggested content to be used in developing a single document that integrates the reporting requirements of the Clean Water Act (CWA) section 303(d) and section 305(b). This guidance for developing the Integrated Report (IR) supports the Environmental Protection Agency's (EPA) strategy for achieving a broad-scale, national inventory of water quality conditions. Use of the IR format will serve to report on water quality standards (WQS) attainment status of assessed waters, document availability of data and information for each segment, identify trends in water quality conditions, and provide information to managers in setting priorities for future actions to protect and restore the health of our nation's aquatic resources.

EPA has established a goal that all fifty-six states and territories utilize the integrated reporting format by 2008. EPA continues to promote this comprehensive assessment approach in order to enhance the states' ability to track both programmatic and environmental goals of the CWA, and ideally, to increase the pace of achieving these important environmental goals. This document includes recommendations designed to allow states and other interested stakeholders to track the progress of interim management actions by employing the multi-category reporting framework. By issuing this guidance well in advance of the April 1, 2006 deadline for submission of CWA section 303(d) lists and section 305(b) reports, EPA intends to encourage the broadest possible adoption of the integrated reporting approach.

EPA continues to advocate the use of the five-part categorization format for sorting waters (see box below for brief description and Section V). While this document is more comprehensive than previous Integrated Report Guidance, there are clarifications to the previous (2004) Integrated Report Guidance. Specifically, this guidance provides:

- increased emphasis on the use of the Assessment Database (ADB) or compatible electronic data format (the ADB is being modified to accommodate the recent format, content, and multi-category listing option that the guidance suggests),
- greater clarity on the content and the format of those components of the IR that are recommended and required under CWA sections 303(d), 305(b), and 314,
- greater clarity on issues associated with data solicitation, collection, consideration, and interpretation of water quality standards,
- additional information on the option to report water quality status of individual segments in more than one category (e.g., to show that some designated uses of a water are being attained and some designated uses are not),[2] and
- additional clarity and flexibility on undertaking and reporting alternatives to total maximum daily loads (TMDLs) for attaining water quality standards (e.g., utilization of reporting "Category 4b").

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[1] In the remainder of this document, unless specified otherwise, *states* also refers to authorized tribes, territories and interstates commissions.

[2] In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality, although note that states determine their section 303(d) list (i.e., Category 5) consistent with 40 CFR 130.7 (b)(3).

It is important to note that certain components of the recommended format and content for the 2006 IR document are based on requirements of the CWA and EPA's implementing regulations (e.g., the submission of an approvable section 303(d) list), whereas other components are based on Agency recommendations. In section II of this guidance, those components *required* by the CWA sections 303(d), 305(b), 314, and the corresponding regulations are identified.

In addition to identifying the required components in the 2006 IR submission, this guidance will indicate the components of the 2006 IR document for which EPA recommends states provide an opportunity for *public review and comment* (e.g., the list of impaired waters requiring TMDLs and the assessment methodology used by the state to develop their IR document).

Five Reporting Categories

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Integrated Monitoring and Assessment

The Clean Water Act requires states to provide every two years an assessment of the quality of all their waters (section 305(b)) and a list of those that are impaired or threatened (section 303(d)). To efficiently meet this charge, EPA recommends that states, tribes, and other water quality monitoring collaborators use a combination of monitoring and assessment techniques to:

1. increase the percentage and types of waters assessed;
2. reliably estimate the overall condition of all waters within a state; assess changes over time; and measure progress toward the "fishable-swimmable" goal of the Clean Water Act (section 305(b));
3. comprehensively identify all impaired and threatened waters to support section 303(d) listing requirements; and
4. prioritize site-specific assessments needed to confirm the location of both high quality and impaired waters, and support control, restoration, and prevention actions.

EPA has strongly encouraged states to use integrated monitoring and assessment techniques. These include probability-based assessments and other predictive tools, as well as site-specific assessments. The use of probability assessments can eliminate the risk of generating a biased picture of water quality conditions state-wide and provide a cost-effective bench mark of state water quality program effectiveness. The probability-based assessment results can also help a state decide if it should target certain waters for further assessment or if limited resources for water quality assessment could be used more effectively in other ways. States currently using broad-scale probability-based assessment to complement their site-specific assessment include VA, SC, KY, and IN, among others.

V. FIVE-PART CATEGORIZATION OF WATERS

Use of the Integrated Report format and the use of the five-part categorization scheme envisions that each state provides a comprehensive description of the water quality standards attainment status of all segments within a state. In this guidance, the term "segment" is synonymous with the term "assessment unit" (AU) used in previous IR Guidance. Fundamental to this accounting is the use of a consistent and rational segmentation and geo-referencing approach for all segments including rivers, streams, lakes, wetlands, estuaries, and coastal waters. There is no single approach to the development of a segmentation scheme. However, it is important that the selected segmentation approach be consistent with the state's water quality standards and be capable of providing a spatial scale that is adequate to characterize the WQS attainment status of the segment. The IRG provides some recommendations on how states may develop a segmentation scheme for monitoring, assessing and categorizing water quality conditions. Additionally, the IRG provides recommendations for assigning individual segments to the five-category system.

A. Recommendations for Segmenting Waters

EPA recommends that states consider using the National Hydrography Dataset (NHD)[15] coding scheme to georeference their segments, where segments may comprise part of an NHD reach, an individual NHD reach, or a collection of NHD reaches or parts of reaches. Alternatively, if a state has already developed a comparable Geographic Information System (GIS) framework, EPA requests that states provide any relevant information necessary to allow consistent georeferencing. Additionally, this information should be included in the state's ADB submission. States generally partition waters to represent homogeneity in physical, biological or chemical conditions. This segmentation may reflect an *a priori* knowledge of factors such as flow, channel morphology, substrate, riparian condition, adjoining land uses, confluence with other waterbodies, and potential sources of pollutant loadings (both point and nonpoint). While there is no single default dimension for a segment size, states have utilized these or similar principles when they defined the segments used in their water quality standards. Other factors may include the following:

- The expected natural variability of the measured criteria associated with the WQSs.
- The type of water (e.g., a small stream, a wide river, a tidal and stratified estuary, and coastal shoreline).
- Time of travel of a parcel of water in the waterbody or segment or the magnitude of any tidal excursions.
- The amount of and type of data and information necessary to provide a reasonably accurate characterization of the criteria (or core indicators) associated with the designated uses in the segment or waterbody.
- Any expected changes in significant influences in the watershed (land use, point or nonpoint sources of pollutants).
- Any site-specific concerns such as patchy or unique habitat distribution patterns or biological population distributions.

[15] By making this recommendation, EPA is not equating availability of geographical information on a water segment in the NHD with the legal definition of water of the U.S. under CWA.

Using NHD or other comparable GIS framework, a state should assign a discrete "address" or geo-location to each segment, and document the process used for defining water segments in their methodologies. The physical boundaries (beginning and end points) of a segment should be defined in such a manner that a scientifically valid assessment of each and every segment can be made. The individual size of a segment will vary based upon methodologies. Segments should, however, be larger than a sampling station but small enough to represent a relatively homogenous parcel of water (with regard to hydrology, land use influences, point and nonpoint source loadings, etc.).

B. How should segments be assigned to EPA's five reporting categories?

EPA continues to advocate the use of the five category approach for classifying the WQS attainment status for each segment. In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality. A segment is considered impaired when WQS[16] are not being supported and/or met, and is considered threatened when WQS are not expected to be fully supported and/or met in the next listing cycle. In classifying the status of water quality in 2006, states have the option to report each segment in one or more categories. EPA recommends that states use the following five reporting categories to classify segments as meeting or not meeting applicable WQS:

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Exhibit 5-1 provides an example of how to consider designated uses in the categorization process. EPA believes that the placement of segments into the five reporting categories best allows states to document attainment of applicable WQSs, and to develop monitoring strategies that effectively respond to the needs identified in the assessment, while ensuring that the attainment status of each water quality standard applicable to a particular segment is addressed.

[16] Water quality standards include designated use(s), criteria, and the antidegradation policy. Water quality criteria are important elements of water quality standards and attainment of criteria should also be evaluated in making listing decisions (See 40 CFR 130.7 (b)(3)). Failure to meet WQC warrant listing of waters under section 303(d). EPA has not developed guidance at this time on determining attainment status for antidegradation policies. EPA recognizes that such policies, while an important part of WQS, may not lend themselves to "attainment" determinations on a segment specific basis.

Exhibit 5-1. 2006 Integrated Reporting Guidance: Segment Categorization Guide

The following schematic describes a process states might consider using for determining the placement of segments into the Integrated Report (IR) Categories. The process begins with the assessment of the water quality standard attainment status (designated use(s), criteria) of each segment, and concludes with the placement of each segment into one or more of the five IR Categories. The assessment of the water quality standards attainment status should be consistent with the state's assessment and listing methodology and must ensure that segments not meeting or not expected to meet applicable water quality standards are identified. While the schematic focuses on the assessment of designated uses (DU) for each segment, as previously stated all components of the water quality standard are considered in the categorization of a segment.

Step-by-step process to categorize a segment

1. For each segment, assemble and consider all existing and readily available data and/or information to determine the support status for each individual designated use.
2. Based on the data and information available, make support decisions for each DU in the segment and assign the appropriate symbol (✔+, ✔-, ?, T, 4a, 4b, 4c – See *Symbols and Definitions*).
3. Using the results of Step 2, place the segment into the appropriate category or categories.

Symbols and Definitions:

✔+ = The existing data and information shows that a use ***is supported***.

✔- = The existing data and information shows that a use ***is not supported.***

? = There is insufficient existing data and information to make a use support determination, consistent with the state's assessment and listing methodology.

T = A use in this segment is currently being supported, but is **THREATENED** and it is projected not to be supporting by the next scheduled list submission date.

4a = A TMDL to address a specific segment/pollutant combination has been approved or established by EPA.

4b = A use impairment caused by a pollutant is being addressed by the state through other pollution control requirements.

4c = A use is impaired, but the impairment is not caused by a pollutant.

In the following schematic, each box represents one (1) segment. Each segment may contain one or more DUs. After compiling and considering all existing and readily available data and information for each DU in a specific segment, support decisions are made. Placement of the segment into the appropriate category or categories is based on the sufficiency of the data and information, and the analysis of whether the data demonstrates that the DU is supported.

SEGMENT #1 (1 DU) → **ASSESSMENT**

DU1 → ✔+

SEGMENT #2 (2 DUs) → **ASSESSMENT**

DU1, DU2 → T, ✔-

SEGMENT #3 (3 DUs) → **ASSESSMENT**

DU1, DU2, DU3 → ✔+, ✔+, ?

SEGMENT #4 (4 DUs) → **ASSESSMENT**

DU1, DU2, DU3, DU4 → ✔-, 4a, ?, ✔+

SEGMENT CATEGORIZATION

	DU1	DU2	DU3	DU4	Single Category	Multi-Category
SEGMENT 1	✔+				C1	C1
SEGMENT 2	T	✔-			C5	C5
SEGMENT 3	✔+	✔+	?		C2	C2 & C3
SEGMENT 4	✔-	4a	?	✔+	C5	C5, C4a, C3 & C2

Additional examples are provided below to further illustrate the process of segment classification into multiple categories.

	DU1	DU2	DU3	DU4	Single-Category	Multi-Category
SEGMENT A	✔+	✔+	✔+	✔+	C1	C1
SEGMENT B	✔-	✔-	✔-	✔-	C5	C5
SEGMENT C	✔-	✔-	✔-	T	C5	C5
SEGMENT D	?	?	?	?	C3	C3
SEGMENT E	4b	✔-	✔-	✔-	C5	C4b, C5
SEGMENT F	✔+	✔+	✔-	✔-	C5	C2 & C5
SEGMENT G	✔+	✔+	?	?	C2	C2 &C3
SEGMENT H	?	?	?	✔-	C5	C3 & C5
SEGMENT I	✔+	✔+	✔+	4c	C4c	C2, C4c
SEGMENT J	?	?	4c	T	C5	C3, C4c, & C5
SEGMENT K	✔+	?	?	✔-	C5	C2, C3, & C5
SEGMENT L	✔+	✔+	?	T	C5	C2, C3 & C5
SEGMENT M	✔+	?	4b	✔-	C5	C2, C3, C4b & C5

States have the option to place segments into more than one of the five categories when appropriate. The placement of segments into more than one category will allow states to:

1. Demonstrate progress in the efforts to develop TMDLs,
2. Track progress as segments incrementally attain some, but not all water quality standards, and
3. Identify those segments where there is a need to obtain additional data and information for purposes of determining attainment status of some water quality standards.

While EPA recommends that states adopt and utilize the IR format for reporting the status of their water quality in 2006, states may choose to submit separate 303(d) and 305(b) reports. Furthermore, even if a state chooses to use the IR format, it may choose to place each segment into only one category and rely on the reporting capability of ADB to provide detail on the support status of all individual uses. More detailed guidance for determining the appropriate categorization of segments is provided below. It is important to note that states must consider all existing and readily available data and information in developing their section 303(d) lists, and may choose to assess a segment and assign the segment to a category using data and information other than monitored data (e.g., land use, pollutant loading coefficients, remote sensing data, modeling, etc.).

C. May a state use subcategories or additional categories in its Integrated Report?

Yes, in order to refine their classifications, states may choose to establish new or additional subcategories in addition to the proposed five major categories. For example, a state may decide to divide Category 3 into two subcategories in order to distinguish between those segments for which no data and/or information exist from those segments for which some data and/or information exist, but the data are insufficient to make a determination whether the segment is attaining applicable standards. A state may also choose to use subcategories for segments placed into Category 3 when establishing monitoring priorities. For example, the state may place its segments into different subcategories depending on whether the segment is high, medium, or low priority for follow-up monitoring based on information from probability-based monitoring, landscape or water quality models, land use data, or limited site-specific monitoring.

D. Which segments should states include in Category 1?

Segments may be placed into Category 1 if all designated uses are supported, and no use is threatened. When a segment meets the Category 1 requirements, the state has concluded, consistent with their water quality standards (and their assessment methodology) that sufficient data and information exist to determine that ***all applicable water quality standards are being attained,*** thereby making the use of Category 2 unnecessary for this segment, (see Category 2 discussion below). By placing a segment into Category 1, the state is also concluding that there are adequate data and there is sufficient information to make a determination for any water quality standard, making the use of Category 3 unnecessary for this segment (see Category 3 discussion below).

1. In order to place a segment in Category 1, must states have specific data and information regarding the status of each water quality standard?[17]

No. States may describe in either their assessment methodology or in their water quality standards a subset or hierarchy of indicators (as described in the CALM guidance and *Elements of a State Water Monitoring and Assessment Program*) that serve to characterize whether conditions in a segment are capable of meeting all applicable water quality standards.

Because limited resources affect the design of water quality monitoring programs, the state should use a tiered approach to monitoring that includes a core set of baseline indicators selected to represent each applicable designated use, plus supplemental indicators selected according to site-specific or project-specific decision criteria. Using this tiered approach, the state should be able to make the best use of its resources to meet water quality decision needs, including assessing water quality standards attainment and designated use support, identifying needed changes to water quality standards, describing causes and sources of impairments, developing water quality-based source controls, and assessing whether water quality standards are attained. Where the assessment of the supplemental indicators applicable to every designated use in a segment documents that all uses are supported and no use is threatened, that segment should be placed into Category 1.

The monitoring strategy should define a core set of indicators (e.g., water quality parameters) for each water resource type that include physical/habitat, chemical/toxicological, and biological/ecological endpoints as appropriate, that reflect designated uses, and that can be used routinely to assess attainment with applicable water quality standards throughout the state. This core set of indicators is monitored to provide Statewide or basin/watershed level information on the fundamental attributes of the aquatic environment and to assess water quality standards attainment/impairment status. Previously, chemical and physical indicators were emphasized; however, biological monitoring and assessment should assume a prominent role in state monitoring as well.

The monitoring strategy should also describe the process the state uses for identifying supplemental indicators to monitor. Supplemental indicators are often key to identifying causes and sources of impairments and targeting appropriate source controls. These supplemental indicators may include each water quality criteria in the state's water quality standards, any pollutants controlled by the National Pollutant Discharge Elimination System (NPDES), and any other constituents or indicators of concern.

Table 5-1 presents examples of recommended core and supplemental water quality indicators. The Consolidated Assessment and Listing Methodology provides additional information on considerations for selection of supplemental indicators (see http://www.epa.gov/owow/monitoring/calm.html, Chapter 10).

[17] Part D(1) of Section V has been adapted from Section II (Part D) of *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

Table 5-1. Recommended Water Quality Indicators for General Designated Use Categories

	Aquatic Life & Wildlife	Recreation	Drinking Water	Fish/Shellfish Consumption
Recommended Core Indicators	*Condition of biological communities (EPA recommends the use of at least two assemblages) *Dissolved oxygen *Temperature *Conductivity *pH *Habitat assessment *Flow *Nutrients *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Eutrophic condition Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Pathogen indicators (E. coli, enterococci) *Nuisance plant Growth *Flow *Nutrients *Chlorophyll *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Secchi depth Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Trace metals *Pathogens *Nitrates *Salinity *Sediments/TDS *Flow *Landscape conditions (e.g., % cover of land uses)	*Pathogens *Mercury *Chlordane *DDT *PCBs *Landscape conditions (e.g., % cover of land uses)
Supplemental Indicators	*Ambient toxicity *Sediment toxicity *Other chemicals of concern in water column or sediment *Health of organisms	*Other chemicals of concern in water column or sediment *Hazardous chemicals *Aesthetics	*Volatile organic compounds (VOCs) (in reservoirs) *Hydrophyllic pesticides *Nutrients *Other chemicals of concern in water column or sediment *Algae	*Other chemicals of concern in water column or sediment

Source: *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

2. Should states use biosurvey data to list a segment as in attainment for aquatic life use support?

EPA encourages the use of biosurvey data in concert with other specified and supplemental indicators for making an aquatic life use attainment determination. Properly developed biosurvey data can provide direct evidence of aquatic life use support. States may develop, consistent with their assessment methodology and water quality standards, their own bioassessment approach to assessing aquatic life use support. CALM and the 2003 *Elements of a State Water Monitoring and Assessment Program,* recommend the use of at least two assemblages (e.g., fish and macroinvertebrates) in such assessments (See Table 5-1 taken from *Elements of a State Water Monitoring and Assessment Program*).

3. What data should states have to determine that a segment is meeting a "fish consumption" use?

Assessment determinations regarding fish/shellfish consumption uses should be based on parameter-specific data for two groups of pollutants: (1) human pathogens, or indicators thereof, and (2) chemicals with high bioaccumulation potential. Among the bioaccumulative pollutants, EPA recommends mercury, chlordane, Dichloro-diphenyl-trichloroethane (DDT), and polychlorinated biphenyls (PCBs) as core indicators.

E. Which segments should states include in Category 2?

Segments should be placed in Category 2 if the state determines that available data and/or information indicate that some, but not all of the designated uses are supported. If the state has chosen to use the multi-category approach, segments reported in Category 2 may also be reported in Categories 3, 4, or 5 depending upon the results of the analysis of all available data and information on the other uses in the segment. However, if a single-category approach is used, Category 5 takes precedence over all other categories.

F. Which segments should states include in Category 3?

Segments should be placed in Category 3 when there is insufficient available data and/or information to make a use support determination. Category 3 is consistent with and responds to one of the recommendations in the National Research Council's (NRC) report, Assessing the TMDL Approach to Water Quality Management (2001), in which the authors suggested that a category be created for those segments where there existed insufficient data and/or information to assess the use. The state should identify those segments that are higher and lower priority for followup monitoring, and may do so using predicative tools such as probability surveys or landscape models. Category 3 provides states with the flexibility to monitor these segments in a manner consistent with their overall monitoring strategy and schedule.

G. Which segments should states include in Category 4?

Segments may be placed in Category 4 if available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed. States may place segments that meet this definition in one of the following three subcategories:

- a state developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination (Category 4a);

- other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time (Category 4b);
- the non-attainment of any applicable water quality standard for the segment is the result of pollution and is not caused by a pollutant (Category 4c).

1. Which segments should states include in Category 4a?

Segments should be placed in Category 4a when a TMDL to address a specific segment/pollutant combination has been approved or established by EPA. Once the TMDL has been approved or established, the state should implement the TMDL as soon as practicable. Additionally, EPA encourages states to provide monitoring schedules for these segments to ensure that sufficient data and information are obtained to document progress of the implementation actions towards meeting the applicable water quality standards. Segments in this category may also be included in other categories, as appropriate (See Exhibit 5-1).

2. Which segments should states include in Category 4b?

EPA regulations recognize that alternative pollution control requirements may obviate the need for a TMDL. Segments are not required to be included on the section 303(d) list if technology-based effluent limitations required by the Act, more stringent effluent limitations required by state, local, or federal authority, or "[o]ther pollution control requirements (e.g., best management practices) required by local, State or Federal authority" are stringent enough to implement applicable water quality standards (see 40 CFR 130.7(b)(1)) within a reasonable period of time. This guidance acknowledges that the most effective method for achieving water quality standards for some water quality impaired segments may be through controls developed and implemented without TMDLs (referred to as a "4b alternative"). The discussion below focuses on the use of "other pollution control requirements" as a basis for the conclusion that a segment does not need a TMDL.

a. What demonstration does EPA expect a state to make to support a successful Category 4b proposal?

EPA will evaluate on a case-by-case basis a state's decisions to exclude certain segment/pollutant combinations from Category 5 (the section 303(d) list) based on the 4b alternative. States should provide in their submission the rationale which supports their conclusion that there are "other pollution control requirements" sufficiently stringent to achieve applicable water quality standards within a reasonable period of time.

Specifically, this rationale should include: (1) a statement of the problem causing the impairment, (2) a description of the proposed implementation strategy and supporting pollution controls necessary to achieve water quality standards, including the identification of point and nonpoint source loadings that when implemented assure the attainment of all applicable water quality standards, (3) an estimate or projection of the time when water quality standards will be met, (4) a reasonable schedule for implementing the necessary pollution controls, (5) a description of, and schedule for, monitoring milestones for tracking and reporting progress to EPA on the implementation of the pollution controls, and (6) a commitment to revise as necessary the implementation strategy and corresponding pollution controls if progress towards meeting water quality standards is not being shown. EPA acknowledges that the level of rigor necessary to support the state's rationale will vary depending on the complexity of the

water impairments and corresponding implementation strategies. Note that a state could pursue water quality trading under 4b, so long as it follows the principles described in the Agency's relevant guidance.

If the Agency determines that the controls are not, in fact, "requirements," or that they will not result in attainment of applicable water quality standards within a reasonable time, then EPA may disapprove the state's failure to include the segment at issue on the section 303(d) list (i.e., Category 5) and add the segment to the list. In subsequent list submissions, EPA may determine that a segment that has been placed into Category 4b must go back into Category 5, if the circumstances have changed such that the state can no longer support its original 4b demonstration.

b. What constitutes acceptable "pollution control requirements" to support Category 4b alternatives?

Because of the case-specific nature of water quality impairments and controls designed to address such impairments, EPA cannot identify classes of controls that will always be adequate to support a conclusion that a segment is not required to be included in Category 5. In evaluating whether a particular set of pollution controls are in fact "requirements" as specified in EPA's regulation, the Agency will consider a number of factors including: (1) authority (local, state, federal) under which the controls are required and will be implemented with respect to sources contributing to the water quality impairment (examples may include: self-executing state or local regulations, permits, and contracts and grant/funding agreements that require implementation of necessary controls), (2) existing commitments made by the sources to implementation of the controls (including an analysis of the amount of actual implementation that has already occurred), (3) the availability of dedicated funding for the implementation of the controls, and (4) other relevant factors as determined by EPA depending on case-specific circumstances.

Since the overriding objective of the 4b alternative is to promote implementation activities designed to achieve water quality standards in a reasonable period of time, for all of the factors listed above, EPA will evaluate each 4b alternative on a case-by-case basis, including in particular the existence of identifiable consequences for the failure to implement the proposed pollution controls. Depending on the specific situation, "other pollution control requirements" may be requirements other than those based on statutory or regulatory provisions, as long as some combination of the factors listed above are present and will lead to achievement of WQSs within a reasonable period of time. For example, established plans of government agencies that require for attainment of WQS with a reasonable period of time may qualify even when their components include incentive-based actions by private parties. States may also choose to rely on controls that have already been implemented where there is sufficient certainty that implementation will continue until WQS are achieved and will not be reversed. Because the controls are already in place and achieving progress, EPA may consider such controls to be requirements even if their implementation did not occur pursuant to binding legal authority.

c. What constitutes a reasonable period of time for purposes of 4b?

EPA expects that segments impaired by a pollutant but not listed under section 303(d) based on the implementation of existing control requirements will attain WQSs within a reasonable period of time. What constitutes a "reasonable time" will vary depending on factors such as the initial severity of the impairment, the cause of the impairment (e.g., point source discharges, in place sediment fluxes, atmospheric deposition, nonpoint source runoff), riparian condition, channel condition, the nature and behavior of the specific pollutant (e.g., conservative, reactive), the size and complexity of the segment (a

simple first-order stream, a large thermally-stratified lake, a density-stratified estuary, and tidally-influenced coastal segment), the nature of the control action, cost, public interest, etc. States should consider such factors and provide, as stated in Section IV.G.2.A. above, a time estimate by which the controls will result in WQS attainment, including an explanation of the basis for their conclusion. EPA will evaluate on a case-specific basis whether the estimated time for WQS attainment is reasonable.

d. What are some examples to illustrate how the preceding guidance would be applied?

EPA will evaluate on a case-specific basis each set of controls a state uses to support a decision to include a segment in Category 4b. The following circumstances are examples of controls which may be sufficient to support such a decision, depending on the facts of the specific case:

- A waterbody is impaired solely by point sources. Each point source has an NPDES permit containing limits sufficient to implement WQS in that waterbody by the end of the permit terms.
- A waterbody is impaired by nonpoint source sediment input. The state has adopted regulations requiring sources to implement certain best management practices (BMPs), and can enforce the regulatory requirements under state law. The state demonstrates that implementation of BMPs by these sources will result in meeting WQS in the waterbody in a reasonable time.
- A waterbody is impaired by nonpoint sources and the state has entered into contracts for source remediation. Implementation of the contract terms will result in attainment of WQS in the waterbody in a reasonable time. While the state cannot obtain specific performance as a contract remedy, it can file a claim for significant monetary damages if the terms are not met.
- A waterbody is impaired by nonpoint sources which have already implemented some or all of certain measures that will result in attainment of WQS in that waterbody in a reasonable time. The controls are unlikely to be removed or reversed (e.g., watershed restoration measures pursuant to 319 grant).
- A waterbody is impaired by nonpoint sources within federal lands where a forest management plan has been developed and is being implemented. In this case, certain elements are included in the forest management plan emphasizing BMP certification programs, require adaptive adjustments of practices, and specify monitoring options needed to demonstrate compliance with state water quality standards.

3. Which segments should states include in Category 4c?

Segments should be placed in Category 4c when the states demonstrates that the failure to meet an applicable water quality standard is not caused by a pollutant, but instead is caused by other types of pollution. Segments placed in Category 4c do not require the development of a TMDL. Pollution, as defined by the CWA is "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water" (section 502(19)). In some cases, the pollution is caused by the presence of a pollutant and a TMDL is required. In other cases, pollution does not result from a pollutant and a TMDL is not required. States should schedule these segments for monitoring to confirm that there continues to be no pollutant associated with the failure to meet the water quality standard and to support water quality management actions necessary to address the cause(s) of the impairment. Examples of circumstances where an impaired segment may be placed in Category 4c include segments impaired solely due to lack of adequate flow or to stream channelization.

EPA encourages the state to collect or assemble additional data and/or information to verify the initial placement of the segment, and to re-categorize the segment based on the assessment of the additional data and/or information where appropriate.

H. Which segments should states include in Category 5?

This category constitutes the section 303(d) list that EPA will review and approve or disapprove pursuant to 40 CFR 130.7. States must include on their section 303(d) list those waters required to be listed by the Clean Water Act and EPA's implementing regulations. Segments must be placed in Category 5 when, based on existing and readily available data and/or information, technology-based effluent limitations required by the Act, more stringent effluent limitations, and other pollution control requirements are not sufficient to implement an applicable water quality standard and a TMDL is needed. 40 CFR 130.7(b)(1).

A segment that is included in Category 5 may also be included in other categories where appropriate. For example, the segment may be attaining some applicable standards, in which case it may also be included in Category 2. As the state develops and EPA approves TMDLs for the pollutants identified as causing a Category 5 segment to exceed an applicable standard, the segment can be placed in Category 4a, but must also remain in Category 5 if it is exceeding any applicable standard and a TMDL needs to be developed for the pollutant causing that exceedance. However, note that Category 5 takes precedence if the state chooses to list a segment in only one category.

1. Is Category 5 of the Integrated Report for 2006 a new section 303(d) list, and must the state account for all segments previously listed as needing a TMDL in the 2004 list?

The section 303(d) list (segments in Category 5) once approved (or, if necessary, established by EPA following disapproval of a state's list) is a new list that replaces the previous list. The time frame for establishing TMDLs should be 8 to 13 years from the date of the original listing. For example, a segment originally included on the 1998 section 303(d) list, and still identified on the 2006 submission as requiring a TMDL, should be addressed by 2011.

Segments included on previous 303(d) lists or previously placed in Category 5 should be accounted for in subsequent submissions. However, the fact that a segment was previously included in Category 5 (or on the 303(d) list) does not necessarily mean that it must remain in Category 5 until a TMDL is established. In some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the applicable standard is met). Alternatively, the state may determine that other required control measures are sufficient to implement the applicable standard, and therefore may move the segment to Category 4b. The state may also determine based on the assessment of new data and information that pollutants do not cause or contribute to the impairment of the segment and therefore may move the segment to Category 4c. The state may also demonstrate that the original Category 5 listing was erroneous (i.e., not consistent with its assessment methodology or WQSs).

EPA may request, as discussed below, that the state demonstrate good cause for not including individual segments (including previously listed segments) in Category 5 (40 CFR 130.7(b)(6)(iv)). EPA may request this demonstration if the state does not develop an adequate record supporting the basis for

the decision or does not specifically explain its decision to move segments previously listed in Category 5 to other categories.

2. *What constitutes good cause for not including in the current submission segments that were previously included in Category 5 (the section 303(d) List)?*

To provide interested stakeholders with a more complete understanding of the changes that may have occurred from one IR cycle (or 303(d) submission) to the next, and to help expedite EPA's review and approval/disapproval action for those segments in Category 5, EPA recommends that states submit with their IR (or their 303(d) list) a table documenting changes in segment placement or categorization from the 2004 IR, and a brief summary of the basis for those changes. Table 5-2 provides an example of how states might do this.

Table 5-2. Documentation of "Good Cause" to Move Segments from Category 5.

Segment previously in Category 5	New placement in 2006	Explanation for change
Segment 214	Category 4a	TMDL completed and approved by EPA for Chromium.
Segment 266	Category 4c	The analysis of new data concluded that the aquatic life use impairment is solely due to low river flow.
Segment 321	Category 4b	The state has proposed an alternative approach to attain WQS by implementing required controls via NPDES permits.
Segment 349	Category 1	The assessment of new data documents that applicable WQS are now being attained.
Segment 350	Category 3	Previous listing in Category 5 was inconsistent with assessment methodology. Available data insufficient to determine attainment status.

In addition, EPA may request that states provide "good cause" for not including on the 2006 section 303(d) list (Category 5) submission segments that were previously included on the list. If EPA makes such a request, the state must explain its basis for not including the segment on the list. Consistent with 40 CFR 130.7(b), "good cause" for not including segments in Category 5 may be based on the following determinations:

- The assessment and interpretation of more recent or more accurate data in the record demonstrate that the applicable WQS(s) is being met.
- The results of more sophisticated water quality modeling demonstrate that the applicable WQS(s) is being met.
- Flaws in the original analysis of data and information led to the segment being incorrectly listed.
- A demonstration pursuant to 40 CFR 130.7(b)(1)(ii) that there are effluent limitations required by state or local authorities that are more stringent than technology-based effluent limitations, required by the CWA, and that these more stringent effluent limitations will result in the attainment of WQSs for the pollutant causing the impairment.

- A demonstration pursuant to 40 CFR 130.7(b)(1)(iii) that there are other pollution control requirements required by state, local, or federal authority that will result in attainment of WQSs for a specific pollutant(s) within a reasonable time (i.e., 4b).
- Documentation that the state included on a previous section 303(d) list an impaired segment that was not required to be listed by EPA regulations, e.g., segments where there is no pollutant associated with the impairment.
- Approval or establishment by EPA of a TMDL since the last section 303(d) list.
- A state inappropriately listed a segment that is within Indian country, as defined in 18 U.S.C. section 1151.
- Other relevant information that supports the decision not to include the segment on the section 303(d) list.

EPA has the authority to disapprove a submission if EPA identifies existing and readily available information that shows a segment is required by the CWA and EPA regulations be included in Category 5 (the section 303(d) list). In that situation, EPA will partially disapprove the state's list and identify additional segments for inclusion in Category 5.

3. Can previously listed segments (without new data or information) be delisted solely because they have not yet been assessed with a new methodology?

No. EPA does not believe it would be appropriate to remove segments previously listed in Category 5 (without new data or information) ***solely*** because they have not yet been assessed with a new methodology. However, there are some situations where a segment may be removed from Category 5 without relying on data and information collected after the date of the previous list. For example, if the state evaluates the pre-existing data and information using a new or revised methodology that accurately reflect the applicable WQS, and the results of that evaluation provide a "good cause" basis for not including the segment on the 2006 section 303(d) list, the segment would no longer need to be included in Category 5. However, the delisting should only occur if it is determined that the basis for the decision is consistent with the state's applicable WQSs and is reasonable.

4. Must Category 5 include threatened segments?

Yes, states must include threatened segments in Category 5 where appropriate (40 CFR 130.7(b)). The definition of "water quality limited segment" in EPA's regulations implementing CWA section 303(d) includes waters not expected to meet applicable water quality standards, which EPA refers to as "threatened" waters. 40 CFR 130.2(j). EPA recommends that states consider as threatened those segments that are currently attaining WQS, but are projected as the result of applying a valid statistical methodology to exceed WQS by the next listing cycle (every two years). For example, segments should be listed if the analysis of existing data and information demonstrates a declining trend in the segment's WQS, and the projected trend will result in a failure to meet that standard by the date of the next list (i.e., 2008 for purposes of the 2006 assessment cycle). The state assessment and listing methodology should describe how the state identifies threatened segments.

5. *Must Category 5 include an impaired segment if the specific pollutant causing the impairment has not been identified?*

Yes, if a designated use is not supported and the segment is impaired or threatened, the fact that the specific pollutant is not known does not provide a basis for excluding the segment from Category 5. These segments must be listed unless the state can demonstrate that no pollutant(s) causes or contribute to the impairment. Prior to establishing a TMDL for such segments the pollutant causing the impairment must be identified.

If the assessment of the new data and information demonstrates that the use impairment is not associated with a pollutant and is attributable only to other types of pollution (e.g., flow or habitat alteration) the segment may be placed into Category 4c. EPA has developed guidance to assist states in identifying the causes of a biological impairment. This document, "Stressor Identification Guidance," was released in December 2000 (EPA 822-B-00-025). This document is also available on the Internet at: http://www.epa.gov/ost/waterscience/biocriteria/stressors/stressorid.pdf.

6. *When should Category 5 include segments covered by fish and shellfish consumption advisories?*

EPA generally believes that fish and shellfish consumption advisories and certain shellfish growing area classifications based on segment specific information demonstrate impairment of CWA section 101(a) "fishable" uses. This applies to fish and shellfish consumption advisories and certain shellfish area classifications for all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. Furthermore, advisories based on the results from probability surveys or other predictive tools having a high degree of confidence (i.e., 95%) may also form the basis of listing segments as impaired. States, on their own prerogative, may choose to place segments into Category 5 (or on the section 303(d) list) using probability surveys when fish and shellfish consumption advisories and certain shellfish area classifications constitute potential risks to human health.

For purposes of determining whether a segment is impaired and should be included on section 303(d) lists states are required to consider all existing and readily available data and information (see 40 CFR 130.7). This should include physical, chemical and biological data, including data on pathogens (such as bacteria and phytotoxins) as well as fish and shellfish tissue concentration data, where such data are existing and readily available. States collect several types of monitoring data to help determine if segments are attaining or maintaining applicable water quality standards. If a state does not consider particular existing and readily available data and information in deciding which segments are impaired and must be placed on the section 303(d) list, they must provide an explanation to EPA of why they did not use such data and information.

While numeric human health criteria for ambient water column concentrations of pollutants are a basis for determining impairment, the attainment of such criteria does not always mean that designated uses are being protected. Segment-specific factors sometimes cause pollutants, including pathogens, to accumulate in fish and shellfish tissue at higher levels than predicted by the methodology used to derive the numeric human health criteria. Examples of such factors include water temperature, nutrient levels, food web structure, the concentration of dissolved organic carbon in the ambient water, and accumulations in the sediment. Hence, a segment can be meeting numeric ambient water quality criteria, but not attaining the designated uses because fish or shellfish tissue concentrations exceed levels that are protective of human health. In instances where tissue concentrations indicate an impairment of the

designated use, even though ambient water column concentrations of pollutants do not indicate an exceedance, EPA recommends states translate the applicable narrative criteria on a site- specific basis or adopt site specific numeric criteria to account for higher than expected exposures from contaminated fish or shellfish tissue and protect designated uses.

Applicable shellfish growing area classifications should be used as part of determinations of attainment of water quality standards and listing of impaired segments. Shellfish growing area classifications are developed by the National Shellfish Sanitation Program (NSSP) using water column and tissue data (where available), and information from sanitary surveys of the contributing watershed, to protect public health. The states review these NSSP classifications every three years. There are certain NSSP classifications and data that do not necessarily indicate WQS violation. These include: "Prohibited" classifications set as a precautionary measure due to the proximity of wastewater treatment discharges, or absence of a required sanitary survey; shellfish tissue pathogen data (which can fluctuate based on short-term conditions not representative of general water quality); or short-term actions to place growing areas in the closed status.

When deciding whether to identify a segment as impaired, states need to determine whether there are impairments of designated uses and narrative criteria, as well as the numeric criteria. Although the CWA does not explicitly direct the use of fish and shellfish consumption advisories or NSSP classifications to determine attainment of water quality standards, states are required to consider all existing and readily available data and information to identify impaired segments on their section 303(d) lists. For purposes of determining whether a segment is impaired and should be included on a section 303(d) list, EPA considers a fish or shellfish consumption advisory, a NSSP classification, and the supporting data, to be existing and readily available data and information that demonstrates non-attainment of a section 101(a) "fishable" use when:

- the advisory is based on fish and shellfish tissue data,
- a lower than "Approved" NSSP classification is based on water column and shellfish tissue data (and this is not a precautionary "Prohibited" classification or the state water quality standard does not identify lower than "Approved" as attainment of the standard),
- the data are collected from the specific segment in question, and
- the risk assessment parameters (e.g., toxicity, risk level, exposure duration and consumption rate) of the advisory or classification are cumulatively equal to or less protective than those in the state's water quality standards.

This applies to all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. However, for fish/shellfish advisories for "dioxin and dioxin-like compounds", due to unique risk characterization issues, listing decisions should be made on a case-by-case basis.

EPA acknowledges that in some cases, fish and shellfish consumption advisories may not demonstrate that a section 101(a) "fishable" use is not being attained in an individual segment. For example, a state may have issued a statewide or regional warning regarding fish tissue contaminated with a bioaccumulative pollutant, based on data from a subset of segments. A state may use a higher fish consumption value in determining the need for an advisory compared to the value used in establishing water quality criteria for the protection of human health. As noted above, a state may also classify shellfish growing areas "Prohibited" as a precautionary measure due to the proximity of wastewater treatment discharges or where a required sanitary survey has not been conducted. In such instances, these

segments need not be listed as impaired under section 303(d) unless there are segment specific data (and the data were not considered during the development or review of a non-precautionary NSSP classification), showing non-attainment of section 101(a) uses.

Some fish and shellfish consumption advisories and NSSP classifications are based on Food and Drug Administration (FDA) action levels as opposed to EPA's risk-based methodology for the protection of human health. FDA action levels are established to protect consumers of interstate shipped, commercially marketed fish and shellfish rather than fish and shellfish caught and consumed within the state. FDA action levels also include non-risk based factors (e.g., economic impacts) in their derivation, while water quality criteria must protect the designated uses without regard to economic impacts.

Where tissue contamination that triggers an advisory based on FDA action levels indicates an exceedance of state human health criteria, the advisory is an indication that section 101(a) "fishable" uses are not attained, and therefore, these segments should be placed into Category 5 or included on the 303(d) list.

7. How should Category 5 handle segments for which WQS are being revised or where temporary variances are in place?

The attainment decision must be based on the applicable WQS. In the case of a standard that is being revised, that standard is not applicable until it has been approved by EPA. 40 CFR 131.21. Therefore states must include in Category 5 segments that do not meet an applicable WQS at the time of listing, even if the new standard is in the process of being revised to be less stringent, until such time as EPA approves the revised standard. However, these segments would not have to be considered a high priority for TMDL scheduling. If EPA approves a revised standard in the future, the segment may be removed from the section 303(d) list at that time provided the segment does not meet the listing requirements with respect to the new standard. With respect to variances, which are temporary and usually apply to a particular discharger, but may also apply to a segment, the applicable WQS typically is the underlying standard, and therefore the segment should be placed in Category 5 if it does not support one or more of the designated uses in the underlying standard.

8. Must Category 5 include a segment where the criterion has been exceeded, but the exceedance is the result of background or natural conditions?

In some cases, a segment may exhibit water quality characteristics or chemical concentrations approaching or exceeding those levels established in the state's water quality standards due solely to non-anthropogenic causes. If the state's water quality standards include a specific exclusion for exceedances caused by "natural conditions", these segments would not be considered impaired (i.e., they could be excluded from Categories 4 and 5). These segments should instead be placed into Categories 1 through 3 as appropriate. For such segments, these background or natural conditions can be defined by assessing the results of water quality monitoring efforts, by the use of predictive models, or a characterization based on data from a watershed with similar hydrologic, land use, and pollutant loading characteristics.

9. What additional information is needed for segments in Category 5?

Identification of Pollutants

Section 130.7(b)(4) requires states to identify, for each segment included on the section 303(d) list (Category 5), the "pollutants causing or expected to cause violations of the applicable water quality standards." For the 2006 listing cycle, segments identified as impaired or threatened based on biological criteria should be included in Category 5 unless the state demonstrates that a pollutant is not causing the impairment, or inclusion in Categories 4a or 4b is warranted. States must identify all pollutants that are known to be causing the impairment of a segment.

Prioritization and TMDL Schedule

Section 303(d)(1) requires states to "establish a priority ranking" for the segments it identifies on the list, taking into account the severity of the pollution and the uses to be made of such segments, and to establish TMDLs "in accordance with the priority ranking." Consistent with section 130.7(b)(4) each state shall also submit biennially a priority ranking including waters targeted for TMDL development in the next two years. Each listed pollutant-segment combination (i.e., those in Category 5) must receive a clear priority ranking, which EPA recommends be either in the form of a scheduled TMDL completion date or a ranking such as high, medium, or low. States have considerable flexibility in deciding how best to apply these factors in prioritizing their list of waters needing TMDLs. For example, a waterbody with a severe water quality problem may be given a high priority for TMDL development in light of the severity of the concern. Conversely, a severe water quality problem may require complex analysis before developing a TMDL, and the state may therefore choose to give it a lower priority to allow time to collect necessary information and complete the analysis. Thus, the most severe water quality problems or the most toxic pollutants need not always be given the highest priority for TMDL development, if circumstances warrant a lower priority. EPA will review the priority ranking but will not take action to approve or disapprove it.

Federal regulations provide that "schedules for submissions of TMDLs shall be determined by the Regional Administrator and the State" (40 CFR 130.7(d)(1)). Factors such as the state's use of a rotating basin approach or commitments specified in court orders or consent decrees may be considered when states develop priorities and schedules. EPA recommends that states develop a schedule for establishing TMDLs as expeditiously as practicable and that the schedule (1) identifies which TMDLs will be established in each year of the upcoming integrated reporting cycle and (2) estimates the approximate number of TMDLs to be established for each year thereafter. EPA encourages the states to ensure that the schedule provides that all TMDLs for every pollutant-segment combination listed on previous section 303(d) lists be established in a time frame that is no longer than 8 to 13 years from the time the pollutant-segment combination is first identified in Category 5. EPA will not take any action on the schedule. The schedule is intended to help the public and EPA to understand the state's priorities and assist in work planning.

In developing their schedules, states will need to decide which TMDLs are higher priority than others. States need not specifically identify each TMDL as high, medium or low priority. Instead, the schedule itself can reflect the state's priority ranking. The CWA does not prescribe a particular method of expressing a priority ranking, and EPA believes a TMDL schedule is a reasonable, efficient way to demonstrate priority ranking. In some circumstances, the order in which TMDLs are established might be

subject to some modifications as the schedule is implemented, based on logistical efficiencies or data availability.

Ohio Environmental Protection Agency

Ohio 2018 Integrated Water Quality Monitoring and Assessment Report

Lake Erie

Division of Surface Water
Final Report

June 2018

Table of Contents

Section A: An Overview of Water Quality in Ohio A-1

Section B: Ohio's Water Resources
B1: Facts and Figures B-1
B2: 2020 Water Quality Goals B-8

Section C: Managing Water Quality
C1: Program Summary – Surface Water C-1
C2: Program Summary – Environmental and Financial Assistance C-19
C3: Program Summary – Drinking and Ground Waters C-20
C4: Program Summary – Environmental Services C-23
C5: Cooperation among State Agencies and Departments C-23
C6: Funding Sources for Pollution Controls C-24
C7: New 303(d) Vision Implementation in Ohio C-28

Section D: Framework for Reporting and Evaluation
D1: Assessment Units D-2
D2: Evaluation of the Ohio River D-6
D3: Evaluation of Lake Erie D-6
D4: Ohio's Water Quality Standards and Use Designations D-7
D5: Sources of Existing and Readily Available Data D-8
D6: Public Involvement in Compiling Ohio's Section 303(d) List of Impaired Waters D-12
D6.1: Solicitation for External Water Quality Data, 2018 Integrated Report Project (May 23, 2017) D-12
D6.1.1: Web Page with Instructions for Submitting Level 3 Credible Data D-13
D6.2: Web Page Announcing 2018 Integrated Report Preparation D-17
D6.3: Notice of Availability and Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-18
D6.3.1: Response to Comments Received regarding the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-19
D6.3.2: Comments Received during the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-36

Section E: Evaluating Beneficial Use: Human Health (Fish Contaminants)
E1: Background E-1
E2: Rationale and Evaluation Method E-1
E3: Results E-6
E4: Supplemental Information E-25
E4.1: Calculation of Fish Concentrations from Water Quality Standards Inputs E-25
E4.2: What's the difference between the Fish Consumption Advisory decision and the impairment decision? E-29

Section F: Evaluating Beneficial Use: Recreation
F1: Background (Bacteria) F-1
F2: Evaluation Method (Bacteria) F-2
F3: Results (Bacteria) F-8
F3.1: Lake Erie Public Beaches F-8
F3.2: Rivers and Streams F-17
F3.3: Inland Lakes F-22
F4: Recreation Assessment for Algae in Western Lake Erie F-27
F4.1: Background F-27
F4.2: Rationale and Evaluation Method F-27

F4.3: Results F-36

Section G: Evaluating Beneficial Use: Aquatic Life
G1: Background and Rationale G-1
G1.1: Background G-1
G1.2: General Determination of Attainment Status G-2
G2: Evaluation Method G-3
G2.1: Rivers and Streams: Large River Assessment Units (LRAUs) G-3
G2.2: Rivers and Streams: Watershed Assessment Units (WAUs) G-3
G2.3: Lake Erie Shoreline and Islands: Lake Erie Assessment Units (LEAUs) G-6
G3: Results G-7
G3.1: LRAUs G-8
G3.2: WAUs G-10
G3.3: LEAUs G-14

Section H: Evaluating Beneficial Use: Public Drinking Water Supply
H1: Background H-1
H2: Evaluation Method H-1
H2.1 Beneficial Use Designation H-1
H2.2 Water Quality Standards H-3
H2.3 Attainment Determination H-4
H2.4 Data Sources and Requirements H-5
H2.5 Ohio River Assessments H-6
H3: Results H-6
H4: Supplemental Information H-8

Section I: Considerations for Future Lists
I1: Wetlands I-1
I1.1 Documented High-Quality Wetlands I-2
I1.2 Significant Wetland Areas I-2
I1.3 Next Steps I-3
I2: Mercury Reduction at Ohio EPA I-11
I2.1: Ohio Law I-11
I2.2: Ohio Projects I-11
I2.3: Ohio Resources I-12
I2.4: Federal Rules I-12
I3: Inland Lakes and Reservoirs I-12
I3.1: Background of Ohio's Inland Lake Water Quality Monitoring Program I-13
I3.2: Status of Inland Lakes Program I-13
I3.2.1: Lake sampling – Lake Habitat Aquatic Life Use Assessment I-14
I3.2.2: Water Quality Standards for the Protection of Aquatic Life in Lakes I-14
I3.3: Preview of Future Listings I-15
I3.3.1: Methodology Preview: Lake Habitat Use Assessment I-16
I3.3.2: Results I-16
I4: Future Lake Erie Monitoring and Assessment I-19

Section J: Addressing Waters Not Meeting Water Quality Goals
J1: Ohio's 303(d) Listing Framework J-1
J2: Prioritizing the Impaired Waters: the 303(d) List J-3
J3: Addressing Nutrients in Lake Erie J-10
J4: Summary of Results J-16
J5: Changes for the 2018 303(d) List J-20
J6: Schedule for TMDL Work J-26
J6.1: Ohio TMDL Status J-26

J6.2: Long-Term Schedules for Monitoring and TMDLs J-26
J6.3: Short-Term Schedule for TMDL Development J-26

Section K: Maps
Ohio 8-Digit Hydrologic Units
Section 303(d) Human Health (Fish Tissue) Use Categories Watershed Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Large River Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Lake Erie Assessment Units
Section 303(d) Recreation Use Categories Watershed Assessment Units
Recreation Use Index Scores Watershed Assessment Units
Section 303(d) Recreation Use Categories Large River Assessment Units
Recreation Use Index Scores Large River Assessment Units
Section 303(d) Recreation Use Categories Lake Erie Assessment Units
Section 303(d) Aquatic Life Use Categories Watershed Assessment Units
Aquatic Life Use Index Scores Watershed Assessment Units
Section 303(d) Aquatic Life Use Categories Large River Assessment Units
Aquatic Life Use Index Scores Large River Assessment Units
Section 303(d) Aquatic Life Use Categories Lake Erie Assessment Units
Aquatic Life Use Index Scores Lake Erie Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Watershed Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Large River Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Lake Erie Assessment Units
Ohio Total Maximum Daily Load Program Progress

Section L: Summary Tables of Waterbody Conditions; List of Prioritized Impaired Waters; and Category 4B Demonstrations
L1: Status of Watershed Assessment Units L-2
L2: Status of Large River Assessment Units L-42
L3: Status of Lake Erie Assessment Units L-43
L4: Section 303(d) List of Prioritized Impaired Waters (Category 5) L-44
L5: Category 4B Demonstrations Contained in Approved Ohio TMDLs to Date L-85
L5.1: Projects included in the 2012 Integrated Report L-85
L5.2: Projects included in the 2014 Integrated Report L-97

Section M: An Overview of Ground Water Quality in Ohio
M1: Introduction M-1
M2: Ohio's Ground Water Programs M-2
M3: Ohio's Major Aquifers M-4
M4: Site-Specific Ground Water Contamination Summary M-8
M5: Major Sources of Ground Water Contamination M-10
M6: Summary of Ground Water Quality by Aquifer M-15
M7: Conclusions and Future Directions for Ground Water Protection M-40

Section N: References

List of Tables and Figures

Tables

B-1. Ohio's water resource statistics B-1
B-2. List of Ohio's principal streams and large rivers B-4
B-3. 2020 goals for four beneficial uses, Lake Erie and the Ohio River B-9
C-1. OWDA loans administered during calendar years 2015-2016 ..... C-26
D-1. Ohio water quality standards in the 2018 IR D-8
D-2. Data types used in the 2018 IR D-10
D-3. Descriptions of data used in the 2018 IR from sources other than Ohio EPA D-11
E-1. Comparison between fish concentration values and FCA program values E-3
E-2. Example data for calculating a weighted average fish tissue value E-4
E-3. A summary of changes in attainment from 2016 to 2018 IR E-6
E-4. Waters not supporting the human health use because levels of PCBs or mercury in fish tissue exceed the threshold level upon which the WQS criterion is based. These waters are category 5. ..... E-7
E-5. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based. These waters are category 1 ..... E-9
E-6. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based and which were categorized as impaired in the 2016 IR. These waters have become category 1 with the current assessment E-11
E-7. Waters with contaminants other than PCBs and mercury that affect fish tissue (included on the 303(d) list). These waters are category 5 ..... E-11
E-8. Waters for which the existing unimpaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 1h E-11
E-9. Waters for which the existing impaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 5h E-14
E-10. Waters with current fish tissue data where inadequate samples exist to determine impairment status. These waters are category 3i E-20
E-11. Large rivers and their impairment status E-22
E-12. Inland lakes and their impairment status E-23
E-13. Lake Erie assessment units and their impairment status E-25
F-1. Summary of the RU assessment methods F-2
F-2. Determining assessment status of Lake Erie shoreline AUs F-5
F-3. Determining assessment status of WAUs and LRAUs F-7
F-4. Recreation index score matrix F-8
F-5. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the western basin (Sandusky Bay and west) F-11
F-6. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the central basin (east of cedar point) F-12
F-7. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the central basin shoreline AU F-14
F-8. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the western basin shoreline AU F-14
F-9. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the islands shoreline AU. F-15

F-10. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the Sandusky basin shoreline AU. F-15
F-11. Aggregated exceedance frequencies at 65 Lake Erie public beaches from 2013-2017 (pooled by Lake Erie shoreline AU to report use support). F-17
F-12. Annual Ohio EPA *E. coli* sampling effort and RU assessment (using Ohio EPA data) in Ohio streams, rivers and inland lakes, 2011-2017 recreation seasons F-18
F-13. Overall differences in the assessment of RU attainment, 2010-2018 ..... F-18
F-14. Summary assessment status of the RU in Ohio's WAUs by assessment cycle F-20
F-15. Summary assessment status of the RU in Ohio's LRAUs F-21
F-16. Summary assessment status of the RU for inland lakes, 2013-2017 ..... F-22
F-17. Swimming advisory posting at Ohio's inland lake public beaches (2013-2017). F-25
F-18. Proposed Ohio Lake Erie AUs F-28
F-19. Data collected in Ohio waters of Lake Erie that is credible data level 3 or could likely be approved as level 3 with review and coordination F-31
F-20. The number of 10-day time frames exceeding the 30 percent coverage threshold (with 20,000 cells/mL) or greater) in the western basin open water unit for each year beginning in 2012 ..... F-36
G-1. Summary of aquatic life use assessment for Ohio's WAUs, LRAUs and LEAUs: 2002-2018 Integrated Report cycles G-9
G-2. Breakdown by size category of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-3. Breakdown by designated or recommended aquatic life use of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-4. Prevalence of the top five causes of aquatic life use impairment in WAUs and LRAUs based on biological and water quality survey data collected from 2003-2016 ..... G-12
H-1. PDWS attainment determination. H-4
H-2. Waters designated as impaired for (not supporting) the PDWS beneficial use. H-12
H-3. Summary of PDWS assessment results for the nitrate, pesticide and algae indicators H-18
I-1. List of high-quality wetland areas I-3
I-2. List of significant wetland areas I-8
I-3. Proposed lake habitat use criteria I-15
I-4. Summary of the lake habitat use assessment for lakes sampled in 2015-2016 using the draft assessment methodology described in this section I-17
J-1. Category definitions for the 2018 Integrated Report and 303(d) list J-2
J-2. Potential listing opportunities in Ohio's listing framework. J-3
J-3. Priority points for impaired AUs. J-5
J-4. Summary of results for each beneficial use J-16
J-5. Number of AUs removed from or added to the 303(d) list J-20
J-6. Summary of reasons for changes to the 2018 303(d) list J-20
J-7. Removals from the 303(d) list because of a flaw in the original listing J-21
J-8. Removals from the 303(d) list because of new data J-21
J-9. Addition to the 303(d) list because of flaw in original listing J-23
J-10. Additions to the 303(d) list because of new data J-23
J-11. Ohio TMDLs approved by U.S. EPA at the 11-digit hydrologic unit scale J-27
J-12. Ohio TMDLs approved by U.S. EPA at the 12-digit hydrologic unit scale J-31
J-13. Short-term schedule for TMDL development J-33
M-1. Summary of Ohio's Ground water protection programs. M-3
M-2. Ground water contamination summary M-8
M-3. Major sources of potential ground water contamination M-14

M-4. Counts of public water systems where 2007-2017 decadal mean values of compliance data occur in the Watch List and Impaired Category M-17
M-5. Counts of wells where 2007-2017 decadal mean values of AGWQMP data occur in the Watch List and Impaired Category (maximum values used for nitrate). M-27

Figures

B-1. Map of Ohio's principal streams and large rivers. B-2
B-2. Ohio Scenic River System B-3
C-1. Ohio Lake Erie AOCs and major Lake Erie tributaries C-7
D-1. Ohio's large rivers (rivers with drainages greater than 500 mi^2) and their watersheds D-3
D-2. Ohio's 12-digit WAUs and 8-digit hydrologic units D-4
D-3. Ohio's Lake Erie assessment units – western basin, islands, Sandusky basin and central basin shorelines and open water areas D-5
E-1. Illustration of the relationship among the WQS values, the values that trigger issuance of fish consumption advisories (FCAs) and the resulting decision regarding waterbody impairment associated with an FCA. E-2
E-2. Flowchart for the categorization of fish tissue data for the IR E-6
F-1. Lake Erie public beaches sampled under Ohio's bathing beach monitoring program. F-3
F-2. Erie and Sandusky County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-3. Cuyahoga and Loraine County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-4. Example of bacteria sampling locations, upper Walhonding River study area (2010) F-6
F-5. Frequency of advisory postings at Ohio's Lake Erie public beaches F-16
F-6. Histogram of RU index scores for Ohio's WAUs F-19
F-7. New Ohio Lake Erie AUs F-29
F-8. Monitoring locations in the western basin of Lake Erie in 2017 ..... F-30
F-9. Bloom severity observed and projected (with 40 percent TP reduction) since 2002 ..... F-35
G-1. Flowchart for determining if WAU score can be derived based on available sampling locations. G-5
G-2. Percent attainment status and goal progress ("100 percent by 2020") for monitored miles of Ohio's LRAUs (23 rivers/38 AUs/1247.54 miles total) G-10
G-3. Average full attainment watershed score for Ohio's HUC11 WAUs (IR cycles 2002-2010) and HUC12 WAUs (IR cycles 2010-2018). G-13
G-4. Breakdown by designated or recommended aquatic life use of sites in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 (n= 3,911 sites) G-13
G-5. Status and trend of aquatic life use "80 percent by 2020" goal for wading and principal stream and river sites in Ohio based on the last five IR cycles. G-14
G-6. Average IBI scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-16
G-7. Average MIwb scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-17
H-1. Ohio WAUs, LRAUs and LEAUs that contain at least one active surface water drinking water intake. H-2
H-2. AUs with nitrate indicator results H-9
H-3. AUs with pesticide indicator results H-10
H-4. AUs with algal toxin indicator results H-11
I-1. Supplemental weekly sampling locations for chlorophyll and microcystin; sampled by University of Toledo and the Ohio State University/Stone Laboratory (boxed sites) researchers in 2017 ..... I-20
J-1. Listing by smaller AUs and individual beneficial uses J-3
J-2. Priority points assigned based on use impairment or other factors (extra points). J-4

J-3. Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey. J-7
J-4. Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey. J-9
J-5. Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009. J-10
J-6. Key steps in the state TMDL and binational Annex 4 processes. J-13
J-7. Summary of 2018 IR results for watershed AUs by beneficial use. J-17
J-8. Summary of 2018 IR results for large river AUs by beneficial use. J-18
J-9. Summary of 2018 results by AU type. J-19
J-10. Summary of reasons for changes to the 2016 303(d) list. J-21
M-1. Aquifer types in Ohio modified from ODNR glacial and bedrock aquifer maps. M-4
M-2. Iron distribution in AGWQMP wells, overlain on major aquifers. M-5
M-3. Manganese distribution in AGWQMP wells, overlain on major aquifers. M-6
M-4. Distribution of public water systems on impaired list for arsenic for both treated and raw waters. M-34
M-5. Distribution of public water systems in impaired category and on the watch list for sulfate in raw water. M-35
M-6. Distribution of public water systems on fluoride MCL watch list for treated and raw water. M-36
M-7. Distribution of public water systems with maximum nitrate in treated and raw water greater than the MCL. M-37

List of Acronyms and Abbreviations

AmphIBI	amphibian index of biotic integrity
AMP	Atrazine monitoring program
AOC	Area of Concern (as identified under the Great Lakes Water Quality Agreement)
ARRA	American Recovery and Reinvestment Act of 2009
AU	assessment unit
BAV	beach action value
BEACH	Beaches Environmental Assessment and Coastal Health (Act)
BMP	best management practice
BNR	biological nutrient removal
BUI	Beneficial Use Impairment (as described in the Great Lakes Water Quality Agreement)
CABB	Center for Applied Bioassessment and Biocriteria
CAFO	Concentrated Animal Feeding Operations
CDBG	Community Development Block Grant
CDC	Center for Disease Control
cfu	colony forming unit
Corps	U.S. Army Corps of Engineers
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSO	combined sewer overflow
CSP	Conservation Stewardship Program
CWH	coldwater habitat
CWA	Clean Water Act
DDAGW	Division of Drinking and Ground Waters
DDT	dichlorodiphenyltrichloroethane
DEFA	Division of Environmental and Financial Assistance
DES	Division of Environmental Services
DLG	digital line graph
DRG	digital raster graphic
DSW	Division of Surface Water
EAG	External Advisory Group
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
EWH	exceptional warmwater habitat
FCA	fish consumption advisory
FFY	federal fiscal year
FSA	Farm Service Agency
FWPCA	Federal Water Pollution Control Act
GIS	Geographic Information System
GLLA	Great Lakes Legacy Act
GLRC	Great Lakes Regional Collaboration
GLRI	Great Lakes Restoration Initiative
GLSM	Grand Lake St. Marys
GLWQA	Great Lakes Water Quality Agreement
GRP	Grassland Reserve Program
GRTS	Generalized Random Tessellation Stratified (survey design)
HAB	harmful algal bloom
HSD	honest significant difference
HUC	hydrologic unit code

IBI	index of biotic integrity
ICI	invertebrate community index
IDP	indirect discharge permit
IR	Integrated Report
kg	kilogram
L	liter
LA	load allocation
LAMP	lakewide action and management plan
LCI	Lake Condition Index
LDI	Landscape Development Intensity
LEAU	Lake Erie assessment unit
LEC	(Ohio) Lake Erie Commission
LENT	Lake Erie nutrient targets
LEPF	(Ohio) Lake Erie Protection Fund
LH	lake habitat
LHD	local health district
LRAU	large river assessment unit
LRW	limited resource water
LTCP	long-term control plan
MBI	Midwest Biodiversity Institute
MF	membrane filter
mg	milligram
mi^2	square miles
mL	milliliter
MIwb	modified index of well-being
MOR	monthly operating data
MPN	most probable number
MRBI	Mississippi River Basin Initiative
MS4	municipal separate storm sewer systems
MWH	modified warmwater habitat
NARS	National Aquatic Resource Survey
NCCA	National Coastal Condition Assessment
NCWQR	National Center for Water Quality Research
NEORSD	Northeast Ohio Regional Sewer District
ng	nanogram
NHD	National Hydrography Dataset
NLCD	National Land Cover Dataset
NOAA	National Oceanic and Atmospheric Administration
NOI	notice of intent
NPDES	National Pollutant Discharge Elimination System
NPS	nonpoint source
NRCS	Natural Resources Conservation Service
NSMP	Nonpoint Source Management Plan
NSSP	National Shellfish Sanitation Program
NWI	National Wetland Inventory
NWQI	National Water Quality Initiative
OAC	Ohio Administrative Code
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
OMZA	outside mixing zone average

ORC	Ohio Revised Code
ORSANCO	Ohio River Valley Water Sanitation Commission
OSIP	Ohio Statewide Imagery Program
OTMP	Ohio Tributary Monitoring Program
OWDA	Ohio Water Development Authority
OWRC	Ohio Water Resources Council
PAHs	polyaromatic hydrocarbons
PHA	public health advisory
ppb	parts per billion
PCB	polychlorinated biphenyls
PCR	primary contact recreation
PDWS	public drinking water supply
POTW	publicly owned treatment works
PS	point source
PTI	permit to install
PTO	permit to operate
PWS	public water supply
QA	quality assurance
QC	quality control
QDC	qualified data collector
QSC	Quicksilver Caucus
RAP	Remedial Action Plan
RAS	return activated sludge
RF3	Reach File Version 3
RM	river mile
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SFY	state fiscal year (July 1 to June 30)
SIU	significant industrial user
sq mi	square miles
SSM	single-sample maximum
STORET	STOrage and RETtrieval (a U.S. EPA water quality database)
STV	statistical threshold value
SWIF	Surface Water Improvement Fund
SWIMS	Surface Water Information Management System
TDS	total dissolve solids
TMDL	total maximum daily load
TNTC	too numerous to count
TOC	total organic carbon
µg	microgram
USDA	United States Department of Agriculture
U.S. EPA	United States Environmental Protection Agency
USC	United States Code
USGS	U.S. Geological Survey
UV	ultraviolet
VIBI	vegetation index of biotic integrity
VIBI-FQ	VIBI – floristic quality
WAS	waste activated sludge
WAUs	watershed assessment unit
WBLE	western basin of Lake Erie

WEG	(Ohio EPA's) wetland ecology group
WHIP	Wildlife Habitat Incentives Program
WHO	World Health Organization
WLA	wasteload allocation
WPCLF	Water Pollution Control Loan Fund
WQ	water quality
WQC	Water Quality Certification (Section 401)
WQM	Water Quality Management (plan)
WQPSD	Water Quality Permit Support Document
WQS	water quality standards
WRP	Wetlands Reserve Program
WRRSP	Water Resource Restoration Sponsor Program
WSRLA	Water Supply Revolving Loan Account
WWH	warmwater habitat
WWTP	wastewater treatment plant

Executive Summary

The *Ohio Integrated Water Quality Monitoring and Assessment Report* summarizes water quality conditions in the State of Ohio. This report satisfies Ohio's water quality reporting requirements under Sections 303(d), 305(b) and 314 of the federal Clean Water Act. This report was last updated in 2016. **Analysis and listing changes are based on data collected during 2015 and 2016 for aquatic life and human health (fish tissue) uses; recreation and public drinking water supplies uses consisted of data from 2016 and 2017**.

Using methods devised to determine the suitability of waters for four specific uses—aquatic life (fish and aquatic insects), recreation (such as boating and swimming), human health (related to fish tissue contamination) and public drinking water supplies—available data were compared with water quality goals. The results indicate which waters are meeting goals and which are not. Waters not meeting the goals for one or more of the four types of uses are referred to as *impaired.* The waters found to be impaired are prioritized and scheduled for further study and restoration.

This report describes the methods used to judge impairment of each type of use and have evolved in each reporting cycle as the Agency gains access to more data and develops better ways to interpret them.

Results are reported for 1,538 watershed units, 38 large river units (in Ohio's 23 rivers that drain more than 500 square miles) and seven Lake Erie units. Additional information on streams draining between 20 and 500 square miles is also presented as this subset of waterbodies is used to calculate and track progress of Ohio's 80 percent full attainment by 2020 goal for wading and principal streams and rivers.

The percent of monitored miles of Ohio's large rivers in full attainment stayed steady compared to the same statistic reported in the 2016 IR. The 100 percent full attainment by 2020 aquatic life goal statistic for Ohio's largest rivers now stands at 87.5 percent, compared to 87.4 percent from the 2016 report. Conversely, smaller streams continue to improve with the percent of assessed sites in full aquatic life use attainment increasing from 66.1 percent to 69.3 percent. The top reasons for aquatic life impairment continue to be sediment, nutrients, habitat modification, hydromodification and organic enrichment.

For the human health use (fish tissue), polychlorinated biphenyl (PCB) contamination in fish is the cause of most of the human health impairments in Ohio. Mercury is the second leading cause.

The chemicals of concern causing impairment of the public drinking water supply use include nitrate, atrazine and cyanotoxin (due to certain algae). The primary source of the chemicals is nonpoint source runoff from agricultural land use. Additional sources of nitrate include home and commercial fertilizer application, failing septic systems, unsewered areas and wastewater treatment plant discharges. Of the 119 public drinking water supply assessment units, 37 are now listed as impaired by algae, with another 17 on the watch list for algae.

The recreation (bacteria) use analysis focuses on the number of bacteria in the water. For Lake Erie public beaches, the frequency of swimming advisories varies widely, ranging from 1.2 percent to more than 50 percent. Generally, beaches located near population centers have the most problems. Results are also reported for streams and inland lakes.

The recreation use has also been assessed for algae impacts in the western basin of Lake Erie. The western basin shoreline, the islands shoreline and the western basin open water assessment units are all listed as impaired by algae.

Of the 6,316 possible category assignments, the 2018 303(d) list includes changes in 209, with 69 delistings and 135 new listings. Most 303(d) removals and new listings are due to new data.

Changes since the 2016 Integrated Report

Changes made between the 2016 Integrated Report and the 2018 Integrated Report are as follows:

- This report contains revised assessment units for the entire Ohio portion of Lake Erie in Section D1.
- This report also discusses future methodology development for recreation assessment of Lake Erie based on algae blooms in Section I.
- The methodology for evaluating the recreation (bacteria) use has been updated to include the revised *E. coli* water quality criteria, effective January 2016, in Section F1.
- A new subcategory, 5p, was added to track which impairments are based on threatened status, primarily for nutrients.

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

D7. Public Comments and Responses to Comments on Draft Report

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

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

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

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

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

Comments Related to Specific Watersheds

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Addressing Waters Not Meeting Water Quality Goals

The federal Clean Water Act (CWA) requires that states identify waters not meeting water quality goals and then prioritize them for action to restore their beneficial uses[1]. The resulting list of prioritized impaired waters is known as the 303(d) list. Ohio's 2018 303(d) list is presented in Section L4 of this report.

Ohio made substantial changes to its listing process in 2010 (see Sections A and J in the *2010 Integrated Report* [Ohio EPA, 2010]); Ohio's *2012 Integrated Report* and 303(d) list (Ohio EPA, 2012) contained relatively few changes compared to the major adjustments made in 2010. A significant change to the 2014 report included the addition of a new indicator (algae) to the public drinking water supply (PDWS) use. The 2016 report contained changes in how the information was organized and what data sets were used (for instance, 2015 data was included for both recreation and PDWS uses) and was amended to include new open water assessment units for Lake Erie and a new recreation assessment methodology based upon algae. In 2018, the most significant changes are to the recreation use assessments and how Lake Erie Assessment Unit are defined (increased from six to seven units). The assessment based on bacteria has been updated to comply with the new *E. coli* WQS which include a 90-day geometric mean and statistical threshold value (see Sections F1-F3). In addition, an assessment method for recreation based on algae for the western basin of Lake Erie has been added in Section F4.

This section outlines the listing framework, lays out the prioritizing and delisting processes and results and reports on the status of Ohio total maximum daily load (TMDL) efforts including schedules for future TMDLs in Ohio.

J1. Ohio's 303(d) Listing Framework

The process of listing involves assigning a condition status (a category) for each of four beneficial uses for each assessment unit (AU). Data requirements, descriptions of available data, assessment methodologies and results were discussed and reported by individual beneficial use in Sections E, F, G and H.

In 2010, Ohio modified the five-category listing structure suggested by U.S. EPA to accommodate listing by beneficial use and introduced subcategories to give more information about the status of each water. In 2012, one additional subcategory - t - was added to aid reporting the status of AUs relative to approved TMDLs and data availability. In 2014, the "t" subcategory was altered slightly and a new category - d - was added to better reflect circumstances encountered as Ohio EPA revisits watersheds having approved TMDLs. In 2016, a new subcategory in Category 5 (5-alternative or 5-alt) was added to report on alternative restoration approaches for CWA 303(d) listed waters. Such waters will still require TMDLs until water quality standards are achieved. Ohio does not have any AUs listed under 5-alt in this report but anticipates using this subcategory in the future. In 2018, a new subcategory "p" is added under Category 5 to track which impairments are based on threatened status, primarily for nutrients. Table J-1 summarizes the categories and subcategories used in this report.

Also, in 2010, Ohio began listing by beneficial use within each AU and reporting on a smaller AU size. Watershed AUs shifted from an average size of 130 square miles to 27 square miles. Under the old system, an impairment of one beneficial use caused the AU to be Category 5 (impaired) regardless of the status of other uses.

[1] Beneficial uses include aquatic life, human health (fish contaminants), recreation and public [drinking] water supply.

Table J-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[2]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[3] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[4]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

Figure J-1 illustrates the significance of these changes in the listing procedures. A = aquatic life use; R = recreation use; H = human health use; and P = public water supply use. The numbers refer to the categories described in Table J-1 above. In the example, an AU listed in 2008 as impaired (category 5) appeared on the 2010 303(d) list as five units with four uses each; thus, reporting one piece of information changed to reporting 20 pieces of information. Whereas the 2008 list indicated only that the unit was impaired, the new listing indicates all the following information:

- Aquatic life use is impaired (5) in one unit, not impaired (1) in one and unknown (3) in one. A TMDL to address impairments has been completed in one unit (4A) and the impairment in the remaining unit is being addressed in some other way (4B, for example, a discharge permit).
- Recreation use is impaired (5) in three units, unknown (3) in one and a TMDL to address the impairment in one unit has been completed (4A).
- Human health results based on fish tissue analysis indicate that four of the five units are impaired (5) and one is unknown (3).
- Public drinking water supplies exist in only two of the five units and one of those is impaired (5). The status of the other is unknown (3).

[2] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[3] HUC means hydrologic unit code.
[4] Ohio currently has no waters that are listed under this subcategory.

For the aquatic life use, Ohio EPA continues the transition that began in 2010 of translating data evaluated at the 11-digit hydrologic unit size to the smaller 12-digit size. We expect that the few remaining relic categories will be dealt with as those areas are monitored again.

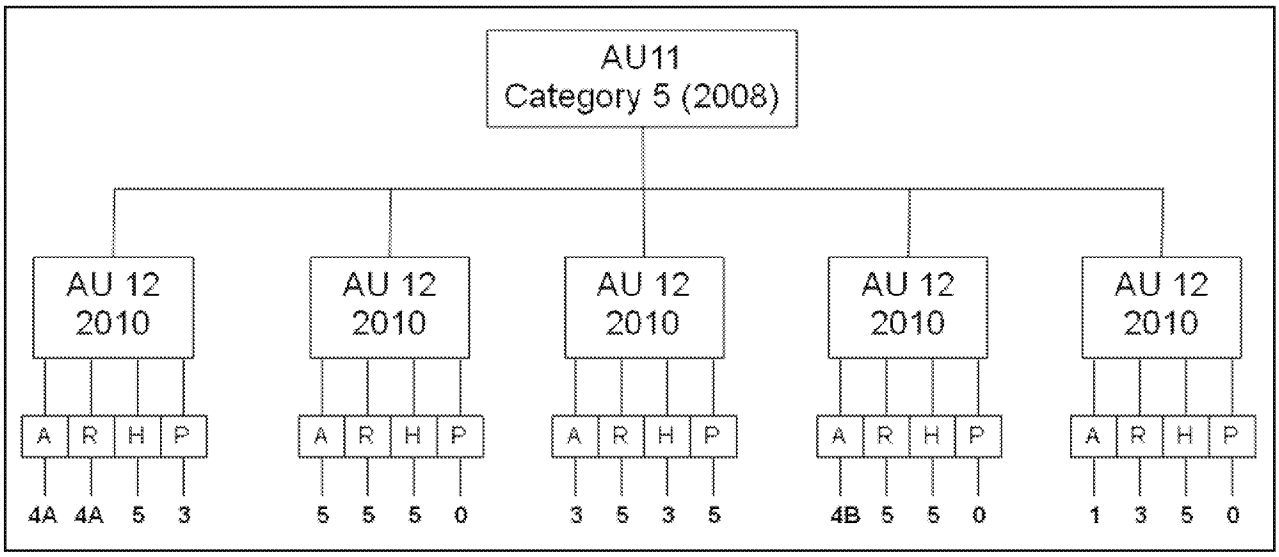

Figure J-1 — Listing by smaller AUs and individual beneficial uses.

Table J-2 shows the number of potential listings that could result from the combination of smaller AUs and listing by individual use.

Table J-2 — Potential listing opportunities in Ohio's listing framework.

	2008 and Before			2010 and After		
AU Types	Number of AUs	Status Reports per Unit	Total Number of Possible Listings	Number of AUs	Status Reports per Unit	Total Number of Possible Listings
Watershed	331	1	331	1538	4	6,152
Large river	23	1	23	38	4	152
Lake Erie shore	3	1	3	3	4	12
Totals	357	1	357	1,579	4	6,316

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

As previously stated, the impaired waters are identified and assigned a category by individual beneficial use in Sections E, F, G and H. After waters are identified as impaired and it is determined that a TMDL is required, the waters are prioritized to produce the 303(d) list (see Section L4). Because Ohio uses a highly integrated monitoring and TMDL linkage to ensure efficient use of resources, it makes sense to continue to set priorities by AU rather than by individual use.

Ohio River and Open Waters of Lake Erie

ORSANCO has lead responsibility for the multi-jurisdictional Ohio River water quality as outlined in Section D2. Binationally, the U.S. and Canada are working together under the GLWQA to address water quality issues in Lake Erie. Ohio EPA is actively participating in TMDLs for tributaries as well as many other actions for Lake Erie outlined in Section J3, so priority for Ohio EPA-initiated TMDLs is assigned a low priority for these waters. TMDLs in watersheds that drain to the Ohio River and Lake Erie will reduce the pollutant load delivered to each water.

Inland Waters and Lake Erie Shoreline

A point system is used to assign priority to impaired AUs. A total of 22 points could be assigned to an AU, distributed as shown in Figure J-2. The priority results for specific AUs are reported in Section L and in AU summary information available on the web page.

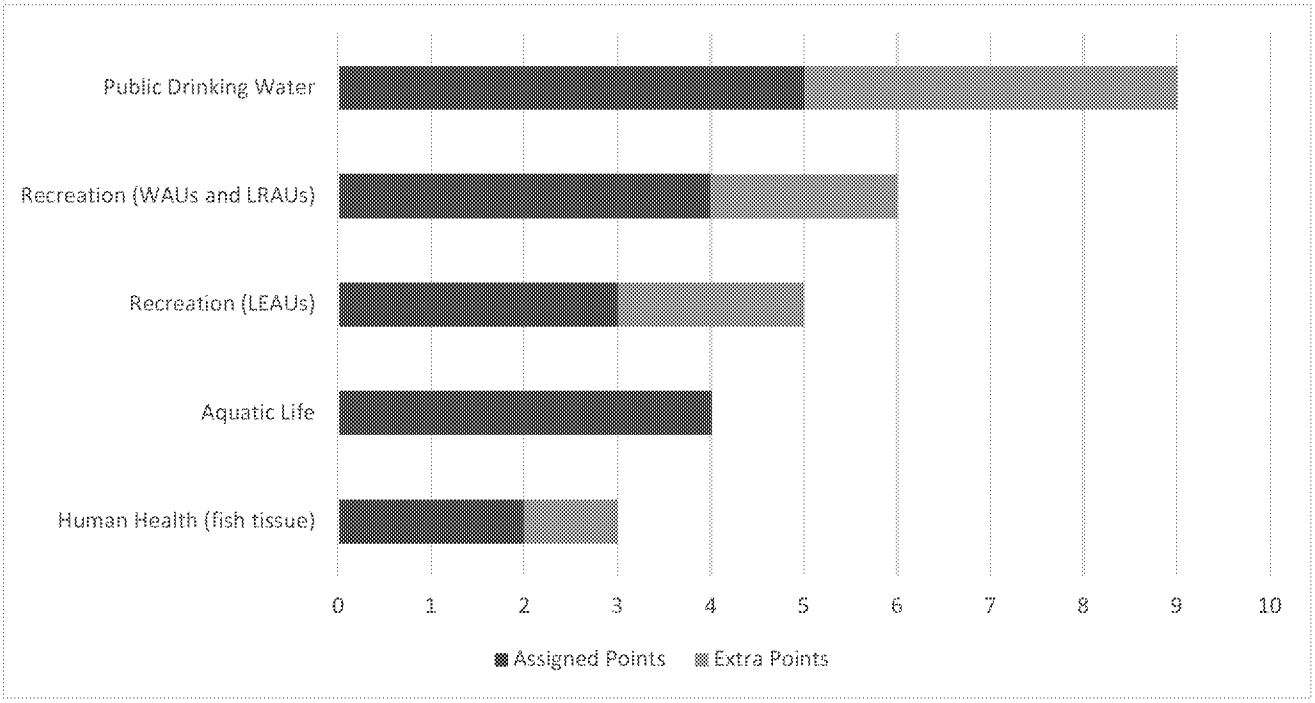

Figure J-2 — Priority points assigned based on use impairment or other factors (extra points).

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.

Two additional points may be awarded to AUs that are impaired for the recreation use and contain Class A waters. Class A waters are those most suitable for recreation, such as popular paddling streams and lakes with public access points developed, maintained and publicized by governmental entities. Priority points for Lake Erie recreation use are calculated based on the bathing water geometric mean for *E. coli* and the percentage of days that the AU exceeded that criteria. An impaired AU gets one point if the percentage of days in exceedance was in the range of 0 to 10 percent; two points if in the range of 10.1 percent to 20

percent; and three points if the percentage of days in exceedance was greater than 20.1 percent. Two additional points may also be awarded to AUs that are impaired for recreation use based on algae.

Table J-3 — Priority points for impaired AUs.

Point Values	Condition	Number of AUs		
		WAUs	LRAUs	LEAUs
Human Health Use impairment (fish tissue contaminants) (maximum of 3 points)				
2	Listed as impaired for Fish Contaminants (Human Health Use)	436	32	4
1	Additional point in AUs that exceed 500 ppb for PCBs or Hg	3	0	0
Recreation Use impairment – WAUs and LRAUs (maximum of 6 points)				
1	Listed as impaired with AU score between 0 and 25	108	0	
2	Listed as impaired with AU score between 75.1 and 100	92	17	
3	Listed as impaired with AU score between 25.1 and 50	271	2	
4	Listed as impaired, with AU score between 50.1 and 75	279	7	
2 extra	Additional points if AU contains Class A waters	74	26	
Recreation Use impairment - LEAUs (maximum of 5 points)				
1	Listed as impaired with 0 to 10% of season exceeding *E. coli* criteria			1
2	Listed as impaired with 10.1% to 20% of season exceeding *E. coli* criteria			1
3	Listed as impaired with > 20.1% of season exceeding *E. coli* criteria			2
2 extra	Additional points if AU is impaired for algae			3
Aquatic Life Use impairment (maximum of 4 points)				
1	Listed as impaired, with AU score between 0 and 25	161	0	2
2	Listed as impaired, with AU score between 75.1 and 100	35	8	0
3	Listed as impaired, with AU score between 25.1 and 50	119	2	2
4	Listed as impaired, with AU score between 50.1 and 75	93	2	0
Public Drinking Water Use impairment (maximum of 9 points)				
5	Listed as impaired for Public Drinking Water Use for one indicator	33	5	6
2 extra	Additional points in AUs impaired for each additional indicator	1	3	0
1	Not listed as impaired, but on watch list; one point for each indicator	33	3	0

As outlined in Section C3, the priority schedule for TMDL projects in Table J-15 was developed considering the above information, as well as the following:

- Social Factors (highly used recreational waters, drinking water supply for significant populations, ongoing/sustained involvement of any local groups or government, etc.)
- Value Added (is a TMDL the most efficient way to achieve improved water quality?)
- Is there an approved watershed action plan – if so how many implemented projects?
- How much regulatory authority exists over sources?
- Is there an alternative way to improve water quality more quickly than a TMDL? (for example, immediate implementation of an existing plan or projects, or imposing more stringent permit limits to address a localized problem)
- Are there other factors in play? Examples include:
    - Pending enforcement for a discharger (possible 4B option)
    - U.S. Army Corps of Engineers modeling of reservoir discharge to improve downstream water quality
    - Local or statewide strategy or requirements in place to address an issue/pollutant (for example, new health department rules for home sewage treatment systems if they are sole/primary source of impairment)

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.

In the *2014 Integrated Report*, Ohio listed waters impaired by algal toxins for the first time. In the 2016 report, more waters are listed, especially lakes and reservoirs. 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.

Based on a review of the inland lakes or reservoirs that were listed as impaired or on the Watch List for algae indicators in the 2014 Integrated Report, as well as the more recent data collected for algae at PDWS with intakes in inland lakes or reservoirs that led to the 303(d) listing in this report, the following inland lakes were chosen as Ohio's priorities for the next few years:

- Tappan Lake in Harrison county (upper Little Stillwater Creek)
- W.H. Harsha Lake in Clermont County (Lucy Run - East Fork Little Miami River)
- Clyde/Beaver Creek Reservoir in Seneca County (Beaver Creek, Green Creek)

The impairments (or watch list parameters) cited include nitrate, pesticides and algae indicators. Where there is a TMDL developed, it is older and/or does not include the stream reaches that most impact the lake/reservoir. In most cases, there are active local parties interested and/or there is a sizable population served by these sources. Ohio EPA considers nutrients (primarily phosphorus as the TMDL parameter) to be the priority for the inland lake efforts. However, the cause of impairment in more than one area also includes pesticides and/or nitrates, so other pollutants may be added to the TMDL or alternative plan. These waters are listed on the 303(d) Priority list in Section L4 as follows:

AU Number	AU Name	Sq. Mi. in Ohio	Human Health	Recreation	Aquatic Life	PDW Supply	Priority Points
05040001 15 03	Upper Little Stillwater Creek	29.72	1	1	3	5	5
05090202 12 03	Lucy Run-East Fork Little Miami River	32.48	1	1	5	5	7
04100011 12 02	Beaver Creek	29.3	3i	4Ah	4A	5	5
04100011 12 03	Green Creek	30.78	1	5	4A	5	9

While they do not have the highest priority points, the AUs with higher priority points that include a PDWS impairment already have a TMDL under development or will be addressed through other means such as the Great Lakes Water Quality Agreement Annex 4 nutrient reduction efforts discussed in J3.

Tappan Lake

- Stillwater Creek basin – primarily forest with mining influences.
- 2,350 acres of water surface.
- Provides drinking water to the Village of Cadiz (pop. ~ 3,350).
- Lake is operated by the U.S. Army Corp of Engineers. It is a multipurpose project for flood reduction, recreation and fish and wildlife enhancement.
- Assessed by Ohio EPA in 2012-2013 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin).

2018 IR Update

The Tappan Lake Nutrient Reduction Initiative (TLNRI) was formed at the end of 2017 by the Muskingum Watershed Conservancy District and the Village of Cadiz. TLNRI's goal is to eliminate the presence of harmful algal blooms and their resultant water-borne toxins in Tappan Lake within the next decade. The TLNRI has outlined the following steps toward achieving their goal:

- Phase 1: Comprehensive study of existing water quality data for the watershed and identification of gaps (year one)
- Phase 2: Collection of data to fill gaps, evaluation and selection of remedial actions for the watershed (years two through four)
- Phase 3: Implementation of action plan for the watershed (years five through 10)

Ohio EPA is an active partner in the initiative and will provide support through participation in the four subgroups. The Stillwater Creek watershed is a high priority project for either a TMDL or an alternative plan. The Agency will continue to participate in the TLNRI efforts and determine which approach is most appropriate as that work unfolds.

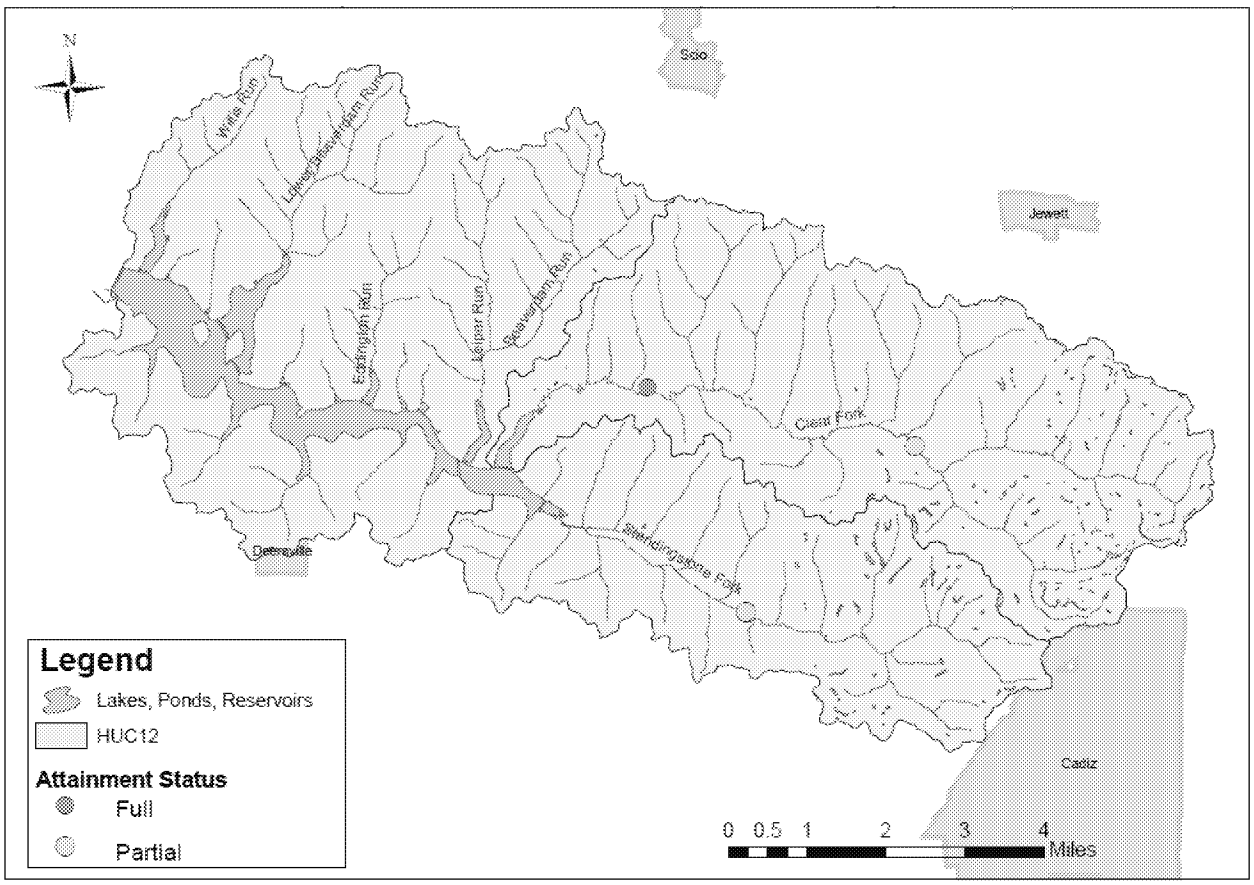

Figure J-3 — Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey.

William H. Harsha Lake

- Located in the East Fork of the Little Miami River watershed – largely agriculture and forest with some urban influence.
- 2,160 acres of water surface.
- Lake is operated by the U.S. Army Corp of Engineers and is a multipurpose project for flood reduction, water supply, recreation and wildlife habitat.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin) and placed it on the watch list for atrazine.

From the *Ohio EPA East Fork Little Miami River Technical Support Document, 2014*:

- Clermont County operates a community public water system that serves a population of approximately 117,097 people. The water supply sells water to the village of Batavia, village of Williamsburg and New Richmond Robin-Grays water system. Clermont County operates two ground water plants and one surface water plant. The BMW surface water plant draws water from an intake structure on Harsha (East Fork) Lake. The system's treatment capacity is approximately 27.5 million gallons per day, but current average production is 12.5 million gallons per day.
- There are several environmental organizations active in the East Fork Little Miami River watershed. The oldest of these is Little Miami Incorporated (LMI) which has been active for 45 years. Most of LMI's activities have involved the purchase of conservation easements or property purchases in the riparian zone of the river. Clermont County and SWCDs in Clermont, Brown, Highland and Clinton counties formed the East Fork Watershed Collaborative to take advantage of ODNR's Watershed Coordinator Program.
- Several research projects have been initiated in the East Fork watershed and Harsha Lake by U.S. EPA's National Exposure Research Laboratory in Cincinnati and the U. S. Army Corps of Engineers. Among other topics research and monitoring are examining HABs and nutrients, impacts on the Clermont County water intake, carbon sequestration, methane release, nutrient trading, environmental tipping points and fish population genetics. Currently, seven different projects are conducting monitoring in Harsha Lake.

2018 IR Update

The East Fork Watershed Cooperative, formed in 2001, continues to be active in addressing water quality issues in the East Fork Little Miami River watershed. The Cooperative is in the process of updating watershed action plans into Nine Element Nonpoint Source Implementation Strategy Plans. The first updated plan for the Fivemile Creek HUC 12, approved by Ohio EPA on July 31, 2017, is located upstream of Harsha Lake. The East Fork Little Miami River watershed is a high priority TMDL project for TMDL development. The Agency plans to initiate the next steps in the TMDL development process by the 2020 IR.

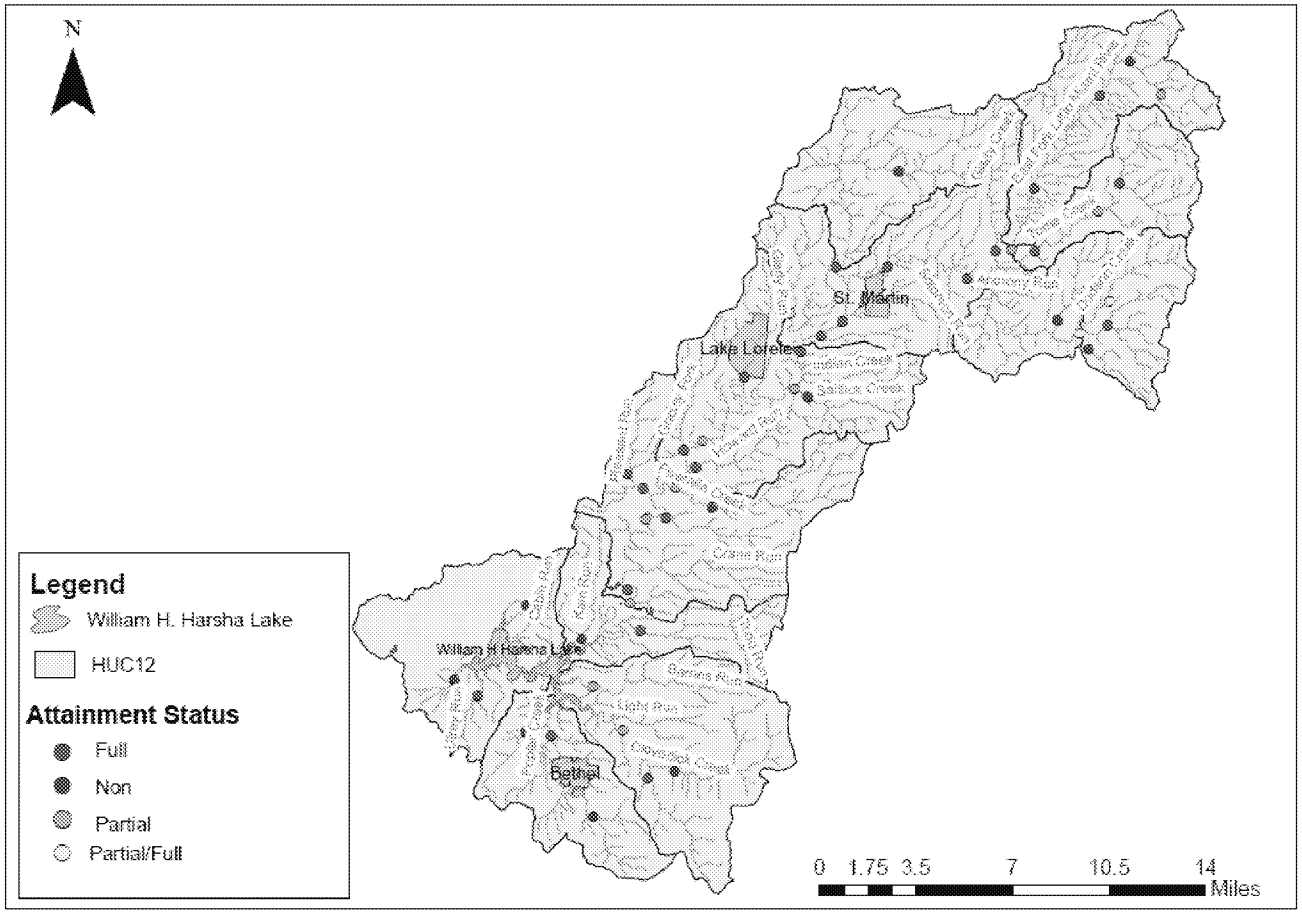

Figure J-4 — Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey.

Clyde/Beaver Creek Reservoir (up-ground)

- Sandusky river watershed - primarily agricultural land use above reservoir.
- 110 acres of water surface.
- Provides drinking water to the City of Clyde (pop. ~6,320).
- Reservoir was assessed by Ohio EPA in 2009-2010 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* placed the lake on the watch list for PDWS use based on algae indicators (microcystin) and nitrates. In the *2016 Integrated Report* it was listed as impaired for PDWS use based on algae indicators.
- The Raccoon Creek reservoir that also serves the City of Clyde is filled with water from Beaver Creek. The Raccoon creek reservoir was listed in the 2014 IR as impaired for PDWS based on algae indicators (microcystin).
- A TMDL for the lower Sandusky River was completed by Ohio EPA and approved by U.S. EPA but did not set specific loads for Beaver Creek since the stream was not listed as impaired.

2018 IR Update

Sampling of Raccoon Creek reservoir was completed in 2016 and 2017 as part of Ohio EPA's inland lakes sampling program. The results of this sampling will be included in the 2020 IR and will be used to direct the next steps in the restoration process for this watershed.

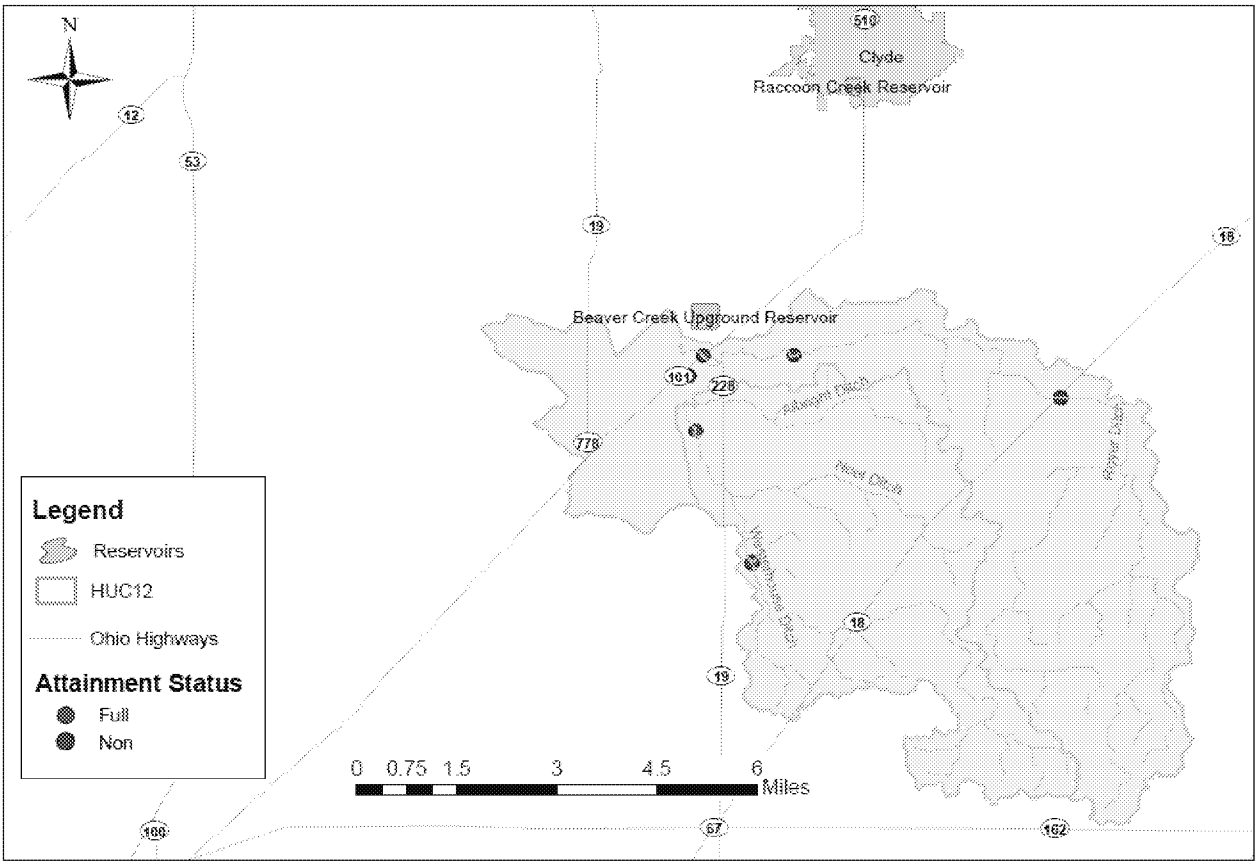

Figure J-5 — Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009.

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 in accordance with the Domestic Action Plan; and active participation on Annex 4 (Nutrients) and other Great Lakes Water Quality Agreement (GLWQA) efforts. Effective lake management and coordinated implementation are needed to address the Western Basin of Lake Erie algal blooms and the Central Basin hypoxia issues, requiring a multi-state and binational effort. Currently, there are many parallel planning and management efforts ongoing at the state, federal and binational level. For the open waters of Lake Erie, respecting and working through the binational governance framework is the appropriate process and Ohio intends to aggressively pursue state measures that complement the process and are neither duplicative nor contradictory.

Great Lakes Water Quality Agreement

Binationally, the U.S. and Canada are working together under the GLWQA to develop nutrient reduction strategies; and create and implement action plans to meet the targets. Annex 4 of the 2012 GLWQA specifically addresses nutrients in the Great Lakes and contains short-term requirements specific for Lake Erie. The U.S. and Canada formally adopted new phosphorus targets for the western and central basins of Lake Erie in February 2016. These targets have been incorporated into Ohio's Domestic Action Plan and are the goals for all the state's efforts to reduce phosphorus loading to the lake.

As water quality has improved through the decades, Ohio EPA has addressed most of the significant point source problems and are now left with primarily nonpoint source related impairments. The current Lake Erie algal blooms and Central Basin hypoxic zone are driven by nutrient loading to the Lake. Recent assessments by the Ohio Phosphorus Task Force (Phases I and II) and Annex 4's Objectives and Targets Task team, as well as a Nutrient Mass Balance Study completed by Ohio EPA in December 2016, 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 waterbody (Lake Erie). To compliment the 40 percent phosphorus reduction goals set forth by the Annex 4 committee, a separate analysis is being done to set seasonal/annual load reductions targets for the smaller tributaries (for example, within the Maumee basin). Ohio is directly involved in developing these goals and reduction targets needed for Lake Erie while moving forward on developing implementation strategies and acting to reduce nutrient contributions to the lake.

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.

Lake Erie Collaborative Agreement

The Lake Erie Collaborative Agreement was another state/province led-initiative; it was signed in June 2015 by Ohio, Michigan and Ontario (*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. One of the goals spelled out in the Collaborative Agreement was to reduce nutrient levels going into Lake Erie by 40 percent. The other was to develop a strategic plan to manage dredge material 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.

Ohio's Domestic Action Plan for Lake Erie

The State of Ohio's Domestic Action Plan expanded upon the *Collaborative Implementation Plan* and was submitted to U.S. EPA on Feb. 7, 2018. The commitment to meet the Collaborative Agreement phosphorus reduction goals of 20 percent by 2020 and 40 percent by 2025 was also incorporated into this plan. The plan is not intended to static but to be revised following the adaptive management philosophy. (*lakeerie.ohio.gov/Portals/0/Ohio DAP/DAP 1-0 Final for USEPA 2018-02-07.pdf*).

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 continue utilizing this tool to target implementation in Ohio's Lake Erie watersheds as it works to meet the Annex 4 phosphorus targets and allocations.

The TMDL document 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.

Ohio has completed TMDLs 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 nutrients and algae and have established phosphorus 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. However, Ohio is working with U.S. EPA, Tetratech (the contractor), Indiana and Michigan to develop a method for setting load reduction goals for the smaller tributaries to Lake Erie (for example, the tributaries to the Maumee river) and evaluate whether the tributary TMDLs will provide the load reductions needed to protect the lake. Where the local TMDL reductions are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps.

The Annex 4 process of developing loading targets and Domestic Action Plans are very similar 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.

State TMDL vs Binational Annex 4

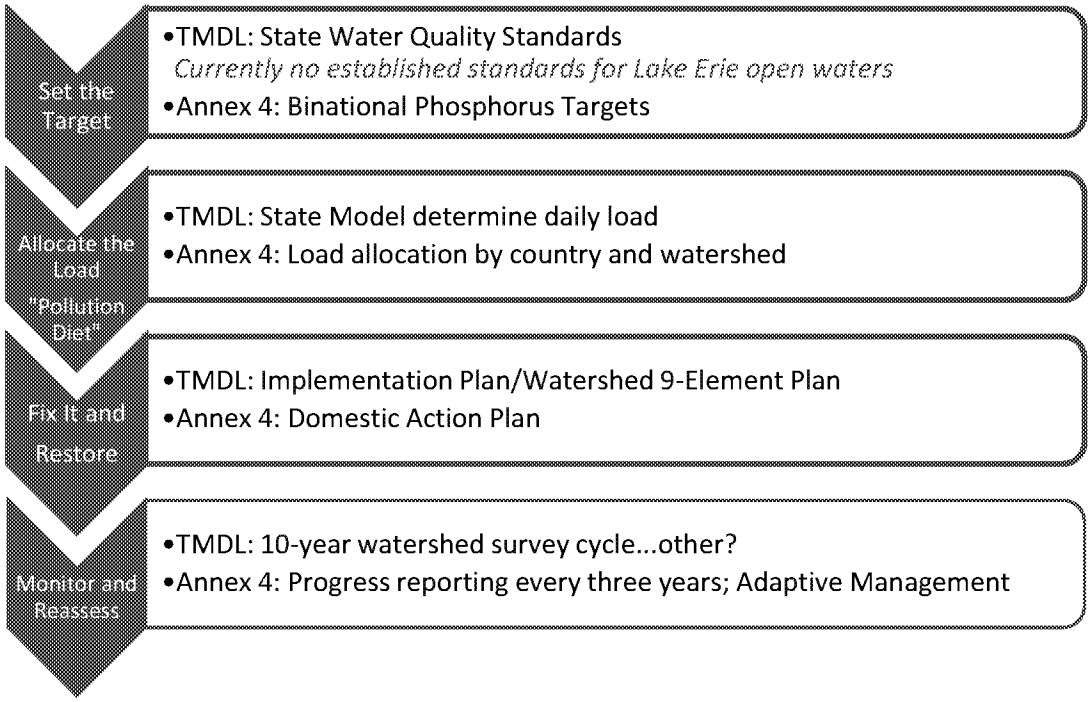

Figure J-6 — Key steps in the state TMDL and binational Annex 4 processes.

Ohio-based Nutrient Reduction Efforts

Ohio EPA's *NPS Management Plan* (Plan) is the Agency's guiding document that outlines recommended strategies, goals and objectives for controlling nonpoint sources of water quality impairment. The Plan was most recently updated in 2014 and identifies specific management activities to be implemented by Ohio EPA's NPS management program. The recent algal blooms on Lake Erie, the Ohio River and across the inland waters of Ohio were caused by excessive nutrients and exacerbated by changing weather patterns such as warmer temperatures and more intense storm events. The long-term solution is to reduce sources of nutrients while holistically restoring stream health and improving the waterway's ability to assimilate and utilize nutrients. This is also known as the stream's assimilative capacity. Restoring stream health will not only reduce the amounts of nutrients that reach the receiving water body, but restoration of in-stream and riparian habitat supports a healthy ecosystem, builds resilience to climate change impacts and improves recreational opportunities. The most current version of Ohio's *NPS Management Plan* is available at *epa.ohio.gov/Portals/35/nps/NPS_Mgmt_Plan.pdf.*

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 in 2010 and has expanded the scope and scale of implementation, developed a statewide strategy, targeted funding and undertaken legislative action to address the problem. As part of the more than $3 billion Ohio has invested comprehensively in the Lake Erie watershed, more than $150 million was made available starting in 2014 to help to public water systems keep drinking water safe and wastewater facilities reduce the amount of phosphorus they discharge into the Lake Erie watershed. In addition, Ohio continues to target millions of dollars to support local health departments to find and fix faulty residential septic systems that are contributing nutrients to Ohio waters.

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

- 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 *epa.ohio.gov/dsw/wqs/NutrientReduction.aspx*.
- GLRI Demonstration and Nutrient Reduction Projects — Nine grants totaling more than $13.9 million were awarded to Ohio. Highlights include: installation of the first two saturated buffers installed in Ohio; installation of approximately 70 controlled drainage structures; development of 52 whole farm conservation plans; planting of more than 9,000 acres of cover crops; installation and planting of 50 acres of reconstructed or restored wetlands; restoration of 3,500 linear feet of stream and 500 feet of streambank stabilization; installation of 4,400 feet of two-stage ditches; installation of rain gardens and vegetated infiltration basins in the Toledo area; and completion of 29 storm water, wetland and stream restoration projects in Cuyahoga County.
- 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[5]; 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.
- Ohio Senate Bill 150 — This bill, effective Aug. 21, 2014, requires, among other things, that beginning Sept. 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.
- Ohio HB 64 — This bill, effective June 30, 2015, required 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 *legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-64*.
- 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.
- 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.
- 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 several recommendations to be implemented during the next several years. For example,

[5] "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.

the report recommends ways for farmers to better manage fertilizers and animal manure and 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 *agri.ohio.gov/topnews/waterquality/docs/FINAL_REPORT_03-09-12.pdf.*

- 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 *lakeerie.ohio.gov/Portals/0/Reports/Task_Force_Report_October_2013.pdf.*
- 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 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 *epa.ohio.gov/portals/35/documents/point_source_workgroup_report.pdf.*

J4. Summary of Results

The consolidated results of the 2018 analysis are shown in Table J-4 and Figure J-7 — Summary of 2018 IR results for watershed AUs by beneficial use. through Figure J-9.

Table J-4 — Summary of results for each beneficial use[6]

	Human Health (fish tissue)	Recreation	Aquatic Life	Public Drinking Water Supply
Watershed assessment units				
Not being used for PDWS	0	0	0	1434
Attains	230	157	500	31
Unknown	872	186	109	39
Impaired, needs TMDL	436	750	411	33
Impaired, TMDL complete	0	445	408	1
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	14	0
Impaired, natural condition	0	0	96	0
Total watersheds considered	**1538**	**1538**	**1538**	**1538**
Large river assessment units				
Not being used for PDWS	0	0	0	29
Attains	6	3	18	0
Unknown	0	3	0	4
Impaired, needs TMDL	32	26	12	5
Impaired, TMDL complete	0	6	5	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	3	0
Impaired, natural condition	0	0	0	0
Total large rivers considered	**38**	**38**	**38**	**38**
Lake Erie assessment units				
Not being used for PDWS	0	0	0	1
Attains	0	0	0	0
Unknown	3	2	3	0
Impaired, needs TMDL	4	5	4	6
Impaired, TMDL complete	0	0	0	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	0	0
Impaired, natural condition	0	0	0	0
Total Lake Erie considered	**7**	**7**	**7**	**7**

[6] 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.

L

Summary Tables of Waterbody Conditions; Lists of Prioritized Impaired Waters; and Monitoring and TMDL Schedules

Section L contains tables showing the 303(d) listing details for each of the assessment unit types and is divided into five sections as follows:

- Section L1: Status of Watershed Assessment Units
- Section L2: Status of Large River Assessment Units
- Section L3: Status of Lake Erie Assessment Units
- Section L4: Section 303(d) List of Prioritized Impaired Waters
- Section L5: Category 4B demonstrations contained in approved Ohio TMDLs to date

In Sections L1 through L4, there are four columns labeled, in order, Human Health, Recreation, Aquatic Life and PDW Supply. These four columns represent each beneficial use included in the 303(d) list of impaired waters and the numbers in the columns represent the category for that assessment unit for that beneficial use. Table L-1 defines the categories and subcategories assigned to each use.

Table L-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[1]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[2] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[3]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

[1] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[2] HUC means hydrologic unit code.
[3] Ohio currently has no waters that are listed under this subcategory.

05090202 90 02	Little Miami River Mainstem (O'Bannon Creek to Ohio River)	1757	5	4Ah	5	0	4

Section L3. Status of Lake Erie Assessment Units		Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
Assessment Unit	Assessment Unit Name						
041202000101	Lake Erie Islands Shoreline (≤3m)	4.99	5	5	5	5	14
041202000201	Lake Erie Western Basin Shoreline (≤3m)	47.88	5	5	5	5	17
041202000202	Lake Erie Sandusky Basin Shoreline (≤3m)	68.01	5	5	5	5	16
041202000203	Lake Erie Central Basin Shoreline (≤3m)	13.39	5	5	5	0	9
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
041202000302	Lake Erie Sandusky Basin Open Water (>3m)	361.71	3i	3	3	5	5
041202000303	Lake Erie Central Basin Open Water (>3m)	2544.98	3i	3	3	5	5

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 37 of 38. PageID #: 9510

ED_002091_00004708-00064

Section L4. Section 303(d) List of Prioritized Impaired Waters							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
041202000201	Lake Erie Western Basin Shoreline (<=3m)	47.88	5	5	5	5	17
04100009 90 02	Maumee River Mainstem (Beaver Creek to Maumee Bay)	6608	5	5h	5	5	16
041202000202	Lake Erie Sandusky Basin Shoreline (<=3m)	68.01	5	5	5	5	16
04100009 90 01	Maumee River Mainstem (Tiffin River to Beaver Creek)	6058	5	5h	5	5	15
05030103 08 06	Burgess Run-Yellow Creek	20.19	5h	5h	5	5	15
041202000101	Lake Erie Islands Shoreline (<=3m)	4.99	5	5	5	5	14
04100005 90 01	Maumee River Mainstem (IN border to Tiffin River)	2315	5	5h	1	5	13
04100007 12 06	Big Run-Flatrock Creek	48.28	5	5h	5	1	12
05040003 03 04	Delano Run-Kokosing River	32.95	5	5h	5	0	12
05060001 04 06	Glade Run-Scioto River	38.34	5h	5h	5	3i	12
05060001 06 02	Middle Mill Creek	59.91	3	5h	5d	5	12
05090202 10 05	West Fork East Fork Little Miami River	28.88	1h	5h	5	5	12
05030103 90 01	Mahoning River Mainstem (Eagle Creek to Pennsylvania Border)	1075	5	5h	5	0	11
05080002 90 02	Great Miami River Mainstem (Four Mile Creek to Ohio River)	5371	5	5h	5	0	11
04100006 03 03	Flat Run-Tiffin River	33.17	5	5h	5	3i	11
04100007 06 04	Dry Fork-Little Auglaize River	57.07	1	5h	1	5	11
04110002 02 03	Lake Rockwell-Cuyahoga River	61.33	5	5	4Ah	5	11
05060001 90 02	Scioto River Mainstem (Olentangy River to Big Darby Creek)	2641	5	5h	5	0	10
05080001 90 01	Great Miami River Mainstem (Tawawa Creek to Mad River)	1853	5	5h	5	3i	10
04100003 02 04	West Branch St Joseph River	14.76	5	5h	5	0	10
04100004 02 05	Prairie Creek-St Marys River	42.22	5	5h	5	0	10
04100004 03 03	Yankee Run-St Marys River	59.44	5	5h	5	0	10
04100006 05 02	Brush Creek	66.01	5h	5h	5	0	10
04100012 02 04	Mouth Vermilion River	28.13	5	5h	5h	1	10
04110003 01 05	Lower Ashtabula River	18.27	5	5h	5	0	10
05030103 08 05	Headwaters Yellow Creek	19.36	3	5h	5	5	10
05080002 07 04	Dicks Creek	27.71	5h	5h	5	0	10
05090202 02 06	Shawnee Creek-Little Miami River	32.07	5h	5h	5d	0	10
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
05060001 90 01	Scioto River Mainstem (L. Scioto R. to Olentangy R.); excluding O'Shaughnessy and Griggs reservoirs	1068	5	3i	5	5	9
04100001 03 07	Heldman Ditch-Ottawa River	28.15	5	5h	5	0	9
04100003 03 03	Eagle Creek	35.00	5h	5h	5	0	9
04100004 01 02	Center Branch St Marys River	29.00	5h	5h	5	0	9
04100004 02 04	Twelvemile Creek	23.58	5h	5h	5	0	9
04100009 06 03	Haskins Road Ditch-Maumee River	15.73	3	5h	1	5	9
04100011 12 03	Green Creek	30.78	1	5h	4A	5	9
04110001 01 08	Baker Creek-West Branch Rocky River	26.08	5	5h	5	0	9

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 38 of 38. PageID #: 9511

ED_002091_00004708-00065

National Water Program Measures Review

Strategic Measures and Mission Measures (1-25, ***italicized, greyed, and bolded)*** will be retained.

• Office of Ground Water and Drinking Water (OGWDW)• Office of Science and Technology (OST)• Office of Wastewater Management (OWM)• Office of Wetlands, Oceans and Watersheds (OW

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Description	Reporting Office	Program	FY 2018-2022 Strategic Plan	FY 2019 Annual Performance Plan (Budget)
Watersheds with surface waters not meeting standards.	*OWOW*	*Water Quality*	*SM-4*	*SWP-01*
Number of Community Water Systems out of compliance with Health Based Standards.	*OGWDW*	*Drinking Water*	*SM-2*	*DW-01*
Number of non-federal dollars leveraged by EPA water infrastructure finance programs (CWSRF, DWSRF and WIFIA).	*OGWDW; OWM*	*Infrastructure*	*SM-3*	*INFRA-01*
Systems Out of Compliance Due to Lead and Copper Rule Violations.	*OGWDW*	*Drinking Water*		
Strengthen the technical, managerial and financial capacity of drinking water systems.	*OGWDW*	*Drinking Water*		
Engagements with the water infrastructure community.	*OGWDW*	*Infrastructure*		
Water infrastructure financing tools, training, and resources provided.	*OGWDW*	*Infrastructure*		
Drinking Water Sanitary Surveys.	*OGWDW*	*Drinking Water*		
Reviews of State DWSRF program.	*OGWDW*	*Infrastructure*		
State PWSS rule primacy applications in backlog.	*OGWDW*	*Public Water Systems Supervision*		
Class I, II, III, V, VI UIC DI Well Permits in backlog. *(Note: Individual well class measures omitted from table)*	*OGWDW*	*Underground Injection Control*		
Electronic submission of state Integrated Report.	*OWOW*	*Impaired Waters*		
Outstanding State submission of 303(d) lists.	*OWOW*	*Impaired Waters*		
Backlog of EPA action on 303(d) Lists.	*OWOW*	*Impaired Waters*		
Progress in putting priority TMDLs, alternative restoration plans and protection approaches in place.	*OWOW*	*Total Maximum Daily Load*		
Backlog of EPA action on TMDLs.	*OWOW*	*Total Maximum Daily Load*		
Backlog of EPA action on priority TMDLs.	*OWOW*	*Total Maximum Daily Load*		
Applications for new NPDES individual permits older than 6 months.	*OWM*	*National Pollutant Discharge Elimination System*		
Reviews of State CWSRF.	*OWM*	*Infrastructure*		
Requests for Coverage Under General NPDES Permits in backlog.	*OWM*	*National Pollutant Discharge Elimination System*		
Number of WIFIA LOIs received in response to a Notice of Funding Availability.	*OWM*	*Infrastructure*		
Number of LOIs that address lead and other contaminants for drinking water systems.	*OWM*	*Infrastructure*		
Number of LOIs that address aging infrastructure.	*OWM*	*Infrastructure*		

Administratively Continued (backlogged) Individual NPDES Permits.	***OWM***	***National Pollutant Discharge Elimination System***		
Water Quality Standards actions in the backlog.	***OST***	***Water Quality Standards***		
Percent of community water systems (CWSs) that have undergone a sanitary survey within the past three years (five years for outstanding performers or those ground water systems approved by the primacy agency to provide 4-log treatment of viruses).	OGWDW	Drinking Water		DW-02
Number of tribal community water systems (CWSs) that have undergone a sanitary survey within the past three years (five years for outstanding performers or those ground water systems approved to provide 4-log treatment of viruses).	OGWDW	Drinking Water		
Fund utilization rate [cumulative dollar amount of loan agreements divided by cumulative funds available for projects] for the Drinking Water State Revolving Fund (DWSRF).	OGWDW	Drinking Water		INFRA-02
Number of Drinking Water State Revolving Fund (DWSRF) projects that have initiated operations.	OGWDW	Drinking Water		
Percent of Classes I, II and Class III salt solution mining wells that have lost mechanical integrity and are returned to compliance within 180 days thereby reducing the potential to endanger underground sources of drinking water.	OGWDW	Drinking Water		
Number of Class V motor vehicle waste disposal wells (MVWDW) and large capacity cesspools (LCC) that are closed or permitted.	OGWDW	Drinking Water		
Percent of DWSRF projects awarded to small PWS serving <500, 501-3,300, and 3,301-10,000 consumers.	OGWDW	Drinking Water		
Number and percent of small community water systems and NTNCWS (<500, 501-3,300, 3,301-10,000) with repeat health based Nitrate/Nitrite, Stage 1 D/DBP, SWTR and TCR violations.	OGWDW	Drinking Water		
Number and percent of schools and childcare centers that meet all health-based drinking water standards.	OGWDW	Drinking Water		
Percent of 'person months' (i.e. all persons served by community water systems times 12 months) during which community water systems in Indian country provide drinking water that meets all applicable health-based drinking water standards.	OGWDW	Drinking Water		
Number of drinking water and wastewater utilities and local, state, and federal officials receiving training and technical assistance to enhance emergency preparedness and resiliency to reduce risk from all hazards including those attributed to climate change impacts.	OGWDW	Drinking Water		
Percent of the population served by community water systems that receive drinking water that meets all applicable health-based drinking water standards through approaches including effective treatment and source water protection.	OGWDW	Drinking Water		DW-03
Number of American Indian and Alaska Native homes provided access to safe drinking water in coordination with other federal agencies.	OGWDW	Drinking Water		INFRA-04

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Percent of community water systems that meet all applicable health-based standards through approaches that include effective treatment and source water protection.	OGWDW	Drinking Water		
Percent of "person months" (i.e. all persons served by community water systems times 12 months) during which community water systems provide drinking water that meets all applicable health-based drinking water standards.	OGWDW	Drinking Water		
Percent of the population in Indian country served by community water systems that receive drinking water that meets all applicable health-based drinking water standards.	OGWDW	Drinking Water		DW-04
Percent of community water systems where risk to public health is minimized through source water protection.	OGWDW	Drinking Water		
Percent of the population served by community water systems where risk to public health is minimized through source water protection.	OGWDW	Drinking Water		
Number of water and wastewater utilities that have registered to use the Climate Resilience Evaluation and Awareness Tool (CREAT).	OGWDW	Water Quality		
Drinking Water: Percent of State Population Served by Compliant Community Water Systems and Percent of Community Water Systems Meeting All Applicable Health-Based Standards (11 States).	OGWDW	Water Safe to Drink		
Investments in Water Infrastructure: (1) Wastewater and (2) Drinking Water.	OGWDW; OWM	Infrastructure		
Loading of biochemical oxygen demand (BOD) removed (million pounds/year) from the U.S.-Mexico Border area since 2003.	OWM	U.S.-Mexico Border		
Number of additional homes provided safe drinking water in the U.S.-Mexico border area that lacked access to safe drinking water in 2003.	OWM	U.S.-Mexico Border		
Number of additional homes provided adequate wastewater sanitation in the U.S.-Mexico border area that lacked access to wastewater sanitation in 2003.	OWM	U.S.-Mexico Border		
Number and national percent, using a constant denominator, of Combined Sewer Overflow (CSO) permits with a schedule incorporated into an appropriate enforceable mechanism, including a permit or enforcement order, with specific dates and milestones, including a completion date consistent with Agency guidance, which requires: 1) Implementation of a Long-term Control Plan (LTCP) which will result in compliance with the technology and water quality-based requirements of the Clean Water Act; or 2) implementation of any other acceptable CSO control measures consistent with the 1994 CSO Control Policy; or 3) completion of separation after the baseline date.	OWM	Safe for Swimming		
Number, and national percent, of follow-up actions that are completed by assessed NPDES (National Pollutant Discharge Elimination System) programs.	OWM	Water Quality		
Percent of non-tribal facilities covered by NPDES permits that are considered current.	OWM	Water Quality		
Percent of tribal facilities covered by NPDES permits that are considered current.	OWM	Water Quality		
[DRAFT] Backlog of State- and EPA-Issued Individual NPDES Permits.	OWM	National Pollutant Discharge Elimination System		

Number, and national percent, of MS-4s covered under either an individual or general permit.	OWM	Water Quality		
Number of facilities covered under either an individual or general industrial storm water permit.	OWM	Water Quality		
Number of sites covered under either an individual or general construction storm water site permit.	OWM	Water Quality		
Number of facilities covered under either an individual or general CAFO permit.	OWM	Water Quality		
Number, and national percent, of Significant Industrial Users (SIUs) that are discharging to POTWs with Pretreatment Programs that have control mechanisms in place that implement applicable pretreatment standards and requirements.	OWM	Water Quality		
Number, and national percent, of Categorical Industrial Users (CIUs) that are discharging to POTWs without Pretreatment Programs that have control mechanisms in place that implement applicable pretreatment standards and requirements.	OWM	Water Quality		
Fund utilization rate [cumulative loan agreement dollars to the cumulative funds available for projects] for the Clean Water State Revolving Fund (CWSRF).	OWM	Water Quality		INFRA-03
Number and percent of major NPDES wastewater treatment plant permits with nutrient limits.	OWM	Water Quality		
Number and percent of major NPDES wastewater treatment plant permits with nutrient monitoring requirements.	OWM	Water Quality		
Percent of serviceable rural Alaska homes with access to drinking water supply and wastewater disposal.	OWM	Water Quality		
Number of American Indian and Alaska Native homes provided access to basic sanitation in coordination with other federal agencies.	OWM	Water Quality		INFRA-05
Number of WaterSense partners working to improve water use efficiency.	OWM	Water Quality		
Number of CWSRFs/DWSRFs that used financial incentives to promote climate resilience projects in the last year.	OWM	Water Quality		
Number of States that included specific high priority nutrient reduction actions in their PPA/PPG and/or Section 106 grant work plans for FY18.	OWM	Water Quality		
Point Source N&P: Total Pounds of Nitrogen and Phosphorus Discharged from Major NPDES Facilities.	OWM	National Pollutant Discharge Elimination System		
Percent of Major Wastewater Dischargers without Significant Noncompliance (SNC).	OWM	Wastewater		
Total coastal and non-coastal statutory square miles protected from vessel sewage by “no discharge zone(s).”	OWOW	Coastal and Ocean Waters		
Dollar value of “primary” leveraged resources (cash or in-kind) obtained by the NEP Directors and/or staff in millions of dollars rounded to the nearest tenth of a percent.	OWOW	Coastal and Ocean Waters		
Number of active dredged material ocean dumping sites that are monitored in the reporting year.	OWOW	Coastal and Ocean Waters		
Working with partners, protect or restore additional acres of habitat within the study areas for the 28 estuaries that are part of the National Estuary Program (NEP).	OWOW	Coastal and Ocean Waters		

Percent of active dredged material ocean dumping sites that will have achieved environmentally acceptable conditions (as reflected in each site's management plan and measured through on-site monitoring programs).	OWOW	Coastal and Ocean Waters		
Clean up acres of known contaminated sediments.	OWOW	Columbia River Basin		
Demonstrate a reduction in mean concentration of certain contaminants of concern found in water and fish tissue.	OWOW	Columbia River Basin		
Percent of goal achieved in reducing trade-equalized (TE) point source nitrogen discharges to Long Island Sound from the 1999 baseline of 59,146 TE lbs./day.	OWOW	Long Island Sound		
Reduce the size (square miles) of observed hypoxia (Dissolved Oxygen <3mg/l) in Long Island Sound.	OWOW	Long Island Sound		
Restore, protect or enhance acres of coastal habitat from the 2010 baseline of 2,975 acres.	OWOW	Long Island Sound		
Reopen miles of river and stream corridors to diadromous fish passage from the 2010 baseline of 177 river miles by removal of dams and barriers or by installation of bypass structures.	OWOW	Long Island Sound		
Improve water quality and enable the lifting of harvest restrictions in acres of shellfish bed growing areas impacted by degraded or declining water quality. (cumulative starting in FY 06)	OWOW	Puget Sound Basin		
Protect or restore acres or shoreline miles of aquatic habitats including: estuaries, floodplains, marine and freshwater shorelines, riparian areas, stream habitats and associated wetlands. (cumulative starting in FY06)	OWOW	Puget Sound Basin		
Percent increase of sewage treatment facilities and onsite sewage treatment and disposal systems receiving advanced wastewater treatment or best available technology.	OWOW	South Florida Ecosystem		
The number of Everglades Stormwater Treatment Areas (STAs) with the annual total phosphorus (TP) outflow less than or the same as the five-year annual average TP outflow, working towards the long-term goal of meeting the 10 parts per billion annual geometric mean.	OWOW	South Florida Ecosystem		
Achieve 'no net loss' of stony coral cover (mean percent stony coral cover) in the Florida Keys National Marine Sanctuary (FKNMS) and in the coastal waters of Dade, Broward, and Palm Beach Counties, Florida (SE FL), working with all stakeholders (federal, state, regional, tribal, and local).	OWOW	South Florida Ecosystem		
Annually maintain the overall health and functionality of sea grass beds in the FKNMS as measured by the long-term sea grass monitoring project that addresses composition and abundance, productivity, and nutrient availability.	OWOW	South Florida Ecosystem		
At least seventy five percent of the monitored stations in the near shore and coastal waters of the Florida Keys National Marine Sanctuary will maintain Chlorophyll a (CHLA) levels at less than or equal to 0.35 ug l-1 and light clarity (Kd)) levels at less than or equal to 0.20 m-1.	OWOW	South Florida Ecosystem		

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At least seventy five percent of the monitored stations in the near shore and coastal waters of the Florida Keys National Marine Sanctuary will maintain dissolved inorganic nitrogen (DIN) levels at less than or equal to 0.75 uM and total phosphorus (TP) levels at less than or equal to .25 uM .	OWOW	South Florida Ecosystem		
Number of tribes that currently receive funding under Section 106 of the Clean Water Act that have developed and begun implementing monitoring strategies that are appropriate to their water quality program consistent with EPA Guidance.	OWOW	Water Quality		
Estimated annual reduction in million pounds of nitrogen from nonpoint sources to waterbodies (Section 319 funded projects only).	OWOW	Water Quality		
Estimated annual reduction in million pounds of phosphorus from nonpoint sources to waterbodies (Section 319 funded projects only).	OWOW	Water Quality		
Estimated annual reduction in million tons of sediment from nonpoint sources to waterbodies (Section 319 funded projects only).	OWOW	Water Quality		
Number of waterbodies identified by states (in 1998/2000 or subsequent years) as being primarily nonpoint source (NPS)-impaired that are partially or fully restored.	OWOW	Water Quality		
Number of urban water projects initiated addressing water quality issues in the community.	OWOW	Water Quality		
Number of urban water projects completed addressing water quality issues in the community.	OWOW	Water Quality		
Extent of priority areas identified by each state that are addressed by EPA-approved TMDLs or alternative restoration approaches for impaired waters that will achieve water quality standards. These areas may also include protection approaches for unimpaired waters to maintain water quality standards.	OWOW	Water Quality		
State-wide extent of activities leading to completed TMDLs or alternative restoration approaches for impaired waters, or protection approaches for unimpaired waters.	OWOW	Water Quality		
Number of states protecting or improving water quality conditions, as demonstrated by state-scale statistical surveys: On average, water quality is improving or at least not degrading (there is no statistically significant decrease in mean water quality); The percentage of waters in good condition is increasing or remaining constant; and, The percentage of waters in poor condition is decreasing or remaining constant.	OWOW	Water Quality		
Report on the quality of the nation's waters.	OWOW	Water Quality		
Improve water quality in Indian country at baseline monitoring stations in tribal waters (i.e., show improvement in one or more of seven key parameters: dissolved oxygen, pH, water temperature, total nitrogen, total phosphorus, pathogen indicators, and turbidity).	OWOW	Water Quality		
Identify monitoring stations on tribal lands that are showing no degradation in water quality (meaning the waters are meeting tribal water quality objectives).	OWOW	Water Quality		
Number of acres restored and improved, under the 5-Star, NEP, 319, and great waterbody programs.	OWOW	Wetlands		

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Percent of Clean Water Act Section 404 standard permits, upon which EPA coordinated with the permitting authority (i.e., Corps or State), where a final permit decision in FY 08 documents requirements for greater environmental protection than originally proposed.	OWOW	Wetlands		
Number of Actions completed by states, tribes, and territories to build programs in four areas of wetland management: regulatory, monitoring and assessment, water quality standards, and restoration and protection.	OWOW	Wetlands		
In partnership with the U.S. Army Corps of Engineers, states and tribes, achieve 'no net loss' of wetlands each year under the Clean Water Act Section 404 regulatory program.	OWOW	Wetlands		
Percent Water Bodies Monitored and Waters Meeting Designated Uses: Miles of rivers and streams assessed and associated condition (8 States).	OWOW	Surface Water Protection		
Nonpoint Source N&P: Estimated Annual Reduction in Pounds of Nitrogen and Phosphorus, and in Tons of Sediment from Nonpoint Sources to Waterbodies (Section 319 funded projects only).	OWOW	Nonpoint Source		
Square miles associated with state priority waters addressed by a TMDL, other restoration plan, or protection approach.	OWOW	Water Quality		TMDL-01
Watersheds with surface waters not meeting standards because of nutrients (square miles).	OWOW	Water Quality		
Percent of women of childbearing age having mercury levels in blood above the level of concern.	OST	Fish and Shellfish		
Percent of all Tier I (significant) public beaches that are monitored and managed under the BEACH Act program.	OST	Safe for Swimming		
Percent of days of the beach season that coastal and Great Lakes beaches monitored by state beach safety programs are open and safe for swimming.	OST	Safe for Swimming		
Number of numeric water quality standards adopted for total nitrogen or total phosphorus for all waters within the State or Territory for each of the following waterbody types: lakes/reservoirs, rivers/streams, and estuaries.	OST	Water Quality		
Number of numeric water quality standards planned to be adopted within 3 years for total nitrogen and total phosphorus for all waters within the state or territory for each of the following waterbody types: lakes/reservoirs, rivers/streams, and estuaries, based on a full set of performance milestone information supplied annually by states and territories.	OST	Water Quality		
Number of tribes that have water quality standards approved by EPA.	OST	Water Quality		
Number, and national percent, of states and territories that within the preceding three year period, submitted new or revised water quality criteria acceptable to EPA that reflect new scientific information from EPA or other resources not considered in the previous standards.	OST	Water Quality		
Number, and national percent of tribes that within the preceding three year period, submitted new or revised water quality criteria acceptable to EPA that reflect new scientific information from EPA or other resources not considered in the previous standards.	OST	Water Quality		

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Percentage of submissions of new or revised water quality standards from states and territories that are approved by EPA.	OST	Water Quality		
Number of states and tribes completing triennial reviews on time.	OST	Water Quality Standards		
Number of states and territories with a methodology for notifying the public of when a harmful algal bloom is present.	OST	Surface Water Protection		
Decrease the number of waterbodies impaired by total nitrogen and total phosphorus within the continental United States and territories	OST	Nonpoint Source		
Number of water and wastewater utilities that use the EnergyStar Portfolio Manager to manage energy.	OW	Water Quality		
Percent attainment of water quality standards for dissolved oxygen, water clarity/underwater grasses, and chlorophyll a in Chesapeake Bay and tidal tributaries.	CBPO	Chesapeake Bay		
Percent of goal achieved for implementing nitrogen pollution reduction actions to achieve the final TMDL allocations, as measured through the phase 5.3 watershed model.	CBPO	Chesapeake Bay		
Percent of goal achieved for implementing phosphorus pollution reduction actions to achieve the final TMDL allocations, as measured through the phase 5.3 watershed model.	CBPO	Chesapeake Bay		
Percent of goal achieved for implementing sediment pollution reduction actions to achieve final TMDL allocations, as measured through the phase 5.3 watershed model.	CBPO	Chesapeake Bay		
Number of Beneficial Use Impairments removed within Areas of Concern.	GLNPO	Great Lakes		
Number of multi-agency rapid response plans established, mock exercises to practice responses carried out under those plans, and/or actual response actions.	GLNPO	Great Lakes		
Acres managed for populations of invasive species controlled to a target level.	GLNPO	Great Lakes		
Projected phosphorus reductions from GLRI-funded projects in targeted watersheds.	GLNPO	Great Lakes		
Projected volume of untreated urban runoff captured or treated by GLRI-funded projects.	GLNPO	Great Lakes		
Number of miles of Great Lakes tributaries reopened by GLRI-funded projects.	GLNPO	Great Lakes		
Number of miles of Great Lakes shoreline and riparian corridors protected, restored, and enhanced by GLRI-funded projects.	GLNPO	Great Lakes		
Number of acres of Great Lakes coastal wetlands protected, restored, and enhanced by GLRI-funded projects.	GLNPO	Great Lakes		
Number of acres of other habitats in the Great Lakes basin protected, restored, and enhanced by GLRI-funded projects.	GLNPO	Great Lakes		
Number of Areas of Concern in the Great Lakes where all management actions necessary for delisting have been implemented.	GLNPO	Great Lakes		
Improve and/or restore water and habitat quality to meet water quality standards in watersheds throughout the five Gulf States and the Mississippi River Basin.	GMPO	Gulf of Mexico		
Promote and support environmental education and outreach to the inhabitants of the Gulf of Mexico watershed.	GMPO	Gulf of Mexico		

Support the assessment, development and implementation of programs, projects and tools which strengthen community resilience.	GMPO	Gulf of Mexico		
Protect, enhance, or restore coastal and upland habitats within the Gulf of Mexico watershed.	GMPO	Gulf of Mexico		
Percent of population in the U.S. Pacific Island Territories served by community water systems that has access to continuous drinking water meeting all applicable health-based drinking water standards, measured on a four quarter rolling average basis.	R9	Pacific Island Territories		

FY 2018-2019 NPM Guidance	ECOS Common Measures	Comments
WQ-35		

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SDW-01a		
SDW-01b		
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National Water Program Measures Review

Strategic Measures and Mission Measures (1-25, ***italicized, greyed, and bolded)*** will be retained.

• Office of Ground Water and Drinking Water (OGWDW)• Office of Science and Technology (OST)• Office of Wastewater Management (OWM)• Office of Wetlands, Oceans and Watersheds (OW

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Description	Reporting Office	Program	FY 2018-2022 Strategic Plan	FY 2019 Annual Performance Plan (Budget)
Watersheds with surface waters not meeting standards.	*OWOW*	*Water Quality*	*SM-4*	*SWP-01*
Number of Community Water Systems out of compliance with Health Based Standards.	*OGWDW*	*Drinking Water*	*SM-2*	*DW-01*
Number of non-federal dollars leveraged by EPA water infrastructure finance programs (CWSRF, DWSRF and WIFIA).	*OGWDW; OWM*	*Infrastructure*	*SM-3*	*INFRA-01*
Systems Out of Compliance Due to Lead and Copper Rule Violations.	*OGWDW*	*Drinking Water*		
Strengthen the technical, managerial and financial capacity of drinking water systems.	*OGWDW*	*Drinking Water*		
Engagements with the water infrastructure community.	*OGWDW*	*Infrastructure*		
Water infrastructure financing tools, training, and resources provided.	*OGWDW*	*Infrastructure*		
Drinking Water Sanitary Surveys.	*OGWDW*	*Drinking Water*		
Reviews of State DWSRF program.	*OGWDW*	*Infrastructure*		
State PWSS rule primacy applications in backlog.	*OGWDW*	*Public Water Systems Supervision*		
Class I, II, III, V, VI UIC DI Well Permits in backlog. *(Note: Individual well class measures omitted from table)*	*OGWDW*	*Underground Injection Control*		
Electronic submission of state Integrated Report.	*OWOW*	*Impaired Waters*		
Outstanding State submission of 303(d) lists.	*OWOW*	*Impaired Waters*		
Backlog of EPA action on 303(d) Lists.	*OWOW*	*Impaired Waters*		
Progress in putting priority TMDLs, alternative restoration plans and protection approaches in place.	*OWOW*	*Total Maximum Daily Load*		
Backlog of EPA action on TMDLs.	*OWOW*	*Total Maximum Daily Load*		
Backlog of EPA action on priority TMDLs.	*OWOW*	*Total Maximum Daily Load*		
Applications for new NPDES individual permits older than 6 months.	*OWM*	*National Pollutant Discharge Elimination System*		
Reviews of State CWSRF.	*OWM*	*Infrastructure*		
Requests for Coverage Under General NPDES Permits in backlog.	*OWM*	*National Pollutant Discharge Elimination System*		
Number of WIFIA LOIs received in response to a Notice of Funding Availability.	*OWM*	*Infrastructure*		
Number of LOIs that address lead and other contaminants for drinking water systems.	*OWM*	*Infrastructure*		
Number of LOIs that address aging infrastructure.	*OWM*	*Infrastructure*		

Administratively Continued (backlogged) Individual NPDES Permits.	***OWM***	***National Pollutant Discharge Elimination System***		
Water Quality Standards actions in the backlog.	***OST***	***Water Quality Standards***		
Percent of community water systems (CWSs) that have undergone a sanitary survey within the past three years (five years for outstanding performers or those ground water systems approved by the primacy agency to provide 4-log treatment of viruses).	OGWDW	Drinking Water		DW-02
Number of tribal community water systems (CWSs) that have undergone a sanitary survey within the past three years (five years for outstanding performers or those ground water systems approved to provide 4-log treatment of viruses).	OGWDW	Drinking Water		
Fund utilization rate [cumulative dollar amount of loan agreements divided by cumulative funds available for projects] for the Drinking Water State Revolving Fund (DWSRF).	OGWDW	Drinking Water		INFRA-02
Number of Drinking Water State Revolving Fund (DWSRF) projects that have initiated operations.	OGWDW	Drinking Water		
Percent of Classes I, II and Class III salt solution mining wells that have lost mechanical integrity and are returned to compliance within 180 days thereby reducing the potential to endanger underground sources of drinking water.	OGWDW	Drinking Water		
Number of Class V motor vehicle waste disposal wells (MVWDW) and large capacity cesspools (LCC) that are closed or permitted.	OGWDW	Drinking Water		
Percent of DWSRF projects awarded to small PWS serving <500, 501-3,300, and 3,301-10,000 consumers.	OGWDW	Drinking Water		
Number and percent of small community water systems and NTNCWS (<500, 501-3,300, 3,301-10,000) with repeat health based Nitrate/Nitrite, Stage 1 D/DBP, SWTR and TCR violations.	OGWDW	Drinking Water		
Number and percent of schools and childcare centers that meet all health-based drinking water standards.	OGWDW	Drinking Water		
Percent of 'person months' (i.e. all persons served by community water systems times 12 months) during which community water systems in Indian country provide drinking water that meets all applicable health-based drinking water standards.	OGWDW	Drinking Water		
Number of drinking water and wastewater utilities and local, state, and federal officials receiving training and technical assistance to enhance emergency preparedness and resiliency to reduce risk from all hazards including those attributed to climate change impacts.	OGWDW	Drinking Water		
Percent of the population served by community water systems that receive drinking water that meets all applicable health-based drinking water standards through approaches including effective treatment and source water protection.	OGWDW	Drinking Water		DW-03
Number of American Indian and Alaska Native homes provided access to safe drinking water in coordination with other federal agencies.	OGWDW	Drinking Water		INFRA-04

Percent of community water systems that meet all applicable health-based standards through approaches that include effective treatment and source water protection.	OGWDW	Drinking Water		
Percent of "person months" (i.e. all persons served by community water systems times 12 months) during which community water systems provide drinking water that meets all applicable health-based drinking water standards.	OGWDW	Drinking Water		
Percent of the population in Indian country served by community water systems that receive drinking water that meets all applicable health-based drinking water standards.	OGWDW	Drinking Water		DW-04
Percent of community water systems where risk to public health is minimized through source water protection.	OGWDW	Drinking Water		
Percent of the population served by community water systems where risk to public health is minimized through source water protection.	OGWDW	Drinking Water		
Number of water and wastewater utilities that have registered to use the Climate Resilience Evaluation and Awareness Tool (CREAT).	OGWDW	Water Quality		
Drinking Water: Percent of State Population Served by Compliant Community Water Systems and Percent of Community Water Systems Meeting All Applicable Health-Based Standards (11 States).	OGWDW	Water Safe to Drink		
Investments in Water Infrastructure: (1) Wastewater and (2) Drinking Water.	OGWDW; OWM	Infrastructure		
Loading of biochemical oxygen demand (BOD) removed (million pounds/year) from the U.S.-Mexico Border area since 2003.	OWM	U.S.-Mexico Border		
Number of additional homes provided safe drinking water in the U.S.-Mexico border area that lacked access to safe drinking water in 2003.	OWM	U.S.-Mexico Border		
Number of additional homes provided adequate wastewater sanitation in the U.S.-Mexico border area that lacked access to wastewater sanitation in 2003.	OWM	U.S.-Mexico Border		
Number and national percent, using a constant denominator, of Combined Sewer Overflow (CSO) permits with a schedule incorporated into an appropriate enforceable mechanism, including a permit or enforcement order, with specific dates and milestones, including a completion date consistent with Agency guidance, which requires: 1) Implementation of a Long-term Control Plan (LTCP) which will result in compliance with the technology and water quality-based requirements of the Clean Water Act; or 2) implementation of any other acceptable CSO control measures consistent with the 1994 CSO Control Policy; or 3) completion of separation after the baseline date.	OWM	Safe for Swimming		
Number, and national percent, of follow-up actions that are completed by assessed NPDES (National Pollutant Discharge Elimination System) programs.	OWM	Water Quality		
Percent of non-tribal facilities covered by NPDES permits that are considered current.	OWM	Water Quality		
Percent of tribal facilities covered by NPDES permits that are considered current.	OWM	Water Quality		
[DRAFT] Backlog of State- and EPA-Issued Individual NPDES Permits.	OWM	National Pollutant Discharge Elimination System		

Number, and national percent, of MS-4s covered under either an individual or general permit.	OWM	Water Quality		
Number of facilities covered under either an individual or general industrial storm water permit.	OWM	Water Quality		
Number of sites covered under either an individual or general construction storm water site permit.	OWM	Water Quality		
Number of facilities covered under either an individual or general CAFO permit.	OWM	Water Quality		
Number, and national percent, of Significant Industrial Users (SIUs) that are discharging to POTWs with Pretreatment Programs that have control mechanisms in place that implement applicable pretreatment standards and requirements.	OWM	Water Quality		
Number, and national percent, of Categorical Industrial Users (CIUs) that are discharging to POTWs without Pretreatment Programs that have control mechanisms in place that implement applicable pretreatment standards and requirements.	OWM	Water Quality		
Fund utilization rate [cumulative loan agreement dollars to the cumulative funds available for projects] for the Clean Water State Revolving Fund (CWSRF).	OWM	Water Quality		INFRA-03
Number and percent of major NPDES wastewater treatment plant permits with nutrient limits.	OWM	Water Quality		
Number and percent of major NPDES wastewater treatment plant permits with nutrient monitoring requirements.	OWM	Water Quality		
Percent of serviceable rural Alaska homes with access to drinking water supply and wastewater disposal.	OWM	Water Quality		
Number of American Indian and Alaska Native homes provided access to basic sanitation in coordination with other federal agencies.	OWM	Water Quality		INFRA-05
Number of WaterSense partners working to improve water use efficiency.	OWM	Water Quality		
Number of CWSRFs/DWSRFs that used financial incentives to promote climate resilience projects in the last year.	OWM	Water Quality		
Number of States that included specific high priority nutrient reduction actions in their PPA/PPG and/or Section 106 grant work plans for FY18.	OWM	Water Quality		
Point Source N&P: Total Pounds of Nitrogen and Phosphorus Discharged from Major NPDES Facilities.	OWM	National Pollutant Discharge Elimination System		
Percent of Major Wastewater Dischargers without Significant Noncompliance (SNC).	OWM	Wastewater		
Total coastal and non-coastal statutory square miles protected from vessel sewage by “no discharge zone(s).”	OWOW	Coastal and Ocean Waters		
Dollar value of “primary” leveraged resources (cash or in-kind) obtained by the NEP Directors and/or staff in millions of dollars rounded to the nearest tenth of a percent.	OWOW	Coastal and Ocean Waters		
Number of active dredged material ocean dumping sites that are monitored in the reporting year.	OWOW	Coastal and Ocean Waters		
Working with partners, protect or restore additional acres of habitat within the study areas for the 28 estuaries that are part of the National Estuary Program (NEP).	OWOW	Coastal and Ocean Waters		

Percent of active dredged material ocean dumping sites that will have achieved environmentally acceptable conditions (as reflected in each site's management plan and measured through on-site monitoring programs).	OWOW	Coastal and Ocean Waters		
Clean up acres of known contaminated sediments.	OWOW	Columbia River Basin		
Demonstrate a reduction in mean concentration of certain contaminants of concern found in water and fish tissue.	OWOW	Columbia River Basin		
Percent of goal achieved in reducing trade-equalized (TE) point source nitrogen discharges to Long Island Sound from the 1999 baseline of 59,146 TE lbs./day.	OWOW	Long Island Sound		
Reduce the size (square miles) of observed hypoxia (Dissolved Oxygen <3mg/l) in Long Island Sound.	OWOW	Long Island Sound		
Restore, protect or enhance acres of coastal habitat from the 2010 baseline of 2,975 acres.	OWOW	Long Island Sound		
Reopen miles of river and stream corridors to diadromous fish passage from the 2010 baseline of 177 river miles by removal of dams and barriers or by installation of bypass structures.	OWOW	Long Island Sound		
Improve water quality and enable the lifting of harvest restrictions in acres of shellfish bed growing areas impacted by degraded or declining water quality. (cumulative starting in FY 06)	OWOW	Puget Sound Basin		
Protect or restore acres or shoreline miles of aquatic habitats including: estuaries, floodplains, marine and freshwater shorelines, riparian areas, stream habitats and associated wetlands. (cumulative starting in FY06)	OWOW	Puget Sound Basin		
Percent increase of sewage treatment facilities and onsite sewage treatment and disposal systems receiving advanced wastewater treatment or best available technology.	OWOW	South Florida Ecosystem		
The number of Everglades Stormwater Treatment Areas (STAs) with the annual total phosphorus (TP) outflow less than or the same as the five-year annual average TP outflow, working towards the long-term goal of meeting the 10 parts per billion annual geometric mean.	OWOW	South Florida Ecosystem		
Achieve 'no net loss' of stony coral cover (mean percent stony coral cover) in the Florida Keys National Marine Sanctuary (FKNMS) and in the coastal waters of Dade, Broward, and Palm Beach Counties, Florida (SE FL), working with all stakeholders (federal, state, regional, tribal, and local).	OWOW	South Florida Ecosystem		
Annually maintain the overall health and functionality of sea grass beds in the FKNMS as measured by the long-term sea grass monitoring project that addresses composition and abundance, productivity, and nutrient availability.	OWOW	South Florida Ecosystem		
At least seventy five percent of the monitored stations in the near shore and coastal waters of the Florida Keys National Marine Sanctuary will maintain Chlorophyll a (CHLA) levels at less than or equal to 0.35 ug l-1 and light clarity (Kd)) levels at less than or equal to 0.20 m-1.	OWOW	South Florida Ecosystem		

At least seventy five percent of the monitored stations in the near shore and coastal waters of the Florida Keys National Marine Sanctuary will maintain dissolved inorganic nitrogen (DIN) levels at less than or equal to 0.75 uM and total phosphorus (TP) levels at less than or equal to .25 uM .	OWOW	South Florida Ecosystem		
Number of tribes that currently receive funding under Section 106 of the Clean Water Act that have developed and begun implementing monitoring strategies that are appropriate to their water quality program consistent with EPA Guidance.	OWOW	Water Quality		
Estimated annual reduction in million pounds of nitrogen from nonpoint sources to waterbodies (Section 319 funded projects only).	OWOW	Water Quality		
Estimated annual reduction in million pounds of phosphorus from nonpoint sources to waterbodies (Section 319 funded projects only).	OWOW	Water Quality		
Estimated annual reduction in million tons of sediment from nonpoint sources to waterbodies (Section 319 funded projects only).	OWOW	Water Quality		
Number of waterbodies identified by states (in 1998/2000 or subsequent years) as being primarily nonpoint source (NPS)-impaired that are partially or fully restored.	OWOW	Water Quality		
Number of urban water projects initiated addressing water quality issues in the community.	OWOW	Water Quality		
Number of urban water projects completed addressing water quality issues in the community.	OWOW	Water Quality		
Extent of priority areas identified by each state that are addressed by EPA-approved TMDLs or alternative restoration approaches for impaired waters that will achieve water quality standards. These areas may also include protection approaches for unimpaired waters to maintain water quality standards.	OWOW	Water Quality		
State-wide extent of activities leading to completed TMDLs or alternative restoration approaches for impaired waters, or protection approaches for unimpaired waters.	OWOW	Water Quality		
Number of states protecting or improving water quality conditions, as demonstrated by state-scale statistical surveys: On average, water quality is improving or at least not degrading (there is no statistically significant decrease in mean water quality); The percentage of waters in good condition is increasing or remaining constant; and, The percentage of waters in poor condition is decreasing or remaining constant.	OWOW	Water Quality		
Report on the quality of the nation's waters.	OWOW	Water Quality		
Improve water quality in Indian country at baseline monitoring stations in tribal waters (i.e., show improvement in one or more of seven key parameters: dissolved oxygen, pH, water temperature, total nitrogen, total phosphorus, pathogen indicators, and turbidity).	OWOW	Water Quality		
Identify monitoring stations on tribal lands that are showing no degradation in water quality (meaning the waters are meeting tribal water quality objectives).	OWOW	Water Quality		
Number of acres restored and improved, under the 5-Star, NEP, 319, and great waterbody programs.	OWOW	Wetlands		

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Percent of Clean Water Act Section 404 standard permits, upon which EPA coordinated with the permitting authority (i.e., Corps or State), where a final permit decision in FY 08 documents requirements for greater environmental protection than originally proposed.	OWOW	Wetlands		
Number of Actions completed by states, tribes, and territories to build programs in four areas of wetland management: regulatory, monitoring and assessment, water quality standards, and restoration and protection.	OWOW	Wetlands		
In partnership with the U.S. Army Corps of Engineers, states and tribes, achieve 'no net loss' of wetlands each year under the Clean Water Act Section 404 regulatory program.	OWOW	Wetlands		
Percent Water Bodies Monitored and Waters Meeting Designated Uses: Miles of rivers and streams assessed and associated condition (8 States).	OWOW	Surface Water Protection		
Nonpoint Source N&P: Estimated Annual Reduction in Pounds of Nitrogen and Phosphorus, and in Tons of Sediment from Nonpoint Sources to Waterbodies (Section 319 funded projects only).	OWOW	Nonpoint Source		
Square miles associated with state priority waters addressed by a TMDL, other restoration plan, or protection approach.	OWOW	Water Quality		TMDL-01
Watersheds with surface waters not meeting standards because of nutrients (square miles).	OWOW	Water Quality		
Percent of women of childbearing age having mercury levels in blood above the level of concern.	OST	Fish and Shellfish		
Percent of all Tier I (significant) public beaches that are monitored and managed under the BEACH Act program.	OST	Safe for Swimming		
Percent of days of the beach season that coastal and Great Lakes beaches monitored by state beach safety programs are open and safe for swimming.	OST	Safe for Swimming		
Number of numeric water quality standards adopted for total nitrogen or total phosphorus for all waters within the State or Territory for each of the following waterbody types: lakes/reservoirs, rivers/streams, and estuaries.	OST	Water Quality		
Number of numeric water quality standards planned to be adopted within 3 years for total nitrogen and total phosphorus for all waters within the state or territory for each of the following waterbody types: lakes/reservoirs, rivers/streams, and estuaries, based on a full set of performance milestone information supplied annually by states and territories.	OST	Water Quality		
Number of tribes that have water quality standards approved by EPA.	OST	Water Quality		
Number, and national percent, of states and territories that within the preceding three year period, submitted new or revised water quality criteria acceptable to EPA that reflect new scientific information from EPA or other resources not considered in the previous standards.	OST	Water Quality		
Number, and national percent of tribes that within the preceding three year period, submitted new or revised water quality criteria acceptable to EPA that reflect new scientific information from EPA or other resources not considered in the previous standards.	OST	Water Quality		

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Percentage of submissions of new or revised water quality standards from states and territories that are approved by EPA.	OST	Water Quality		
Number of states and tribes completing triennial reviews on time.	OST	Water Quality Standards		
Number of states and territories with a methodology for notifying the public of when a harmful algal bloom is present.	OST	Surface Water Protection		
Decrease the number of waterbodies impaired by total nitrogen and total phosphorus within the continental United States and territories	OST	Nonpoint Source		
Number of water and wastewater utilities that use the EnergyStar Portfolio Manager to manage energy.	OW	Water Quality		
Percent attainment of water quality standards for dissolved oxygen, water clarity/underwater grasses, and chlorophyll a in Chesapeake Bay and tidal tributaries.	CBPO	Chesapeake Bay		
Percent of goal achieved for implementing nitrogen pollution reduction actions to achieve the final TMDL allocations, as measured through the phase 5.3 watershed model.	CBPO	Chesapeake Bay		
Percent of goal achieved for implementing phosphorus pollution reduction actions to achieve the final TMDL allocations, as measured through the phase 5.3 watershed model.	CBPO	Chesapeake Bay		
Percent of goal achieved for implementing sediment pollution reduction actions to achieve final TMDL allocations, as measured through the phase 5.3 watershed model.	CBPO	Chesapeake Bay		
Number of Beneficial Use Impairments removed within Areas of Concern.	GLNPO	Great Lakes		
Number of multi-agency rapid response plans established, mock exercises to practice responses carried out under those plans, and/or actual response actions.	GLNPO	Great Lakes		
Acres managed for populations of invasive species controlled to a target level.	GLNPO	Great Lakes		
Projected phosphorus reductions from GLRI-funded projects in targeted watersheds.	GLNPO	Great Lakes		
Projected volume of untreated urban runoff captured or treated by GLRI-funded projects.	GLNPO	Great Lakes		
Number of miles of Great Lakes tributaries reopened by GLRI-funded projects.	GLNPO	Great Lakes		
Number of miles of Great Lakes shoreline and riparian corridors protected, restored, and enhanced by GLRI-funded projects.	GLNPO	Great Lakes		
Number of acres of Great Lakes coastal wetlands protected, restored, and enhanced by GLRI-funded projects.	GLNPO	Great Lakes		
Number of acres of other habitats in the Great Lakes basin protected, restored, and enhanced by GLRI-funded projects.	GLNPO	Great Lakes		
Number of Areas of Concern in the Great Lakes where all management actions necessary for delisting have been implemented.	GLNPO	Great Lakes		
Improve and/or restore water and habitat quality to meet water quality standards in watersheds throughout the five Gulf States and the Mississippi River Basin.	GMPO	Gulf of Mexico		
Promote and support environmental education and outreach to the inhabitants of the Gulf of Mexico watershed.	GMPO	Gulf of Mexico		

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Support the assessment, development and implementation of programs, projects and tools which strengthen community resilience.	GMPO	Gulf of Mexico		
Protect, enhance, or restore coastal and upland habitats within the Gulf of Mexico watershed.	GMPO	Gulf of Mexico		
Percent of population in the U.S. Pacific Island Territories served by community water systems that has access to continuous drinking water meeting all applicable health-based drinking water standards, measured on a four quarter rolling average basis.	R9	Pacific Island Territories		

FY 2018-2019 NPM Guidance	ECOS Common Measures	Comments
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PI-SP26		

JOHN R. KASICH
GOVERNOR
STATE OF OHIO

Executive Order 2018-09K

Taking Steps to Protect Lake Erie

WHEREAS, The Ohio Environmental Protection Agency ("OEPA") designated the open waters of the Western Basin of Lake Erie as Impaired in the 2018 Ohio Integrated Water Quality Monitoring and Assessment Report" pursuant to Section 303(d) of the Federal Water Pollution Control Act; and

WHEREAS, the Great Lakes Water Quality Agreement (GLWQA) Annex 4 has established the Total Phosphorus (TP) target load for the Maumee River at Waterville to be 860 metric tons (MT); and

WHEREAS, the 2017 Watershed Monitoring Report based on monitoring data provided by USGS indicates a Maumee River 2017 Total Phosphorus load of 1800 MT or 113% above the Annex 4 target, exceeding the Annex 4 target three of the last four years; and

WHEREAS, the OEPA through water quality monitoring data has identified specific watersheds within the Maumee River Basin which exceed by two to three times the Annex 4 TP target; and

WHEREAS, the State of Ohio recognizes that a "nutrient is a nutrient" regardless of source and has adopted the Ohio Domestic Action Plan required by the GLWQA as the implementation plan for meeting the Annex 4 nutrient reduction goals, recommends a combination of voluntary, incentive and regulatory actions will be necessary to achieve the Annex 4 goals; and

WHEREAS, the Director of the Ohio Department of Agriculture ("ODA") is empowered by Section 939.02 of the Revised Code to adopt administrative rules that establish technically feasible and economically reasonably standards to achieve a level of management and conservation practices in farming operations that will abate wind or water erosion of the soil and abate the degradation of the waters of the state by residual farm products, manure, or soil sediment, including attached substances, and establish criteria for determination of the acceptability of such management and conservation practices; and

WHEREAS, to implement the standards necessary to achieve the management and conservation practices established above, the Director of ODA is authorized pursuant to Section 901:13-1-20 of the Ohio Administrative Code ("OAC") to designate a watershed in distress, though such designation must be consented to by the Ohio Soil and Water Conservation Commission ("the Commission"); and

WHEREAS, in so designating a watershed in distress, the Director of ODA can "set requirements for the storage, handling and land application of manure; and/or the control of the erosion of sediment and substances attached thereto; and associated nutrient management plans for land and operations within the designated watershed boundaries[.]"

NOW THEREFORE, I, John R. Kasich, Governor of the State of Ohio, by virtue of the authority vested in me by the Constitution and laws of the State of Ohio, do hereby order and direct that:

1. The Director of ODA consider whether it is appropriate to seek the consent of the Ohio Soil and Water Conservation Commission to designate the following Hydrologic Unit Code (HUC) watersheds or portions of watersheds in the Maumee River Basin as watersheds in distress due to increased nutrient levels resulting from phosphorus attached to soil sediment:

    a. Platter Creek Watershed (HUC 041000050206);
    b. Little Flat Rock Creek Watershed (HUC 041000071207);
    c. Little Auglaize River Watershed (HUC 0410000706-707-708);
    d. Eagle Creek Watershed (HUC 041000080301-02);
    e. Auglaize River (HUC 04100007);
    f. Blanchard River (HUC 04100008);
    g. St. Mary's (HUC 04100004);
    h. Ottawa River (HUC 0410000703-704-705).

2. If the Ohio Soil and Water Conservation Commission consents to the designations contemplated above, ODA, the Ohio Department of Natural Resources ("ODNR"), and OEPA should recommend a rule package that establishes the following for watersheds so designated due to increased nutrient levels resulting from phosphorus attached to soil sediment:

    a. Nutrient management requirements for all nutrient sources;
    b. Development of associated management plans for agricultural land and operations within the designated watershed boundaries;
    c. Requirements for the storage, handling, land application, and control of residual farm products, manure and erosion of sediment and substances attached thereto within the designated watershed boundaries.

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I signed this order on _____, 2018, in Columbus, Ohio and it will not expire unless it is rescinded.

_____
John R. Kasich, Governor

ATTEST:

_____
Jon Husted, Secretary of State

ED_002091_00005524-00003

National Water Program Measures Review

Strategic Measures and Mission Measures (1-25, ***italicized, greyed, and bolded)*** will be retained.

• Office of Ground Water and Drinking Water (OGWDW)• Office of Science and Technology (OST)• Office of Wastewater Management (OWM)• Office of Wetlands, Oceans and Watersheds (OW

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Description	Reporting Office	Program	FY 2018-2022 Strategic Plan	FY 2019 Annual Performance Plan (Budget)
Watersheds with surface waters not meeting standards.	*OWOW*	*Water Quality*	*SM-4*	*SWP-01*
Number of Community Water Systems out of compliance with Health Based Standards.	*OGWDW*	*Drinking Water*	*SM-2*	*DW-01*
Number of non-federal dollars leveraged by EPA water infrastructure finance programs (CWSRF, DWSRF and WIFIA).	*OGWDW; OWM*	*Infrastructure*	*SM-3*	*INFRA-01*
Systems Out of Compliance Due to Lead and Copper Rule Violations.	*OGWDW*	*Drinking Water*		
Strengthen the technical, managerial and financial capacity of drinking water systems.	*OGWDW*	*Drinking Water*		
Engagements with the water infrastructure community.	*OGWDW*	*Infrastructure*		
Water infrastructure financing tools, training, and resources provided.	*OGWDW*	*Infrastructure*		
Drinking Water Sanitary Surveys.	*OGWDW*	*Drinking Water*		
Reviews of State DWSRF program.	*OGWDW*	*Infrastructure*		
State PWSS rule primacy applications in backlog.	*OGWDW*	*Public Water Systems Supervision*		
Class I, II, III, V, VI UIC DI Well Permits in backlog. *(Note: Individual well class measures omitted from table)*	*OGWDW*	*Underground Injection Control*		
Electronic submission of state Integrated Report.	*OWOW*	*Impaired Waters*		
Outstanding State submission of 303(d) lists.	*OWOW*	*Impaired Waters*		
Backlog of EPA action on 303(d) Lists.	*OWOW*	*Impaired Waters*		
Progress in putting priority TMDLs, alternative restoration plans and protection approaches in place.	*OWOW*	*Total Maximum Daily Load*		
Backlog of EPA action on TMDLs.	*OWOW*	*Total Maximum Daily Load*		
Backlog of EPA action on priority TMDLs.	*OWOW*	*Total Maximum Daily Load*		
Applications for new NPDES individual permits older than 6 months.	*OWM*	*National Pollutant Discharge Elimination System*		
Reviews of State CWSRF.	*OWM*	*Infrastructure*		
Requests for Coverage Under General NPDES Permits in backlog.	*OWM*	*National Pollutant Discharge Elimination System*		
Number of WIFIA LOIs received in response to a Notice of Funding Availability.	*OWM*	*Infrastructure*		
Number of LOIs that address lead and other contaminants for drinking water systems.	*OWM*	*Infrastructure*		
Number of LOIs that address aging infrastructure.	*OWM*	*Infrastructure*		

Administratively Continued (backlogged) Individual NPDES Permits.	***OWM***	***National Pollutant Discharge Elimination System***		
Water Quality Standards actions in the backlog.	***OST***	***Water Quality Standards***		
Percent of community water systems (CWSs) that have undergone a sanitary survey within the past three years (five years for outstanding performers or those ground water systems approved by the primacy agency to provide 4-log treatment of viruses).	OGWDW	Drinking Water		DW-02
Number of tribal community water systems (CWSs) that have undergone a sanitary survey within the past three years (five years for outstanding performers or those ground water systems approved to provide 4-log treatment of viruses).	OGWDW	Drinking Water		
Fund utilization rate [cumulative dollar amount of loan agreements divided by cumulative funds available for projects] for the Drinking Water State Revolving Fund (DWSRF).	OGWDW	Drinking Water		INFRA-02
Number of Drinking Water State Revolving Fund (DWSRF) projects that have initiated operations.	OGWDW	Drinking Water		
Percent of Classes I, II and Class III salt solution mining wells that have lost mechanical integrity and are returned to compliance within 180 days thereby reducing the potential to endanger underground sources of drinking water.	OGWDW	Drinking Water		
Number of Class V motor vehicle waste disposal wells (MVWDW) and large capacity cesspools (LCC) that are closed or permitted.	OGWDW	Drinking Water		
Percent of DWSRF projects awarded to small PWS serving <500, 501-3,300, and 3,301-10,000 consumers.	OGWDW	Drinking Water		
Number and percent of small community water systems and NTNCWS (<500, 501-3,300, 3,301-10,000) with repeat health based Nitrate/Nitrite, Stage 1 D/DBP, SWTR and TCR violations.	OGWDW	Drinking Water		
Number and percent of schools and childcare centers that meet all health-based drinking water standards.	OGWDW	Drinking Water		
Percent of 'person months' (i.e. all persons served by community water systems times 12 months) during which community water systems in Indian country provide drinking water that meets all applicable health-based drinking water standards.	OGWDW	Drinking Water		
Number of drinking water and wastewater utilities and local, state, and federal officials receiving training and technical assistance to enhance emergency preparedness and resiliency to reduce risk from all hazards including those attributed to climate change impacts.	OGWDW	Drinking Water		
Percent of the population served by community water systems that receive drinking water that meets all applicable health-based drinking water standards through approaches including effective treatment and source water protection.	OGWDW	Drinking Water		DW-03
Number of American Indian and Alaska Native homes provided access to safe drinking water in coordination with other federal agencies.	OGWDW	Drinking Water		INFRA-04

Percent of community water systems that meet all applicable health-based standards through approaches that include effective treatment and source water protection.	OGWDW	Drinking Water		
Percent of "person months" (i.e. all persons served by community water systems times 12 months) during which community water systems provide drinking water that meets all applicable health-based drinking water standards.	OGWDW	Drinking Water		
Percent of the population in Indian country served by community water systems that receive drinking water that meets all applicable health-based drinking water standards.	OGWDW	Drinking Water		DW-04
Percent of community water systems where risk to public health is minimized through source water protection.	OGWDW	Drinking Water		
Percent of the population served by community water systems where risk to public health is minimized through source water protection.	OGWDW	Drinking Water		
Number of water and wastewater utilities that have registered to use the Climate Resilience Evaluation and Awareness Tool (CREAT).	OGWDW	Water Quality		
Drinking Water: Percent of State Population Served by Compliant Community Water Systems and Percent of Community Water Systems Meeting All Applicable Health-Based Standards (11 States).	OGWDW	Water Safe to Drink		
Investments in Water Infrastructure: (1) Wastewater and (2) Drinking Water.	OGWDW; OWM	Infrastructure		
Loading of biochemical oxygen demand (BOD) removed (million pounds/year) from the U.S.-Mexico Border area since 2003.	OWM	U.S.-Mexico Border		
Number of additional homes provided safe drinking water in the U.S.-Mexico border area that lacked access to safe drinking water in 2003.	OWM	U.S.-Mexico Border		
Number of additional homes provided adequate wastewater sanitation in the U.S.-Mexico border area that lacked access to wastewater sanitation in 2003.	OWM	U.S.-Mexico Border		
Number and national percent, using a constant denominator, of Combined Sewer Overflow (CSO) permits with a schedule incorporated into an appropriate enforceable mechanism, including a permit or enforcement order, with specific dates and milestones, including a completion date consistent with Agency guidance, which requires: 1) Implementation of a Long-term Control Plan (LTCP) which will result in compliance with the technology and water quality-based requirements of the Clean Water Act; or 2) implementation of any other acceptable CSO control measures consistent with the 1994 CSO Control Policy; or 3) completion of separation after the baseline date.	OWM	Safe for Swimming		
Number, and national percent, of follow-up actions that are completed by assessed NPDES (National Pollutant Discharge Elimination System) programs.	OWM	Water Quality		
Percent of non-tribal facilities covered by NPDES permits that are considered current.	OWM	Water Quality		
Percent of tribal facilities covered by NPDES permits that are considered current.	OWM	Water Quality		
[DRAFT] Backlog of State- and EPA-Issued Individual NPDES Permits.	OWM	National Pollutant Discharge Elimination System		

Number, and national percent, of MS-4s covered under either an individual or general permit.	OWM	Water Quality		
Number of facilities covered under either an individual or general industrial storm water permit.	OWM	Water Quality		
Number of sites covered under either an individual or general construction storm water site permit.	OWM	Water Quality		
Number of facilities covered under either an individual or general CAFO permit.	OWM	Water Quality		
Number, and national percent, of Significant Industrial Users (SIUs) that are discharging to POTWs with Pretreatment Programs that have control mechanisms in place that implement applicable pretreatment standards and requirements.	OWM	Water Quality		
Number, and national percent, of Categorical Industrial Users (CIUs) that are discharging to POTWs without Pretreatment Programs that have control mechanisms in place that implement applicable pretreatment standards and requirements.	OWM	Water Quality		
Fund utilization rate [cumulative loan agreement dollars to the cumulative funds available for projects] for the Clean Water State Revolving Fund (CWSRF).	OWM	Water Quality		INFRA-03
Number and percent of major NPDES wastewater treatment plant permits with nutrient limits.	OWM	Water Quality		
Number and percent of major NPDES wastewater treatment plant permits with nutrient monitoring requirements.	OWM	Water Quality		
Percent of serviceable rural Alaska homes with access to drinking water supply and wastewater disposal.	OWM	Water Quality		
Number of American Indian and Alaska Native homes provided access to basic sanitation in coordination with other federal agencies.	OWM	Water Quality		INFRA-05
Number of WaterSense partners working to improve water use efficiency.	OWM	Water Quality		
Number of CWSRFs/DWSRFs that used financial incentives to promote climate resilience projects in the last year.	OWM	Water Quality		
Number of States that included specific high priority nutrient reduction actions in their PPA/PPG and/or Section 106 grant work plans for FY18.	OWM	Water Quality		
Point Source N&P: Total Pounds of Nitrogen and Phosphorus Discharged from Major NPDES Facilities.	OWM	National Pollutant Discharge Elimination System		
Percent of Major Wastewater Dischargers without Significant Noncompliance (SNC).	OWM	Wastewater		
Total coastal and non-coastal statutory square miles protected from vessel sewage by “no discharge zone(s).”	OWOW	Coastal and Ocean Waters		
Dollar value of “primary” leveraged resources (cash or in-kind) obtained by the NEP Directors and/or staff in millions of dollars rounded to the nearest tenth of a percent.	OWOW	Coastal and Ocean Waters		
Number of active dredged material ocean dumping sites that are monitored in the reporting year.	OWOW	Coastal and Ocean Waters		
Working with partners, protect or restore additional acres of habitat within the study areas for the 28 estuaries that are part of the National Estuary Program (NEP).	OWOW	Coastal and Ocean Waters		

Percent of active dredged material ocean dumping sites that will have achieved environmentally acceptable conditions (as reflected in each site's management plan and measured through on-site monitoring programs).	OWOW	Coastal and Ocean Waters		
Clean up acres of known contaminated sediments.	OWOW	Columbia River Basin		
Demonstrate a reduction in mean concentration of certain contaminants of concern found in water and fish tissue.	OWOW	Columbia River Basin		
Percent of goal achieved in reducing trade-equalized (TE) point source nitrogen discharges to Long Island Sound from the 1999 baseline of 59,146 TE lbs./day.	OWOW	Long Island Sound		
Reduce the size (square miles) of observed hypoxia (Dissolved Oxygen <3mg/l) in Long Island Sound.	OWOW	Long Island Sound		
Restore, protect or enhance acres of coastal habitat from the 2010 baseline of 2,975 acres.	OWOW	Long Island Sound		
Reopen miles of river and stream corridors to diadromous fish passage from the 2010 baseline of 177 river miles by removal of dams and barriers or by installation of bypass structures.	OWOW	Long Island Sound		
Improve water quality and enable the lifting of harvest restrictions in acres of shellfish bed growing areas impacted by degraded or declining water quality. (cumulative starting in FY 06)	OWOW	Puget Sound Basin		
Protect or restore acres or shoreline miles of aquatic habitats including: estuaries, floodplains, marine and freshwater shorelines, riparian areas, stream habitats and associated wetlands. (cumulative starting in FY06)	OWOW	Puget Sound Basin		
Percent increase of sewage treatment facilities and onsite sewage treatment and disposal systems receiving advanced wastewater treatment or best available technology.	OWOW	South Florida Ecosystem		
The number of Everglades Stormwater Treatment Areas (STAs) with the annual total phosphorus (TP) outflow less than or the same as the five-year annual average TP outflow, working towards the long-term goal of meeting the 10 parts per billion annual geometric mean.	OWOW	South Florida Ecosystem		
Achieve 'no net loss' of stony coral cover (mean percent stony coral cover) in the Florida Keys National Marine Sanctuary (FKNMS) and in the coastal waters of Dade, Broward, and Palm Beach Counties, Florida (SE FL), working with all stakeholders (federal, state, regional, tribal, and local).	OWOW	South Florida Ecosystem		
Annually maintain the overall health and functionality of sea grass beds in the FKNMS as measured by the long-term sea grass monitoring project that addresses composition and abundance, productivity, and nutrient availability.	OWOW	South Florida Ecosystem		
At least seventy five percent of the monitored stations in the near shore and coastal waters of the Florida Keys National Marine Sanctuary will maintain Chlorophyll a (CHLA) levels at less than or equal to 0.35 ug l-1 and light clarity (Kd)) levels at less than or equal to 0.20 m-1.	OWOW	South Florida Ecosystem		

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At least seventy five percent of the monitored stations in the near shore and coastal waters of the Florida Keys National Marine Sanctuary will maintain dissolved inorganic nitrogen (DIN) levels at less than or equal to 0.75 uM and total phosphorus (TP) levels at less than or equal to .25 uM .	OWOW	South Florida Ecosystem		
Number of tribes that currently receive funding under Section 106 of the Clean Water Act that have developed and begun implementing monitoring strategies that are appropriate to their water quality program consistent with EPA Guidance.	OWOW	Water Quality		
Estimated annual reduction in million pounds of nitrogen from nonpoint sources to waterbodies (Section 319 funded projects only).	OWOW	Water Quality		
Estimated annual reduction in million pounds of phosphorus from nonpoint sources to waterbodies (Section 319 funded projects only).	OWOW	Water Quality		
Estimated annual reduction in million tons of sediment from nonpoint sources to waterbodies (Section 319 funded projects only).	OWOW	Water Quality		
Number of waterbodies identified by states (in 1998/2000 or subsequent years) as being primarily nonpoint source (NPS)-impaired that are partially or fully restored.	OWOW	Water Quality		
Number of urban water projects initiated addressing water quality issues in the community.	OWOW	Water Quality		
Number of urban water projects completed addressing water quality issues in the community.	OWOW	Water Quality		
Extent of priority areas identified by each state that are addressed by EPA-approved TMDLs or alternative restoration approaches for impaired waters that will achieve water quality standards. These areas may also include protection approaches for unimpaired waters to maintain water quality standards.	OWOW	Water Quality		
State-wide extent of activities leading to completed TMDLs or alternative restoration approaches for impaired waters, or protection approaches for unimpaired waters.	OWOW	Water Quality		
Number of states protecting or improving water quality conditions, as demonstrated by state-scale statistical surveys: On average, water quality is improving or at least not degrading (there is no statistically significant decrease in mean water quality); The percentage of waters in good condition is increasing or remaining constant; and, The percentage of waters in poor condition is decreasing or remaining constant.	OWOW	Water Quality		
Report on the quality of the nation's waters.	OWOW	Water Quality		
Improve water quality in Indian country at baseline monitoring stations in tribal waters (i.e., show improvement in one or more of seven key parameters: dissolved oxygen, pH, water temperature, total nitrogen, total phosphorus, pathogen indicators, and turbidity).	OWOW	Water Quality		
Identify monitoring stations on tribal lands that are showing no degradation in water quality (meaning the waters are meeting tribal water quality objectives).	OWOW	Water Quality		
Number of acres restored and improved, under the 5-Star, NEP, 319, and great waterbody programs.	OWOW	Wetlands		

Percent of Clean Water Act Section 404 standard permits, upon which EPA coordinated with the permitting authority (i.e., Corps or State), where a final permit decision in FY 08 documents requirements for greater environmental protection than originally proposed.	OWOW	Wetlands		
Number of Actions completed by states, tribes, and territories to build programs in four areas of wetland management: regulatory, monitoring and assessment, water quality standards, and restoration and protection.	OWOW	Wetlands		
In partnership with the U.S. Army Corps of Engineers, states and tribes, achieve 'no net loss' of wetlands each year under the Clean Water Act Section 404 regulatory program.	OWOW	Wetlands		
Percent Water Bodies Monitored and Waters Meeting Designated Uses: Miles of rivers and streams assessed and associated condition (8 States).	OWOW	Surface Water Protection		
Nonpoint Source N&P: Estimated Annual Reduction in Pounds of Nitrogen and Phosphorus, and in Tons of Sediment from Nonpoint Sources to Waterbodies (Section 319 funded projects only).	OWOW	Nonpoint Source		
Square miles associated with state priority waters addressed by a TMDL, other restoration plan, or protection approach.	OWOW	Water Quality		TMDL-01
Watersheds with surface waters not meeting standards because of nutrients (square miles).	OWOW	Water Quality		
Percent of women of childbearing age having mercury levels in blood above the level of concern.	OST	Fish and Shellfish		
Percent of all Tier I (significant) public beaches that are monitored and managed under the BEACH Act program.	OST	Safe for Swimming		
Percent of days of the beach season that coastal and Great Lakes beaches monitored by state beach safety programs are open and safe for swimming.	OST	Safe for Swimming		
Number of numeric water quality standards adopted for total nitrogen or total phosphorus for all waters within the State or Territory for each of the following waterbody types: lakes/reservoirs, rivers/streams, and estuaries.	OST	Water Quality		
Number of numeric water quality standards planned to be adopted within 3 years for total nitrogen and total phosphorus for all waters within the state or territory for each of the following waterbody types: lakes/reservoirs, rivers/streams, and estuaries, based on a full set of performance milestone information supplied annually by states and territories.	OST	Water Quality		
Number of tribes that have water quality standards approved by EPA.	OST	Water Quality		
Number, and national percent, of states and territories that within the preceding three year period, submitted new or revised water quality criteria acceptable to EPA that reflect new scientific information from EPA or other resources not considered in the previous standards.	OST	Water Quality		
Number, and national percent of tribes that within the preceding three year period, submitted new or revised water quality criteria acceptable to EPA that reflect new scientific information from EPA or other resources not considered in the previous standards.	OST	Water Quality		

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Percentage of submissions of new or revised water quality standards from states and territories that are approved by EPA.	OST	Water Quality		
Number of states and tribes completing triennial reviews on time.	OST	Water Quality Standards		
Number of states and territories with a methodology for notifying the public of when a harmful algal bloom is present.	OST	Surface Water Protection		
Decrease the number of waterbodies impaired by total nitrogen and total phosphorus within the continental United States and territories	OST	Nonpoint Source		
Number of water and wastewater utilities that use the EnergyStar Portfolio Manager to manage energy.	OW	Water Quality		
Percent attainment of water quality standards for dissolved oxygen, water clarity/underwater grasses, and chlorophyll a in Chesapeake Bay and tidal tributaries.	CBPO	Chesapeake Bay		
Percent of goal achieved for implementing nitrogen pollution reduction actions to achieve the final TMDL allocations, as measured through the phase 5.3 watershed model.	CBPO	Chesapeake Bay		
Percent of goal achieved for implementing phosphorus pollution reduction actions to achieve the final TMDL allocations, as measured through the phase 5.3 watershed model.	CBPO	Chesapeake Bay		
Percent of goal achieved for implementing sediment pollution reduction actions to achieve final TMDL allocations, as measured through the phase 5.3 watershed model.	CBPO	Chesapeake Bay		
Number of Beneficial Use Impairments removed within Areas of Concern.	GLNPO	Great Lakes		
Number of multi-agency rapid response plans established, mock exercises to practice responses carried out under those plans, and/or actual response actions.	GLNPO	Great Lakes		
Acres managed for populations of invasive species controlled to a target level.	GLNPO	Great Lakes		
Projected phosphorus reductions from GLRI-funded projects in targeted watersheds.	GLNPO	Great Lakes		
Projected volume of untreated urban runoff captured or treated by GLRI-funded projects.	GLNPO	Great Lakes		
Number of miles of Great Lakes tributaries reopened by GLRI-funded projects.	GLNPO	Great Lakes		
Number of miles of Great Lakes shoreline and riparian corridors protected, restored, and enhanced by GLRI-funded projects.	GLNPO	Great Lakes		
Number of acres of Great Lakes coastal wetlands protected, restored, and enhanced by GLRI-funded projects.	GLNPO	Great Lakes		
Number of acres of other habitats in the Great Lakes basin protected, restored, and enhanced by GLRI-funded projects.	GLNPO	Great Lakes		
Number of Areas of Concern in the Great Lakes where all management actions necessary for delisting have been implemented.	GLNPO	Great Lakes		
Improve and/or restore water and habitat quality to meet water quality standards in watersheds throughout the five Gulf States and the Mississippi River Basin.	GMPO	Gulf of Mexico		
Promote and support environmental education and outreach to the inhabitants of the Gulf of Mexico watershed.	GMPO	Gulf of Mexico		

Support the assessment, development and implementation of programs, projects and tools which strengthen community resilience.	GMPO	Gulf of Mexico		
Protect, enhance, or restore coastal and upland habitats within the Gulf of Mexico watershed.	GMPO	Gulf of Mexico		
Percent of population in the U.S. Pacific Island Territories served by community water systems that has access to continuous drinking water meeting all applicable health-based drinking water standards, measured on a four quarter rolling average basis.	R9	Pacific Island Territories		

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FY 2018-2019 NPM Guidance	ECOS Common Measures	Comments
WQ-35		

SDW-01a		
SDW-01b		
SDW-04		
SDW-05		
SDW-07		
SDW-08		
SDW-11		
SDW-15		
SDW-17		
SDW-20		
SDW-21		
SDW-211		
SDW-22		

SDW-SP1		
SDW-SP2		
SDW-SP3		
SDW-SP4a		
SDW-SP4b		
WQ-32		
	ECOS-01	
	ECOS-06	
MB-SP23		
MB-SP24		
MB-SP25		
SS-1		
WQ-11		
WQ-12a		
WQ-12b		

WQ-13a		
WQ-13b		
WQ-13c		
WQ-13d		
WQ-14a		
WQ-14b		
WQ-17		
WQ-20a		
WQ-20b		
WQ-23		
WQ-24		
WQ-30		
WQ-33		
WQ-34		
	ECOS-04	
	ECOS-05	
CO-02		
CO-04		
CO-06		
CO-432		

CO-SP20		
CR-SP53		
CR-SP54		
LI-SP41		
LI-SP42		
LI-SP43		
LI-SP44		
PS-SP49		
PS-SP51		
SFL-1		
SFL-2		
SFL-SP45		
SFL-SP46		
SFL-SP47a		

SFL-SP47b		
WQ-06a		
WQ-09a		
WQ-09b		
WQ-09c		
WQ-10a		
WQ-25a		
WQ-25b		
WQ-27		
WQ-28		
WQ-29		
WQ-SP13		
WQ-SP14a		
WQ-SP14b		
WT-01		

WT-03		
WT-04		
WT-SP22		
	ECOS-02	
	ECOS-03	
FS-SP6		
SS-2		
SS-SP9		
WQ-01a		
WQ-01d		
WQ-02		
WQ-03a		
WQ-03b		

WQ-04a		
WQ-31		
CB-05		
CB-SP35		
CB-SP36		
CB-SP37		
GL-05		
GL-07		
GL-09		
GL-17		
GL-18		
GL-19		
GL-20		
GL-21		
GL-22		
GL-SP31		
GM-01		
GM-02		

GM-03		
GM-SP39		
PI-SP26		

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

JUL 0 9 2018

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

Re: Approval of 2018 Clean Water Act (CWA) Section 303(d) List

Dear Ms. Kavalec:

The U. S. Environmental Protection Agency conducted a complete review of the Ohio Environmental Protection Agency (Ohio EPA's) 2018 CWA Section 303(d) list and supporting documentation and information. Based on this review, EPA determined that Ohio EPA's 2018 list of water quality limited segments still requiring Total Maximum Daily Loads (TMDLs) meets the requirements of Section 303(d) of the CWA and EPA's implementing regulations. Ohio EPA's 2018 Integrated Report also included an updated priority ranking of Ohio's impaired waters still requiring TMDLs. EPA finds that Ohio EPA's discussion of prioritization of its waters, including for Lake Erie, satisfies the requirement to submit a priority ranking consistent with EPA's regulations. *See* 40 C.F.R. 130.7(b)(4). Therefore, EPA hereby approves Ohio EPA's 2018 CWA Section 303(d) list.

The statutory and regulatory requirements, and EPA's review of Ohio's compliance with each requirement, are described in the enclosed decision document.

If you have any questions please contact Mr. Peter Swenson, Chief, Watersheds and Wetlands Branch, at 312-886-0236.

Sincerely,

Linda Holst

Linda Holst
Acting Division Director
Water Division

Enclosure

cc: Cathy Alexander, Ohio EPA

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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 Environmental Protection Agency's (Ohio EPA) 2018 Section 303(d) list and supporting documentation and information. Based upon this review, EPA is approving Ohio's list of Water Quality Limited Segments (WQLS) still requiring total maximum daily loads (TMDLs) under Section 303(d) of the Clean Water Act (CWA or "the Act") and EPA's implementing regulations. Ohio's list appears in Category 5 of the Ohio 2018 Integrated Water Quality Monitoring and Assessment Report (2018 Integrated Report or 2018 IR), and EPA's approval extends only insofar as waterbodies are listed or not in Category 5 of the 2018 Integrated Report.[1] The statutory and regulatory requirements are described in detail below.

For the 2018 list, Ohio identified a new Sandusky Basin shoreline assessment unit (AU), which was previously part of the Western Basin shoreline. The Sandusky Basin shoreline AU is located between the Western Basin and Central Basin shorelines. Ohio EPA has listed the Sandusky Basin shoreline AU for all four of Ohio's designated uses: Human Health (HH), Recreation Use (RU), Aquatic Life Use (ALU), and Public Drinking Water Supply (PDWS). EPA is approving these listings. EPA is also approving Ohio EPA's listing of the Western Basin shoreline for PDWS, which was not included on its amended 2016 list. The bases for these listings are summarized in Section F, H and L of the 2018 IR.

EPA concurs that Ohio's submission accurately reflects the excess of algal indicators of impairment in both the open waters and shoreline AUs of Ohio's portion of Lake Erie, and provides the details of the assessment methodology to determine these impairments, as described in the 2018 IR and within this document.

EPA also concurs with Ohio's revision of its definitions of shoreline AUs to extend to ≤3 meters in depth.[2]

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 their jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) of the Act are not stringent

[1] Ohio EPA, Ohio 2018 Integrated Water Quality Monitoring and Assessment Report (June 2018), available at http://www.epa.ohio.gov/dsw/tmdl/OhioIntegratedReport#1798510016-report

[2] The 2016 IR Amendment included new open water AUs for the Western, Sandusky Bay, and Central Basins. The shoreline AUs were defined as extending 100 meters from the shoreline and 500 yards from drinking water supply intakes, but were revised in the 2018 IR. The Sandusky AU change between the 2016 IR Amendment and the 2018 IR resulted in the Sandusky Basin shoreline and Western Basin shoreline listings for PDWS in the 2018 IR.

enough to implement any applicable water quality standard (WQS), 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) of the Act.

EPA's implementing regulations require states to submit biennially a list identifying WQLSs still requiring a TMDL (40 C.F.R. §§130.7(b)(1), 130.7(d)). 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)).

Evaluation 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, 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 assemble and evaluate any other existing and readily available data and information. EPA's guidance describes categories of water quality-related data and information that may be existing and readily available.[3] 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 not use 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)).

The Ohio 303(d) list of prioritized impaired waters (i.e., Category 5 of the 2018 Integrated Report) is contained in Section L4 of the 2018 Integrated Report. EPA has reviewed Ohio's description of the data and information it assembled and evaluated, its methodology for

[3] EPA, Guidance for Water Quality-Based Decisions: the TMDL Process (April 1991) (hereinafter referred to as EPA's 1991 Guidance).

identifying waters, and any other relevant information including information the State submitted to EPA in response to requests for additional information.

Ohio relied on its credible data law, codified in the Ohio Revised Code (ORC) §§ 6111.50 - 6111.56, in deciding whether or not to use particular data or information in determining whether to list particular waters. That law establishes requirements for the use of external data. The 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 (QDC) and be compliant with the specifications of "Level 3 credible data," in order to be used for listing waters under Section 303(d) of the Act. Those rules, effective March 24, 2006, have been codified in Chapter 3745-4 of the Ohio Administrative Code (OAC). Within Section D6.1 of the 2018 Integrated Report is the memorandum dated May 23, 2017 sent by Ohio to solicit Level 3 data from external sources and all Level 3 QDCs. External sources include State and county health departments, universities, U.S. Geological Survey, Northeast Ohio Regional Sewer District (NEORSD), the Ohio Department of Natural Resources (ODNR), Public Water Supply (PWS) permittees, Syngenta Corp Protection, Inc., Midwest Biodiversity Institute, Enviroscience, Inc., Ohio Department of Transportation, Heidelberg College, EA Science and Technology, Inc., Cleveland Metroparks, and Clermont County Office of Environmental Quality. The data collectors either received training and certification from Ohio EPA to become QDCs, or the entities have submitted data in the past. The Ohio River data collection is through the Ohio River Valley Water Sanitation Commission (ORSANCO), and Ohio EPA uses this ORSANCO data; ORSANCO's non-support and partial support of uses in the Ohio River are considered impaired by Ohio.[4]

In addition to using Ohio EPA data, Ohio's assessment for the 2018 listing cycle used data from other Level 3 entities, or those agencies and entities that could likely be approved as Level 3 QDCs. Data used or protocols reviewed were from EPA, the National Oceanic and Atmospheric Administration (NOAA), NOAA's Great Lakes Environmental Research Lab (GLERL), the ODNR – Department of Water (DOW) Sandusky, charter boat captains, the US Geological Survey (USGS), the Ohio State University, Bowling Green State University, and the University of Toledo. Data and analyses from these entities had been compiled through the Great Lakes Water Quality Agreement (GLWQA) Annex 4 workgroup. The workgroup's efforts resulted in phosphorus reduction targets established under Annex 4 to decrease the occurrence and frequency of algal bloom biomass and cyanobacteria,[5] and the workgroup's results were peer reviewed by an *ad hoc* committee of EPA's Science Advisory Board. Ohio further collaborated with many of the researchers and data collectors in the workgroup to formulate the assessment methodology that Ohio used in Lake Erie impairment assessment in this listing cycle (Section F of the 2018 IR) and the amended 2016 IR.

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[4] ORSANCO, Assessment of Ohio River Water Quality Conditions 2010-2014 (June 2016). http://www.orsanco.org/publications/biennial-assessment-305b-report/ (2016 IR) and Section D of the 2018 Integrated Report

[5] Great Lakes Water Quality Agreement, Annex 4. "Recommended Phosphorus Loading Targets for Lake Erie". Annex 4 Objectives and Targets Task Team Final Report to the Nutrients Annex Subcommittee. May 11, 2015.

EPA concludes that the State has satisfied the regulatory requirement to assemble and evaluate all existing and readily available water quality-related data and information, including data and information relating to the categories of waters specified in 40 C.F.R. §130.7(b)(5). The State assembled and evaluated, but chose not to use existing and readily available data that were not Level 3 because the State was unable to conclude that this data was "credible," "valid," and "useful for their intended purpose." Consistent with EPA regulations at 40 C.F.R. §130.7(b)(6)(iii), EPA finds that this rationale for the State's decision not to use this data and information as a basis for listing waters is reasonable.

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).

II. Description of Ohio's Submission

Listing Methodology and Reporting.

The waterbodies in Category 5, at Section L4 of Ohio's 2018 IR, constitute Ohio's Section 303(d) list. Ohio's 2018 IR discusses several issues that impact Ohio's assessment program. The 2018 IR includes open water assessment units (previously added to the 2016 IR Amendment) for Lake Erie in addition to the previous shoreline assessment units. The most significant additions to the 2018 303(d) list are 1) the PDWS Use impairment in the Western Basin shoreline, and 2) the PDWS Use impairment of the Sandusky Basin shoreline, which is a new AU.[6] Several sections of the 2018 IR are not discussed in this decision document because they do not represent a significant departure from past monitoring and assessment practices.

Section C of the 2018 IR: Managing Water Quality.

Section C provides an update of various surface water quality management programs and Ohio's Lake Erie programs.[7] Each of the Areas of Concern (AOCs) has had reduction or progress

[6] On May 04, 2018, Ohio EPA amended its 2016 IR to include listings of the Western Basin open waters, and Islands Shoreline of Lake Erie as impaired for recreational use due to algae; Ohio also listed the open waters of the Western, Sandusky Bay area, and Central Basins as impaired for PDWS use. On May 10, 2018, EPA approved Ohio's 2016 IR Amendment.
[7] 2018 IR, p. C6-10.

toward reduction of Beneficial Use Impairments (BUIs) since the last listing cycle. These efforts include the ongoing Remedial Action Plans (RAPs) in the AOCs in the Maumee, Black, Cuyahoga and Ashtabula Rivers, all of which flow into Lake Erie. Environmental restoration projects for these tributary rivers are funded under the Great Lakes Restoration Initiative and the Great Lakes Legacy Act (GLLA) to reduce nutrient loadings to Lake Erie, remove contaminated sediments, restore habitat, remove dams, and achieve other water-quality related aims, with the ultimate goal of reducing the BUIs for the AOCs.

Another program highlighted in Section C of the 2018 IR is the Lake Erie Lakewide Action and Management Plan (LAMP) (formerly LaMP), which is focused on loading reductions and restoration of beneficial uses. The Lake Erie LAMP initially concentrated on the reduction of toxic chemical pollutants, but now includes a focus on Nonpoint Source (NPS) and pollutants such as nutrients and habitat alteration. The LAMP outlines management actions needed to assist Lake Erie and its beaches in restoring and maintaining their chemical, physical and biological integrity. The Great Lakes Water Quality Agreement between the United States and Canada (amended in 2012), 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 nearshore monitoring to support a more integrated nearshore monitoring framework. Annex 4 of the GLWQA addresses nutrient loadings to Lake Erie and establishes an interim target for total phosphorus of 15 µg/l for the Western Basin and 10 µg/l for the Central and Eastern Basins, as well as a process to develop final loading targets for total phosphorus and an allocation for each country along with domestic action plans to meet the targets.[8]

Since the last listing cycle, an important issue has been addressed regarding Ohio's TMDL program. On March 24, 2015, the Ohio Supreme Court in *Fairfield Cty. Bd. of Commrs. v. Nally,* 143 Ohio St.3d 93, 2015-Ohio-991[9] stated Ohio EPA must follow the rulemaking procedure under State law before submitting a TMDL to EPA for approval and ultimately for implementation in an National Pollutant Discharge Elimination System (NPDES) permit. This resulted in a backlog of work on TMDL development at the State. On September 29, 2017, the Ohio General Assembly amended State law to: 1) reinstate previously approved TMDLs; 2) require stakeholder outreach at several points during TMDL development; 3) mandate consideration of several technical and financial items; 4) affirm that TMDLs are not actions of the Director and challenges are made through the NPDES permit appeal process; and 5) require Ohio EPA to adopt administrative rules for stakeholder notification and significant public interest by December 2018.[10]

Ohio Senate Bill 1 was passed in July 2015 directing Ohio EPA to implement actions to protect against cyanobacteria in the Western Basin of Lake Erie and in public water supplies pursuant to ORC §3745.50, which authorized the Ohio EPA Director to serve as the coordinator of harmful

[8] Under Annex 4 of the GLWQA, loading targets for phosphorus were developed in 2015 for Lake Erie; a load reduction plan and adaptive management planning via Domestic Action Plans is ongoing.
[9] This decision is available online at supremecourt.ohio.gov/rod/docs/pdf/0/2015/2015-Ohio-991.pdf.
[10] 2018 IR, p. C-16-17.

algae management and response. Ohio adopted new and revised rules, effective June 1, 2016, to meet these requirements. The rules address "analytical protocols, establishment of health advisories and public notification protocols and triggers, sampling, treatment techniques, algaecide application and reporting requirements."[11] In 2016, Ohio established the Division of Drinking and Ground Waters (DDAGW) to protect groundwater systems and ensure that public water systems supply safe drinking water. Ohio EPA has undertaken a number of interagency and interdivision efforts to protect water systems and has implemented the *Public Water System Harmful Algal Bloom Response Strategy.*[12] Communication with the public includes the website ohioalgaeinfo.com and ODH BeachGuard site at http://publicapps.odh.ohio.gov/BeachGuardPublic/Default.aspx.

Ohio EPA also discusses in this Section of the IR the results of algal toxin monitoring and phytoplankton monitoring at inland lakes and Lake Erie. Microcystin and cyanobacteria screening indicate the occurrence of Harmful Algal Blooms (HABs) across the State.[13] Screening and follow up samples showed:

1. Microcystin-producing genes were detected at 56% of source waters; microcystins were detected at 47% of Ohio's PWS source waters;
2. Saxitoxin-producing genes were detected at 38% of source waters; follow up sampling of saxitoxin screening locations showed 18% of the PWS waters had saxitoxins;
3. Cylindrospermopsin-producing genes were detected at two sites; follow up sampling found Cylindrospermopsin-producing genes only at one site.

Under an Ohio EPA-funded program, charter boat captains collected 151 samples in the Western Basin in 2016 and 146 samples in 2017. Ohio also used NOAA satellite imagery as a tool to confirm the presence of HABs, and to assist with quantification of algal bloom densities.

As in 2016, Ohio EPA reviewed its goals in the 2018 IR relative to the EPA 303(d) Vision Framework of December 2013.[14] The Framework goal is to restore high priority waters identified by each state. The Ohio EPA long term general priorities are to:

- Continue to use a rotating basin schedule for field monitoring but on a more limited basis to allow for increased focus on lakes and protecting downstream uses;
- Sharpen focus on Public Water Supply Use;
- Incorporate HAB considerations into priorities (both PDWS use and ultimately Recreation use);
- Concentrate recreation TMDLs on High-Use recreation waters;
- Continue to make mercury and legacy/sediment metals low-priority TMDLs as other approaches are anticipated to be more effective.

[11] 2018 IR, p. C-21.
[12] 2018 IR, p. C-21.
[13] 2018 IR, p. C-22.
[14] Information for assistance with the CWA 303(d) Program Vision, Benita Best-Wong cover letter dated August 13, 2015.

Section D of the 2018 IR: Framework for Reporting and Evaluation.

Ohio continues to use the designated use framework for assessment of aquatic life, recreation, human health, and PDWS. The IR includes the Lake Erie Assessment Units (LEAUs) for all portions of Lake Erie within Ohio's jurisdiction, and the assessment of the LEAUs for impairment of the State's Recreational Use (RU) due to Algae, as described in the amended 2016 IR and slightly modified in the 2018 IR. Lake Erie assessment units include the open waters of the Western, Central, and Sandusky Basins, and delineation of the Sandusky Bay shoreline (formerly included in the Western Basin shoreline).[15]

The LEAUs are described as follows:[16]
o Western Basin shoreline and open water (OH-MI state line to Marblehead);
o Lake Erie islands shoreline (including South Bass Island, Middle Bass Island, North Bass Island, Kelleys Island, West Sister Island and other small islands);
o Sandusky Basin shoreline and open water (Marblehead to Lorain Ridge); and
o Central Basin shoreline and open water (Black River/Lorain Ridge to OH-PA state line).[17]

Section D6 of Ohio's 2018 IR discusses the public involvement in compiling the 2018 303(d) list and summarizes public comments Ohio received on its draft 2018 IR, and responses provided by Ohio EPA. The formal comment period extended from March 23, 2018 through May 4, 2018. The Notice is included in the 2018 Integrated Report in Section D6.1. Section D6.1.1 includes instruction for Level 3 Credible Data and entities and agencies that have contributed data.

Public Comments:

Copies of the full public comments, and a responsiveness summary of the comments received and the State's responses were included in the submittal package to EPA. Comments received primarily focused on the following topics: general comments, those related to the monitoring schedule, and those related to Lake Erie. Public comments received and Ohio EPA's responses are included in Section D6.3.1 and D6.3.2 of the IR.

EPA has reviewed the public comments received and Ohio EPA's responses, and concludes that Ohio EPA adequately addressed the public comments received insofar as they raised any concerns about the State's listing obligations under Section 303(d) and EPA's implementing regulations.

[15] Ohio EPA has redefined the shoreline, to include waters ≤ 3 meters in depth, and open waters are defined as those waters > 3 meters in depth.
[16] 2018 IR, Section D1.
[17] 2018 IR, p. D-2.

Section F of the 2018 IR: Evaluating Beneficial Use - Recreation.

Recreational Use E. coli

Ohio revised its WQS for *E. coli,* which became effective in February 2017 and approved by EPA in June 2017. The standards were moved from OAC §3745-1-07 to §3745-1-37. The revised recreational WQS are based on the protected use associated with the various waterbody types (bathing waters and primary/secondary contact waters) (Table F-1 below). The Statistical Threshold Value (STV) replaces the past single sample maximum methodology.[18]

Table F-1 — Summary of the RU assessment methods.

Bathing Waters		
Indicator	**Criterion (Table 37-2, OAC 3745-1-37)**	**Assessment Method Summary**
E. coli	Geometric mean *E. coli* content* based on samples collected within a 90-day period during the recreation season within a calendar year is 126 cfu/100 mL; statistical threshold value (STV) is 410 cfu/100 mL.	Applied to the four Lake Erie shoreline assessment units and inland lake beaches, exceedance of the geometric mean bathing water criterion or an exceedance of the STV in more than 10 percent of the samples collected during a 90-day period is considered an impairment of the bathing water use, where sufficient data are available**.
Primary Contact and Secondary Contact		
Indicator	**Criterion (Table 37-2, OAC 3745-1-37)**	**Assessment Method Summary**
E. coli	Geometric mean *E. coli* content* based on samples collected within a 90-day period during the recreation season within a calendar year is as follows: Primary Contact Waters 90-day Geometric Mean: 126 cfu/100 mL STV: 410 cfu/100 mL Secondary Contact Waters 90-day Geometric Mean: 1,030 cfu/100 mL STV: 1,030 cfu/100 mL	Applied to streams and inland lake non-beach sites. Data collected within a 90-day period in the recreation season are assessed on a site-by-site basis and compared to the applicable geometric mean and STV *E. coli* criteria whenever sufficient data** are available for the site. Assessment units (AUs) are in full attainment if all sites assessed within the AU meet both the applicable geometric mean and STV criteria and in non-attainment if one or more sites assessed within the AU exceed the applicable geometric mean or STV criteria.

E. coli concentrations are expressed in colony forming units (cfu) per 100 milliliters (mL)
** Five or more samples collected within a 90-day period.

In contrast to Ohio's bathing water recreational use criteria, beach advisory recommendations are based upon a single sample maximum *E. coli* criterion, using the federal bacteria rule promulgated pursuant to the BEACH Act.[19] Section F of the 2018 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 threshold for triggering the issuance of beach advisories has been used since 2006.

Table F-11 below shows Ohio's 65 Lake Erie beaches divided into the four geographical areas. The percentage of days in exceedance of the *E. coli* single sample maximum criterion from 2013 to 2017 was as follows: 15.4% for the Western Basin, 20.2% for the Central Basin, 25.3% for the Sandusky Basin, and 3.9% for the Lake Erie Islands.

[18] The STV represents the 90th percentile of the samples collected in the 90-day period (five or more samples) that cannot be exceeded in more than 10% of the samples.
[19] Water Quality Standards for Coastal and Great Lakes Recreation Waters, 69 Fed. Reg. 67217 (Nov. 16, 2004).

Table F-11 — Aggregated exceedance frequencies at 65 Lake Erie public beaches from 2013-2017 (pooled by Lake Erie shoreline AU to report use support).

	Western Basin	Central Basin	Sandusky Basin	Lake Erie Islands
Number of beaches	7	30	26	2
Total recreation days	3,535	14,857	13,561	1,026
Total days in exceedance	546	3,005	3,426	40
Percentage of days in exceedance	15.4%	20.2%	25.3%	3.9%
Total beach seasons[1]	35	148	129	10
Average # of days *E. coli* BAV exceeded per beach per season[2]	15.6	20.3	26.6	1.0
Number of beaches exceeding 90-d geomean one or more years during reporting cycle[3]	5	22	14	1
Number of beaches exceeding STV within a 90-day period in one or more years during the reporting cycle[3]	5	30	25	2
Attainment status	Does not support	Does not support	Does not Support	Does not Support

[1] 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 2013-2017 reporting period.
[2] Calculated by dividing the total days in exceedance in the basin by the total number of beach seasons in the basin.
[3] Used to determine attainment status.

Table F-13 below shows the *E. coli* results for the five most recent listing cycles for rivers and streams in Watershed Assessment Units (WAUs). For the 170 AUs analyzed for the 2018 IR, shown in the last two columns, 8% fully supported RU with respect to *E. coli* while 92% did not.

Table F-13 — Overall differences in the assessment of RU attainment, 2010-2018.

	2010 Report		2012 Report		2014 Report		2016 Report		2018 Report	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total AUs[a]	1,576	100	1,576	100	1,576	100	1,576	100	1,576	100
Assessed	487	31	588	37	680	43	713	45	170	11
Not Assessed	1,089	69	988	63	896	57	863	55	1,406	89
Supporting Use[b]	65	13	88	15	130	19	73	10	14	8
Not Supporting Use[b]	422	87	500	85	550	81	640	90	156	92

[a] Includes LRAUs.
[b] Note: The percentage of AUs reported as supporting the RU and not supporting the RU are based on the total AUs that were assessed (e.g., 187 in the 2018 analysis).

Beaches at inland lakes are tested less frequently compared to Lake Erie beaches. The overall frequency of exceedances at inland lakes was 13.8% in the most recent five-year reporting period, an increase from 12.4% reported in the 2011-2015 reporting period. There were 28 inland lake beaches where the aggregated exceedance frequency was over 10 percent. The highest frequency was 66% at Brooks Park beach, and 60% at Crystal Beach, both located at Buckeye Lake. There were 13 beaches that exceeded the bathing water *E. coli* criteria over 25 percent of the time over the five-year reporting period total.[20]

Recreational Use Algae - Western Basin

Prior to its amended 2016 list, Ohio assessed for RU based solely on the presence of bacteria. In the current listing cycle, the methodology includes the assessment of RU impairment in the

[20] Site specific data and discussion can be found at 2018 IR, Section F3.3.

Western basin of Lake Erie related to algae.[21] In its assessments prior to its amended 2016 list, Ohio EPA assessed three Lake Erie AUs-the Western Basin, Central Basin, and Lake Erie Islands Shorelines. For its 2016 IR Amendment, Ohio EPA added the Western, Central and Sandusky Basin Open Waters AUs for 303(d) assessment purposes. The Sandusky Basin Shoreline AU was added in the 2018 IR (Table F-18 and Figure F-7 from the 2018 IR below). Table F-18 below describes details of the map of the new AUs in Figure F-7. The Central Basin Shoreline and Open Water AUs extend eastward to the border of Pennsylvania.

Table F-18 — Proposed Ohio Lake Erie AUs.

AU Code	AU Name	Description
041202000201	Western Basin Shoreline (W1)	Lake Erie shoreline from the MI/OH state line to the west side of Catawba Island at depths ≤3m, including Maumee Bay
041202000301	Western Basin Open Waters (W2)	Lake Erie open water from the MI/OH state line to a line between the Marblehead Lighthouse and Pelee Point at depths >3m (U.S. waters only)
041202000100	Islands Shoreline (I1)	Lake Erie island shorelines from the west side of Catawba Island to the Marblehead Lighthouse at depths ≤3m and including, but not limited to the following Islands; West Sister, Bass and Kelleys
041202000202	Sandusky Basin Shoreline (S1)	Lake Erie shoreline from the Marblehead Lighthouse to the Black River at depths ≤3m, including Sandusky Bay
041202000302	Sandusky Basin Open Waters (S2)	Lake Erie open water from a line between the Marblehead Lighthouse and Pelee Point to the Lorain Ridge at depths >3m (U.S. waters only)
041202000203	Central Basin Shoreline (C1)	Lake Erie shoreline from the Black River to the OH/PA state line at depths ≤3m
041202000303	Central Basin Open Waters (C2)	Lake Erie open water from the Lorain Ridge to the OH/PA state line at depths >3m (U.S. waters only)

[21] 2018 IR, Section F.4.

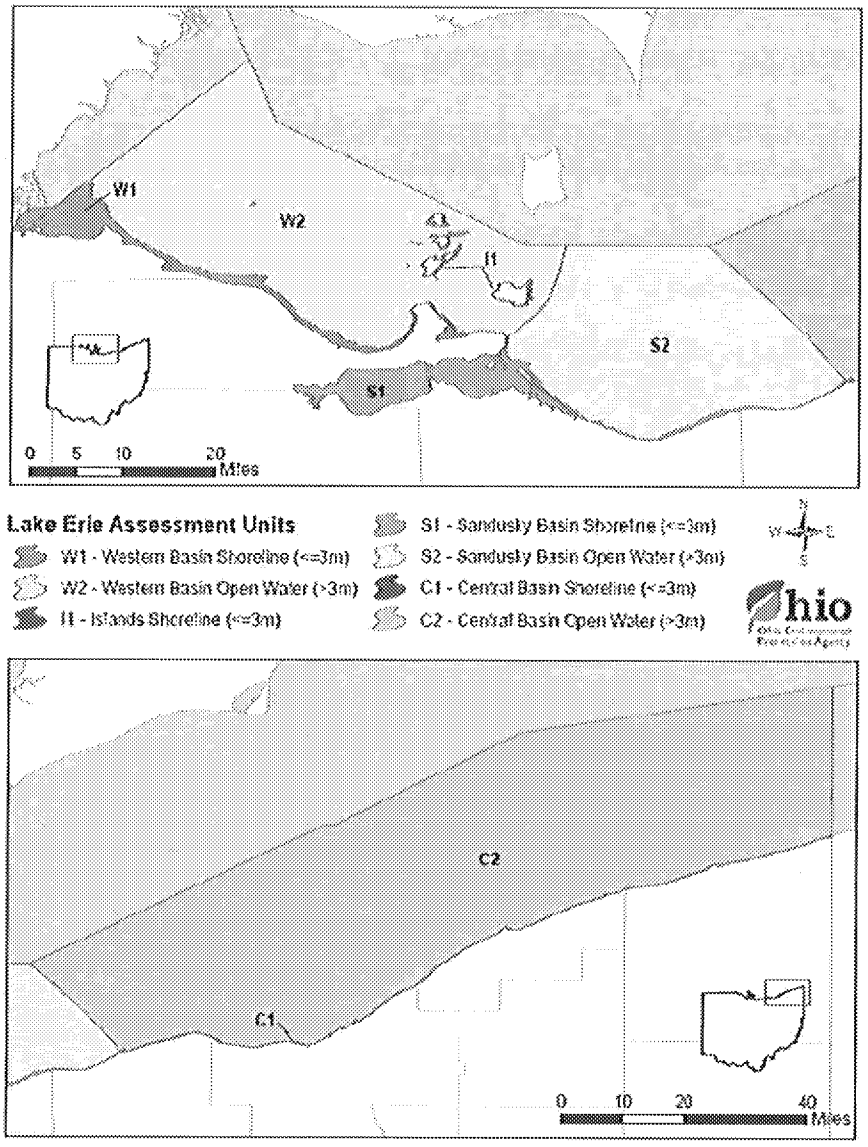

Figure F-7 — New Ohio Lake Erie AUs

Ohio included a table and map of all the sampling sites and sampling frequency for data available from entities that have Level 3 credible data or will be acceptable in the future to have Level 3 data.[22] Table F-19 in the 2018 IR also includes many types of data beyond phosphorus/nutrient and chlorophyll-a, such as phytoplankton, zooplankton, picoplankton, biovolume, species, DNA and taxa for a better understanding of the physical attributes and extent of the algal presence.

[22] 2018 IR, Figure F-8, p. F-30, Table F--19, p. F-31-33.

For the 2018 IR, Ohio EPA used its narrative standards to determine RU impairment due to algae. Ohio EPA narrative water quality standards found in OAC §3745-1-04 state that all surface waters be:

> *(D) Free from substances entering the waters as a result of human activity in concentrations that are toxic or harmful to human, animal or aquatic life or are rapidly lethal in the mixing zone.*
> *(E) Free from nutrients entering the water as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae.*

In order to have a quantitative and objective method for assessing attainment with these narrative water quality standards, metrics were developed by Ohio EPA in consultation with the Ohio State University Sea Grant Program, the University of Toledo, Bowling Green State University and NOAA. Satellite imagery from NOAA had been generated in the recent past (using the Moderate Resolution Imaging Spectroradiometer – MODIS), and values were determined based on targets developed under Annex 4 of the GLWQA.[23] The determination of attainment of the narrative water quality standard is based on two algal measurements:

- algal bloom not to exceed that which occurred in 2004 or 2012 (based on linkage with phosphorus loading); and
- algal cell count not to exceed 20,000 cells/ml (based on higher likelihood that cyanobacteria cell count would produce *Microcystis* blooms).

Related to quantifying the extent of the bloom, Ohio EPA stated:

> To account for the way that algal blooms shift in time and space in a large water body like the western basin, the method developed is as follows:
> • In each 10-day frame, an exceedance means that a bloom with greater than 20,000 cells/mL covers (is present in) more than 30 percent of the western basin open water unit area
> • If more than three 10-day frames have an exceedance in one year (July-Oct.), then that year exceeds the goal (is above the threshold target of the 2004 and 2012 blooms under Annex 4 of the GLWQA)
> • Because of the year-to-year variation, if any two or more years in a rolling six-year window exceeds the goal (is above the threshold target of the 2004 and 2012 blooms under Annex 4 of the GLWQA) then the unit is impaired.... The threshold of 30 percent coverage is based on an examination of the bloom coverage in Lake Erie's western basin since 2002 and which blooms were considered to meet the Annex 4 target severity index (the Target Bloom in Figure F-9). Severity Index (SI) is the measure of the peak bloom biomass over a 30day period (in each year, whichever 30-days captured/represents the most biomass in that year).[24]

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[23] Recommended Phosphorus Loading Targets for Lake Erie, Annex 4 Objectives and Targets Task Team Final Report to the Nutrients Annex Subcommittee (May 11, 2015, available at https://www.epa.gov/sites/production/files/2015-06/documents/report-recommended-phosphorus-loading-targets-lake-erie-201505.pdf.
[24] 2018 IR, pp. F-34, 35.

For quantification of the cell count, Ohio EPA stated[25]:

> Within each 10-day frame, an average percent coverage by a bloom at 20,000 cell/mL or greater was calculated for the western basin open water assessment unit (W2 in Figure F-7). In the western basin, blooms typically begin developing by July 22 and peak between August 10 and September 18 (Wynne and Stumpf, 2015). The 10-day time frames used in the assessment method are:
>
> July 1 – July 10 Aug. 30 – Sept. 8
> July 11 – July 20 Sept. 9 – Sept. 18
> July 21 – July 30 Sept. 19 – Sept. 28
> July 31 – Aug 9 Sept. 29 – Oct. 8
> Aug. 10 – Aug. 19 Oct. 9 – Oct. 18
> Aug. 20 – Aug. 29 Oct. 19 – Oct. 31

The results from the methodology yielded a finding of impairment as shown below in Table F-20 from the 2018 IR.

Table F-20 — The number of 10-day time frames exceeding the 30 percent coverage threshold (with 20,000 cells/mL or greater) in the western basin open water unit for each year beginning in 2012.

	≥30% coverage at ≥20,000 cell/mL	
Year	10-day frames exceeding	total frames
2012	2	12
2013	10	11
2014	6	12
2015	9	11
2016	5	10
2017	7	11

Section G of the 2018 IR: Evaluating Beneficial Use – Aquatic Life Use (ALU).

ALU scores overall are summarized below, using data from 2003-2016:

- WAU sites achieving full attainment increased from 59.3% to 61.8% for the HUC 12 assessments.
- Larger River Assessment Unit (LRAU) miles achieving full attainment was almost unchanged from 87.4% to 87.3%.
- LEAU sites in full attainment increased to 17.0% from 13.3% in the last listing cycle, but for the first time included the Sandusky Bay shoreline, defined as the area between the Central and Western Basin shorelines, as impaired for ALU.

Ohio also provided a breakdown of attainment in watersheds based on watershed size, subcategories of ALU such as Exceptional Warmwater Habitat (EWH) through Limited

[25] 2018 IR, p. F-35.

Resource Waters (LRW), and the top five prevalent causes of ALU impairment (siltation/sedimentation, habitat modification, nutrient enrichment, organic enrichment, and hydromodification).[26]

Lake Erie sampling included 131 fish community collections at 47 sites from 2011-2016. The current cycle impairment values showed that of the 47 sites, only nine are fully attaining the designated EWH ALU. This assessment includes the new assessment units for Lake Erie. Ohio compared recent data collected in 2011-2016 and other electrofishing results from the 1900s and early 2000s, and in general did not find a great difference in medians and ranges in the Index of Biological Integrity (IBI) and Modified Index of Well-Being (MIwb) indices. The IR stated that the largest changes were linked to Lake Erie Island shoreline sites, but that the results are not conclusive due to the small sample sizes. The IR observed that there appears to be a significant change in the proportion of exotic species to native species (i.e. changing the original biotic community).

A breakdown of results reflects the following site attainment status for each of the LEAUs (fish community assessments).

AUID	AU Name	# Sites	# Full	# Partial	# Non
041202000201	Lake Erie Western Basin Shoreline (including Maumee Bay)	9	3	0	6
041202000301	Lake Erie Western Basin Open Water	0	0	0	0
041202000101	Lake Erie Islands Shoreline	4	0	1	3
041202000202	Lake Erie Sandusky Basin shoreline	14	5	5	4
041202000302	Lake Erie Sandusky Basin open water	0	0	0	0
041202000203	Lake Erie Central Basin shoreline	20	1	5	14
041202000303	Lake Erie Central Basin open water	0	0	0	0

<u>Section H of the 2018 IR: Evaluating Beneficial Use: Public Drinking Water Supply.</u>

Attainment determinations for the PDWS Use are based on nitrate, pesticide, other contaminants, algal cyanotoxins, and *Cryptosporidium* indicators. Ohio EPA measures both ambient and treated water collected from 2010 through October 2017.

- For the 2018 IR, Ohio has assessed seven and listed six of the LEAUs of the Lake Erie Shoreline, Islands, and Open Waters assessment units for PDWS use impairment (the seventh AU is not used for public drinking water supply). The AUs are impaired for PDWS use due to microcystin levels measured above threshold values of 1 µg/L. Details of the water quality data and locations of the communities are in Table H-2 in the 2018 IR.[27]
- Western Basin Shoreline – two public water systems (PWS) had at least two raw water sample microcystin exceedances.
- Western Basin Open Waters – four PWS systems had at least two raw water sample microcystin exceedances.

[26] 2018 IR p. G-12.
[27] 2018 IR, pp. H-12 to H-17.

- Lake Erie Islands Shoreline – three PWS had at least two raw water sample microcystin exceedances.
- Sandusky Basin Shoreline – one PWS had a least two raw water sample microcystin exceedances.
- Sandusky Basin Open Waters – two PWS had a least two raw water sample microcystin exceedances.
- Central Basin Open Waters – four PWS had at least two raw water sample microcystin exceedances.

Outside of Lake Erie, new PDWS impairment determinations were included for other waterbodies due to microcystin, cylindrospermopsin, and saxitoxin exceedances (Table H-2).

Section I of the 2018 IR: Considerations for Future Lists.

Ohio updated information regarding the assessment of Lake Erie, including samples collected and a map of sampling sites from the University of Toledo and the Ohio State University/Stone Laboratory.[28] Future actions toward assessment and listing of LEAUs are in alignment with ecosystem objectives for Lake Erie as described in the GLWQA. The sampling of open waters is funded to supplement other existing data used for assessment and potential listing as well as to include four sites in Sandusky Bay for the next two years. Entities will work with Ohio EPA to ensure the data are credible Level 3, to be used in conjunction with satellite imagery from NOAA, to provide a comprehensive assessment method for algal blooms in the open waters for future 303(d) lists, especially to monitor and quantify areal extent and microcystin metrics. NOAA continues to collect data at seven sites in Ohio waters, and the Northeast Ohio Regional Sewer District collects data at eight sites in the Central Basin. Ohio EPA indicates that there will be ongoing collaboration amongst Ohio EPA and state, federal, and local partners and universities in sampling as well as refining assessment methodology.

[28] 2018 IR, p. I-20.

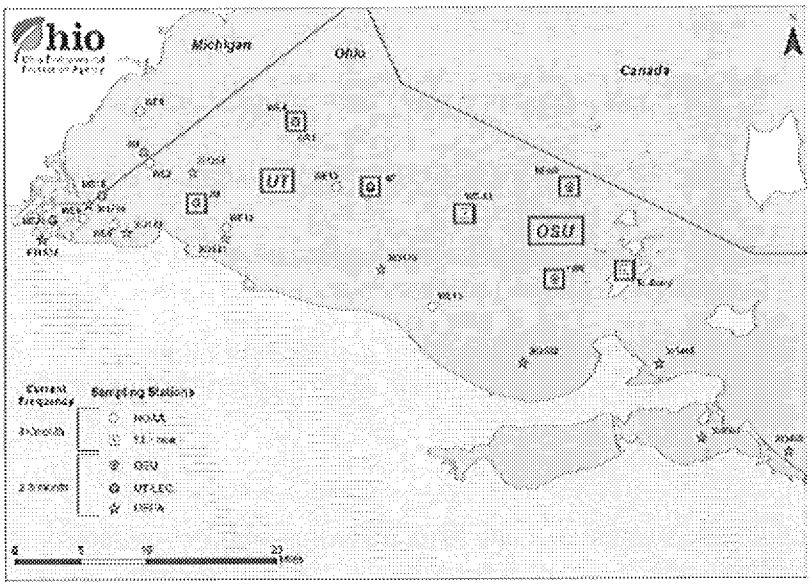

Figure J-1 — Supplemental weekly sampling locations for chlorophyll and microcystin; sampled by University of Toledo and the Ohio State University/Stone Laboratory (boxed sites) researchers in 2017.

Section J of the 2018 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 program and schedule for TMDL development and monitoring. Table J-1 below shows the attainment and listing categories. The 2018 IR includes a new listing category 5p, for protection/preservation of threatened waters, primarily for nutrients.

Table J-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[3] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[4]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

Priority Ranking and Targeting

Ohio has included a discussion of its prioritization process for TMDL development in Sections C and J of the IR, which uses a points-based system that considers the "presence and severity of Human Health impairment, Recreation Use impairment, Public Water Supply impairment and Aquatic Life Use impairment."[29]

Section J2 describes how Ohio increased the priority of the impaired AUs. Extra priority points are given for:

- social factors (high use recreational waters, drinking water supply for large populations, sustained involvement by local groups or government);
- value added (whether a TMDL offers the best way to achieve water quality);
- implemented projects/approved watershed plan;
- alternatives more timely than a TMDL;
- regulatory authority over sources; and,
- other factors (pending enforcement, Corps modeling of a reservoir, local or state strategy such as new rules for home sewage treatment systems).

EPA agrees that, as to the WQLSs included on the 2018 Section 303(d) list, OEPA has satisfied the requirement to submit a priority ranking consistent with EPA's regulations.

Figure J-2 below reflects changes from previous IRs with the addition of the "Recreation LEAUs" that apply to the Lake Erie algal impairments, in addition to the previous recreational use impairments due to excess bacteria impacting primary and secondary contact in WAUs and LWAUs.

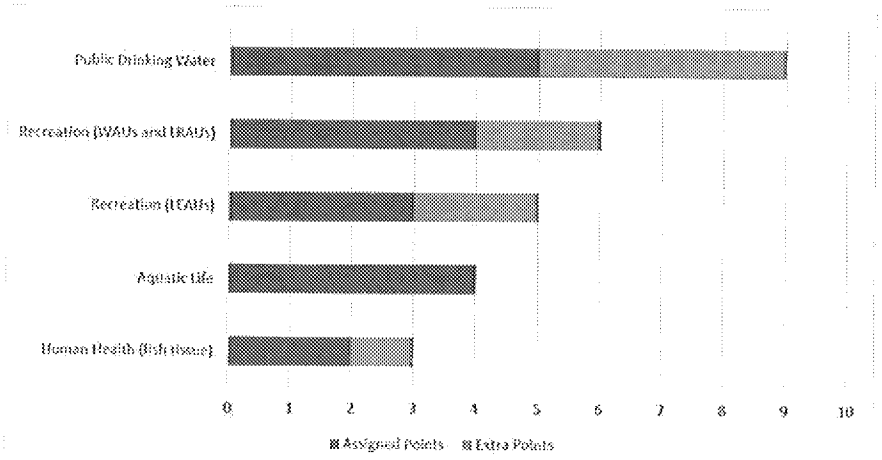

Figure J-2 — Priority points assigned based on use impairment or other factors (extra points).

[29] 2018 IR, p. C-29.

Ohio used a point system in Section J2 of the IR to assign priority to the Lake Erie Assessment Units. That section also discusses how Ohio is developing TMDLs for Lake Erie tributaries as well as many other actions for Lake Erie outlined in Section J3. Lake Erie impaired waters are assigned a low priority for Ohio EPA-initiated TMDLs. As Ohio acknowledges in Section J4, TMDLs are "need[ed]" (i.e. required) for the Lake Erie Assessment Units so long as they remain on the State's 303(d) list. However, states have "considerable flexibility" in deciding when to develop a TMDL based upon the circumstances, particularly for segments that have only recently been added to the list.[30] Furthermore, EPA has explained that "[i]n some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the applicable standard is met)."[31] And so, if efforts such as those described in Section J3 result in the attainment of water quality standards prior to the development of a TMDL, then Ohio may remove those impaired segments from its 303(d) list and a TMDL will no longer be required. But as Ohio EPA observes, where its current efforts to reduce nutrient pollution into Lake Erie, including TMDL development for the Lake's tributaries, are not sufficient to achieve standards, "Ohio will be working with U.S. EPA and other partners to determine next steps."[32] EPA expects that under those circumstances such "next steps" would include TMDL development for the Lake Erie Assessment Units directly.

Ohio EPA also received comments from the public that it should prioritize implementation of TMDLs for the Western Basin of Lake Erie, for either the waters of the Lake and/or the Western Lake Erie watersheds. In response, Ohio EPA described its plans for TMDL development in the near term, including its prioritization of TMDLs for the western basin tributaries, and indicated it will evaluate the need to update older TMDLs in its administrative planning process. The State also referenced the explanation in the IR regarding why a TMDL is not being pursued for the Lake immediately, and that it clearly indicates the western basin load reductions are a priority for the agency and the State. EPA finds these responses to be reasonable, and concludes that Ohio EPA has satisfied the requirement to submit a priority ranking for Lake Erie consistent with the regulations at 40 C.F.R. §130.7(b)(4).

Addition and Removal of Waters from the 303(d) List

Section J of the 2018 IR describes the delisting or addition of waters from the 2016 303(d) list. Table J-5 below shows both delisting and listing of new waters in Ohio's 2018 303(d) list. The new recreational use additions to the 303(d) list greatly increased from 68[33] to 261 in WAUs.

[30] EPA's Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act (July 29, 2005), p. 63.
[31] Ibid., p. 57.
[32] 2018 IR, p. J-12.
[33] Compared to Table J-5 in the 2016 IR.

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

	Number of AUs			
	Watershed	Lake Erie	Lake Erie	Total
Delistings (Remove from 303(d) list)				
Human Health (fish tissue)	15	0	0	15
Recreation	37	1	0	38
Aquatic Life	76	2	0	78
Public Drinking Water Supply	1	0	0	1
Total	130	3	0	132
New Listings (Add to 303(d) list)				
Human Health (fish tissue)	21	0	0	21
Recreation	261	3	0	264
Aquatic Life	31	0	0	31
Public Drinking Water Supply	11	0	2	13
Total	326	3	2	329

Ohio removed waters from its 303(d) list because of 1) a flaw in original listing; 2) new data showing that the waters are meeting the WQS; or 3) new AUs.[34] In evaluating the reasonableness of the State's decision to remove these waters, EPA has evaluated the State's delisting rationale, and information made available to the public during the public notice and comment period, and concludes that the State has demonstrated good cause for removing these waters.

Short term schedule

The 2018 IR included Ohio's short-term schedule for TMDL development for all waters on the State's Category 5 list in Table J-13 of Section J.[35] The TMDLs are expected to be completed in 2019.

EPA reviewed the State's identification of WQLSs targeted for TMDL development and concludes that the State has specifically identified waters targeted for TMDL development in the next two years as required by 40 C.F.R. §130.7(b)(4).

Long term schedule

The 2018 IR discussed Ohio's long-term schedule for TMDL development for all waters on the State's Category 5 list of impaired waters. Because Ohio has had some delay in its submittal of TMDLs due to the court decision referenced above, Ohio is committing staff resources to reduce the resultant backlog of TMDLs, and less frequent waterbody field monitoring events are planned for the near future, to allow the TMDL report backlog to be reduced.

[34] 2018 IR, Tables J-5, J-6, J-7, J-8, J-9 and J-10, pp. J-21-25.
[35] 2018 IR, Section J, Table J-13, p. J-33.

Section L of the 2018 IR: Summary Tables of Waterbody Conditions; Lists of Prioritized Impaired Waters; and Monitoring and TMDL Schedules

This Section includes the waters included on Ohio's 2018 impaired waters list. The most significant change in the amended 2016 IR was the addition of the last three AUs in the table below for the open waters of Lake Erie. These AUs are included in the 2018 IR. The 2018 IR has a total of seven Lake Erie AUs due to the addition of the Sandusky Shoreline, which was previously part of the Western Basin Shoreline AU.

Section L3, Status of Lake Erie Assessment Units							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recreation	Aquatic Life	PWS Supply	Priority Points
041202000101	Lake Erie Islands Shoreline (≤3m)	4.99	5	5	5	5	14
041202000201	Lake Erie Western Basin Shoreline (≤3m)	47.88	5	5	5	5	17
041202000202	Lake Erie Sandusky Basin Shoreline (≤3m)	68.01	5	5	5	5	16
041202000203	Lake Erie Central Basin Shoreline (≤3m)	13.39	5	5	5	0	9
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
041202000302	Lake Erie Sandusky Basin Open Water (>3m)	361.71	3i	3	3	5	5
041202000303	Lake Erie Central Basin Open Water (>3m)	2544.98	3i	3	3	5	5

Conclusion

After full review and evaluation of the information presented by the State in its 2018 submittal, EPA is approving the waters identified in Section L4 of Ohio's 2018 IR as impaired waters still requiring TMDLs. EPA is taking action on the list of Category 5 waters for which available data and/or information indicate that at least one designated use is not being supported or is threatened, and for which a TMDL is still required. Although the information was considered in EPA's review, EPA is not taking any action to approve or disapprove waters identified in Ohio's 2018 IR in categories 1, 2, 3, and 4 in this decision, which does not affect EPA's approval of Ohio's 2018 list of impaired waters still requiring TMDLs.

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JOHN R. KASICH
GOVERNOR
STATE OF OHIO

Executive Order 2018-09K

Taking Steps to Protect Lake Erie

WHEREAS, The Ohio Environmental Protection Agency ("OEPA") designated the open waters of the Western Basin of Lake Erie as Impaired in the 2018 Ohio Integrated Water Quality Monitoring and Assessment Report" pursuant to Section 303(d) of the Federal Water Pollution Control Act; and

WHEREAS, the Great Lakes Water Quality Agreement (GLWQA) Annex 4 has established the Total Phosphorus (TP) target load for the Maumee River at Waterville to be 860 metric tons (MT); and

WHEREAS, the 2017 Watershed Monitoring Report based on monitoring data provided by USGS indicates a Maumee River 2017 Total Phosphorus load of 1800 MT or 113% above the Annex 4 target, exceeding the Annex 4 target three of the last four years; and

WHEREAS, the OEPA through water quality monitoring data has identified specific watersheds within the Maumee River Basin which exceed by two to three times the Annex 4 TP target; and

WHEREAS, the State of Ohio recognizes that a "nutrient is a nutrient" regardless of source and has adopted the Ohio Domestic Action Plan required by the GLWQA as the implementation plan for meeting the Annex 4 nutrient reduction goals, recommends a combination of voluntary, incentive and regulatory actions will be necessary to achieve the Annex 4 goals; and

WHEREAS, the Director of the Ohio Department of Agriculture ("ODA") is empowered by Section 939.02 of the Revised Code to adopt administrative rules that establish technically feasible and economically reasonably standards to achieve a level of management and conservation practices in farming operations that will abate wind or water erosion of the soil and abate the degradation of the waters of the state by residual farm products, manure, or soil sediment, including attached substances, and establish criteria for determination of the acceptability of such management and conservation practices; and

WHEREAS, to implement the standards necessary to achieve the management and conservation practices established above, the Director of ODA is authorized pursuant to Section 901:13-1-20 of the Ohio Administrative Code ("OAC") to designate a watershed in distress, though such designation must be consented to by the Ohio Soil and Water Conservation Commission ("the Commission"); and

WHEREAS, in so designating a watershed in distress, the Director of ODA can "set requirements for the storage, handling and land application of manure; and/or the control of the erosion of sediment and substances attached thereto; and associated nutrient management plans for land and operations within the designated watershed boundaries[.]"

NOW THEREFORE, I, John R. Kasich, Governor of the State of Ohio, by virtue of the authority vested in me by the Constitution and laws of the State of Ohio, do hereby order and direct that:

1. The Director of ODA consider whether it is appropriate to seek the consent of the Ohio Soil and Water Conservation Commission to designate the following Hydrologic Unit Code (HUC) watersheds or portions of watersheds in the Maumee River Basin as watersheds in distress due to increased nutrient levels resulting from phosphorus attached to soil sediment:

    a. Platter Creek Watershed (HUC 041000050206);
    b. Little Flat Rock Creek Watershed (HUC 041000071207);
    c. Little Auglaize River Watershed (HUC 0410000706-707-708);
    d. Eagle Creek Watershed (HUC 041000080301-02);
    e. Auglaize River (HUC 04100007);
    f. Blanchard River (HUC 04100008);
    g. St. Mary's (HUC 04100004);
    h. Ottawa River (HUC 0410000703-704-705).

2. If the Ohio Soil and Water Conservation Commission consents to the designations contemplated above, ODA, the Ohio Department of Natural Resources ("ODNR"), and OEPA should recommend a rule package that establishes the following for watersheds so designated due to increased nutrient levels resulting from phosphorus attached to soil sediment:

    a. Nutrient management requirements for all nutrient sources;
    b. Development of associated management plans for agricultural land and operations within the designated watershed boundaries;
    c. Requirements for the storage, handling, land application, and control of residual farm products, manure and erosion of sediment and substances attached thereto within the designated watershed boundaries.

ED_002091_00008591-00002

I signed this order on _____, 2018, in Columbus, Ohio and it will not expire unless it is rescinded.

_____
John R. Kasich, Governor

ATTEST:

_____
Jon Husted, Secretary of State

ED_002091_00008591-00003

JOHN R. KASICH
GOVERNOR
STATE OF OHIO

Executive Order 2018-09K

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WHEREAS, the OEPA through water quality monitoring data has identified specific watersheds within the Maumee River Basin which exceed by two to three times the Annex 4 TP target; and

WHEREAS, the State of Ohio recognizes that a "nutrient is a nutrient" regardless of source and has adopted the Ohio Domestic Action Plan required by the GLWQA as the implementation plan for meeting the Annex 4 nutrient reduction goals, recommends a combination of voluntary, incentive and regulatory actions will be necessary to achieve the Annex 4 goals; and

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WHEREAS, to implement the standards necessary to achieve the management and conservation practices established above, the Director of ODA is authorized pursuant to Section 901:13-1-20 of the Ohio Administrative Code ("OAC") to designate a watershed in distress, though such designation must be consented to by the Ohio Soil and Water Conservation Commission ("the Commission"); and

WHEREAS, in so designating a watershed in distress, the Director of ODA can "set requirements for the storage, handling and land application of manure; and/or the control of the erosion of sediment and substances attached thereto; and associated nutrient management plans for land and operations within the designated watershed boundaries[.]"

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    c. Little Auglaize River Watershed (HUC 0410000706-707-708);
    d. Eagle Creek Watershed (HUC 041000080301-02);
    e. Auglaize River (HUC 04100007);
    f. Blanchard River (HUC 04100008);
    g. St. Mary's (HUC 04100004);
    h. Ottawa River (HUC 0410000703-704-705).

2. If the Ohio Soil and Water Conservation Commission consents to the designations contemplated above, ODA, the Ohio Department of Natural Resources ("ODNR"), and OEPA should recommend a rule package that establishes the following for watersheds so designated due to increased nutrient levels resulting from phosphorus attached to soil sediment:

    a. Nutrient management requirements for all nutrient sources;
    b. Development of associated management plans for agricultural land and operations within the designated watershed boundaries;
    c. Requirements for the storage, handling, land application, and control of residual farm products, manure and erosion of sediment and substances attached thereto within the designated watershed boundaries.

ED_002091_00008610-00002

I signed this order on _____, 2018, in Columbus, Ohio and it will not expire unless it is rescinded.

_____
John R. Kasich, Governor

ATTEST:

_____
Jon Husted, Secretary of State

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JOHN R. KASICH
GOVERNOR
STATE OF OHIO

Executive Order 2018-09K

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WHEREAS, the 2017 Watershed Monitoring Report based on monitoring data provided by USGS indicates a Maumee River 2017 Total Phosphorus load of 1800 MT or 113% above the Annex 4 target, exceeding the Annex 4 target three of the last four years; and

WHEREAS, the OEPA through water quality monitoring data has identified specific watersheds within the Maumee River Basin which exceed by two to three times the Annex 4 TP target; and

WHEREAS, the State of Ohio recognizes that a "nutrient is a nutrient" regardless of source and has adopted the Ohio Domestic Action Plan required by the GLWQA as the implementation plan for meeting the Annex 4 nutrient reduction goals, recommends a combination of voluntary, incentive and regulatory actions will be necessary to achieve the Annex 4 goals; and

WHEREAS, the Director of the Ohio Department of Agriculture ("ODA") is empowered by Section 939.02 of the Revised Code to adopt administrative rules that establish technically feasible and economically reasonably standards to achieve a level of management and conservation practices in farming operations that will abate wind or water erosion of the soil and abate the degradation of the waters of the state by residual farm products, manure, or soil sediment, including attached substances, and establish criteria for determination of the acceptability of such management and conservation practices; and

WHEREAS, to implement the standards necessary to achieve the management and conservation practices established above, the Director of ODA is authorized pursuant to Section 901:13-1-20 of the Ohio Administrative Code ("OAC") to designate a watershed in distress, though such designation must be consented to by the Ohio Soil and Water Conservation Commission ("the Commission"); and

WHEREAS, in so designating a watershed in distress, the Director of ODA can "set requirements for the storage, handling and land application of manure; and/or the control of the erosion of sediment and substances attached thereto; and associated nutrient management plans for land and operations within the designated watershed boundaries[.]"

NOW THEREFORE, I, John R. Kasich, Governor of the State of Ohio, by virtue of the authority vested in me by the Constitution and laws of the State of Ohio, do hereby order and direct that:

1. The Director of ODA consider whether it is appropriate to seek the consent of the Ohio Soil and Water Conservation Commission to designate the following Hydrologic Unit Code (HUC) watersheds or portions of watersheds in the Maumee River Basin as watersheds in distress due to increased nutrient levels resulting from phosphorus attached to soil sediment:

    a. Platter Creek Watershed (HUC 041000050206);
    b. Little Flat Rock Creek Watershed (HUC 041000071207);
    c. Little Auglaize River Watershed (HUC 0410000706-707-708);
    d. Eagle Creek Watershed (HUC 041000080301-02);
    e. Auglaize River (HUC 04100007);
    f. Blanchard River (HUC 04100008);
    g. St. Mary's (HUC 04100004);
    h. Ottawa River (HUC 0410000703-704-705).

2. If the Ohio Soil and Water Conservation Commission consents to the designations contemplated above, ODA, the Ohio Department of Natural Resources ("ODNR"), and OEPA should recommend a rule package that establishes the following for watersheds so designated due to increased nutrient levels resulting from phosphorus attached to soil sediment:

    a. Nutrient management requirements for all nutrient sources;
    b. Development of associated management plans for agricultural land and operations within the designated watershed boundaries;
    c. Requirements for the storage, handling, land application, and control of residual farm products, manure and erosion of sediment and substances attached thereto within the designated watershed boundaries.

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I signed this order on _____, 2018, in Columbus, Ohio and it will not expire unless it is rescinded.

_____
John R. Kasich, Governor

ATTEST:

_____
Jon Husted, Secretary of State

ED_002091_00008696-00003

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

INTRODUCTION AND SUMMARY

Defendants oppose Plaintiffs' Motion for Leave to File Supplemental Complaint, Doc. 36, because both of Plaintiffs' proposed supplemental counts fail to state a claim upon which relief may be granted. First, both counts seek to challenge EPA's approval of Ohio's 2016 list of impaired waters, but EPA's July 9, 2018, approval of Ohio's 2018 list supersedes the 2016 list and moots Plaintiffs' claims. Second, Plaintiffs' proposed supplemental count one, a claim under the Administrative Procedure Act ("APA"), fails to state a claim because Plaintiffs fail to identify a final agency action. Although EPA's approval of Ohio's 2016 list is a final agency action as to the listing of impaired waters, Plaintiffs are not challenging that decision. Instead, Plaintiffs argue that Ohio decided it would never submit a total maximum daily load ("TMDL") for western Lake Erie and argue that EPA approved that purported "no TMDL" decision. In fact, Ohio made no such decision, nor did EPA. Third, Plaintiffs' proposed supplemental count two, pled in the alternative as a violation of a nondiscretionary duty, fails to state a claim because it, too, rests of the false premise that

Ohio decided it would never submit a TMDL for western Lake Erie. Because Ohio has not "constructively submitted" no TMDL for western Lake Erie, any statutory duty to review that "constructive submission," should such a duty exist, has not been triggered.

EPA further cross-moves for summary judgment on the existing Complaint, which challenges an action – EPA's May 19, 2017, approval of Ohio's 2016 Section 303(d) List absent the inclusion of the open waters of Lake Erie – that has long since been reversed through subsequent action by EPA and the State and is therefore completely moot.

BACKGROUND

A. Statutory and Regulatory Background

As part of the Clean Water Act's ("CWA") cooperative state/federal framework for addressing water quality, each state must identify waters within its boundaries for which existing pollution controls are not stringent enough to meet applicable water quality standards. 33 U.S.C. § 1313(d)(1). Such waters are known as "water quality limited segments" pursuant to 40 C.F.R. § 130.2(j) or colloquially as "impaired

waters." Every two years, a state must submit a list of water quality limited segments still requiring TMDLs. 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(d)(1). Because the list is required by Section 303(d) of the CWA, 33 U.S.C. § 1313(d), it is commonly referred to as the "Section 303(d) list."

Each state must establish a priority ranking for the water quality limited segments on its Section 303(d) list, taking into account the severity of pollution and the uses to be made of those waters. 33 U.S.C. § 1313(d)(1)(A). States must also identify among those waters which ones are targeted for TMDLs within the next two years. 40 C.F.R. § 130.7(b), (d). States are required to establish TMDLs for each water quality limited segment on their Section 303(d) lists, in accordance with the priority ranking. 33 U.S.C. § 1313(d)(1)(C); 40 C.F.R. § 130.7(c)(1). TMDLs are plans that set the quantity of a pollutant that may be introduced into a receiving water without exceeding applicable water quality standards, taking into account seasonal variations and an adequate margin of safety. 33 U.S.C. § 1313(d)(1)(C). Calculations to establish TMDLs are subject to public review. 40 C.F.R. §

130.7(c)(1)(ii).

Ohio, like many states, combines its Section 303(d) list with a water quality report and submits both together as an "integrated report." In *Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017), the court erroneously stated that states identify their impaired waters *and* establish their TMDLs by submitting these integrated reports. 266 F. Supp. 3d at 176.[1] That misreads the statute, regulations, and EPA's guidance. Section 303(d) lists and integrated reports on the one hand, and TMDLs on the other, are distinct and very different documents and actions. Section 1313(d)(1)(A) requires states to "identify" impaired waters; section 1313(d)(1)(C) then requires states to "establish" for those identified waters a TMDL.

EPA regulations carry forward this distinction. In 40 C.F.R. § 130.7, subsection (b) addresses the "identification and priority setting for water quality-limited segments still requiring TMDLs," *i.e.*, the Section 303(d) list, while subsection (c) addresses the TMDLs

[1] *See also* April 11, 2018, Order, Doc. 29 at 8.

themselves. Thus, while an integrated report typically contains the Section 303(d) list, including a priority ranking of water quality limited segments still requiring TMDLs and the state's schedule for which TMDLs will be developed over the next two years, the TMDLs themselves are not part of the integrated report (or the Section 303(d) list), nor are they typically submitted with that report.

The timing provisions for Section 303(d) lists and for TMDLs are also distinct. The statute sets a deadline for the initial list of "waters identified" and the initial "loads established" based on when EPA first identifies relevant pollutants under Section 304(a)(2)(D) of the Act, but otherwise Section 303(d) lists and TMDLs are due "from time to time" under the statute. 33 U.S.C. § 1313(d)(2). EPA regulations require states to submit Section 303(d) lists every two years, but there is no similar regulatory deadline for states to submit additional TMDLs. 40 C.F.R. § 130.7(d)(1). Instead, TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." *Id.* There is no statutory or regulatory timeframe, deadline, or other restriction on

the timing for states to submit TMDLs, or for states and EPA to determine schedules.

Therefore, as explained by longstanding EPA guidance, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, at 63 (July 29, 2005) ("2006 Assessment Guidance"), available at https://www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf.[2] This guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57. EPA has also explained that "[i]n some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the

[2] The 2006 Assessment Guidance focuses on how to assess, categorize, and report on water quality attainment and supporting data and information. 2006 Assessment Guidance at 6. It does not address how to develop or submit TMDLs.

applicable standard is met)." *Id.*

Once a state submits a Section 303(d) list, or a TMDL, EPA must approve or disapprove the submission within 30 days. 33 U.S.C. § 1313(d)(2). If EPA disapproves a Section 303(d) list, EPA must identify the water quality limited segments that should be on the list, and must do so within 30 days after the date of disapproval. *Id.* EPA must then "promptly issue a public notice" and take comment on the water quality limited segments so identified. 40 C.F.R. § 130.7(d)(2). Finally, after considering the comments received, EPA must then make any appropriate revisions to the list. Similarly, if EPA disapproves a state TMDL, EPA must establish its own TMDL within 30 days after EPA's disapproval. *Id.*

If EPA approves a Section 303(d) list or disapproves a list and identifies waters for the state or approves or disapproves a TMDL that has been publicly noticed, those actions are final agency actions that an interested party may challenge under the Administrative Procedure Act. If EPA fails to act, an interested party can sue EPA for its failure to perform "any act or duty under this chapter which is not

discretionary with [EPA]." 33 U.S.C. § 1365(a)(2). However, no such action may be commenced "prior to sixty days after the plaintiff has given notice of such action to the Administrator [of EPA]." *Id.* § 1365(b)(2). EPA's regulations specify the form and content of the required notice. *See, e.g.*, 40 C.F.R. § 135.2(a)(3) (notice must be accomplished by certified mail and sent to specific recipients); 40 C.F.R. § 135.3(b) (notice must identify the statutory provision which requires the nondiscretionary action and describe with "reasonable specificity" the action taken or not taken).

B. Factual Background

Ohio submitted its 2016 integrated report (including its 2016 Section 303(d) list) on October 20, 2016. EPA approved Ohio's 2016 Section 303(d) list on May 19, 2017, but withdrew that approval on January 12, 2018. Ohio supplemented its 2016 Section 303(d) list on May 4, 2018, and EPA approved that amendment on May 10, 2018.

On June 1, 2018, Ohio submitted its 2018 integrated report (and 2018 Section 303(d) list), and on July 9, 2018, EPA approved Ohio's 2018 Section 303(d) list. In both the 2016 Section 303(d) list (as

amended and approved in May 2018) and the 2018 Section 303(d) list, Ohio listed as impaired three assessment units for the open waters of Lake Erie: the Western Basin, the Sandusky Bay area, and the Central Basin. These open water assessment units are in addition to several shoreline assessment units, including public drinking water supply intake zones, that are also identified in both reports as impaired.

ARGUMENT

Although leave to supplement a pleading "shall be freely given when justice so requires," a motion to supplement under Fed. R. Civ. P 15 should be denied if the amendment would be futile, *i.e.*, if the amendment "could not withstand a Rule 12(b)(6) motion to dismiss." *Riverview Health Institute LLC v. Medical Mutual of Ohio*, 601 F.3d 505, 520 (6th Cir. 2010) (internal citations and quotations omitted). Because neither of the proposed additional counts state a claim on which relief may be granted, the amendment would be futile and should be denied.

I. Both of Plaintiffs' Proposed New Counts Are Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Both of Plaintiffs' proposed counts fail to state a claim because

they challenge EPA's approval of Ohio's 2016 Section 303(d) list, but that list (and EPA's approval thereof) has been superseded by the 2018 list (and EPA's approval thereof). In *Blue Water Baltimore*, 266 F. Supp. 3d at 180-181, the court found that EPA's approval of a state's 2014 303(d) list superseded its approval of the preceding 2012 303(d) list, thus mooting plaintiffs' challenge to EPA's approval of the 2012 list. This Court should do the same, and hold that Ohio's 2018 Section 303(d) list, once approved by EPA, supersedes Ohio's 2016 list and moots Plaintiffs' challenges to EPA's approval of the 2016 list.

II. Plaintiffs' Proposed Count One Does Not Challenge a Final Agency Action Reviewable Under the APA.

As this Court has explained, to be "final," an agency action must mark the consummation of the agency's decisionmaking process and must determine rights or obligations from which legal consequences will flow. April 11, 2018, Order, Doc. 29, at 20-21.

EPA's approval of Ohio's 2016 Section 303(d) list, as amended, is certainly final agency action with respect to the actual listing of impaired waters, which is the subject of Plaintiffs' original complaint. However, EPA did not take any final agency action with respect to what

Plaintiffs now seek to challenge: Ohio's purported decision refusing to develop a TMDL for western Lake Erie. Contrary to Plaintiffs' arguments, there is no final agency action regarding that, for two reasons.

First, the factual predicate for Plaintiffs' argument is expressly contradicted by the one, and only, source of information on which Plaintiffs rely: Ohio's amended 2016 Section 303(d) list. Plaintiffs assert that "in that submission," *i.e.*, the amended 2016 Section 303(d) list, Ohio "refused to develop and establish a [TMDL] for the phosphorus pollution" in western Lake Erie. Pl. Mot. at 1. *See also* Pl. Mem. at 1 ("in the same submission," *i.e.*, the amended 2016 Section 303(d) list, "Ohio EPA stated that it would not develop a TMDL to address the harmful algal bloom problem.") *See also* proposed First Suppl. Compl. ¶ 18 (citing the amended 2016 list at 9, "Ohio EPA has flatly stated that it would not move forward with the development of a TMDL."); *id.* ¶ 77 (citing the amended 2016 list at 9, "Ohio EPA specifically indicated it would *not* develop a TMDL for western Lake Erie"); *id.* ¶¶ 92-93 ("in its May 4, 2018, submission," "Ohio EPA . . . has

definitively stated it will not develop a TMDL").

What Ohio EPA actually said is worth quoting in full:

> Given the complexity of the algae bloom problem, Ohio believes the best approach for solving the issues in western Lake Erie is through the collaborative process established under Annex 4 of the Great Lakes Water Quality Agreement and the Domestic Action Plans as they afford a holistic, multi-jurisdictional perspective that does not exist in a traditional TMDL process. If the current collaborative processes fail to restore the designated use attainment *we recognize that a TMDL or other approach allowed by the USEPA to address impaired waters under the CWA will ultimately be required.*

2016 Integrated Report Amendment at 9 (emphasis added).

This is not a situation where the Court must resolve an ambiguity or draw an inference. The only support offered for the key assertion underlying Plaintiffs' position in fact says the opposite of what Plaintiffs claim. Ohio has neither abandoned its obligation to produce a TMDL for western Lake Erie, nor has Ohio refused to develop a TMDL. Without this factual predicate of an express refusal to develop a TMDL, there can be no EPA action approving the alleged state refusal, as there is no refusal to approve or disapprove.

Second, even if the Court were to ignore Ohio's recognition that it might in the future develop a TMDL, and find Plaintiffs' assertion that

the lack of a current TMDL submission necessarily constitutes a refusal to do so, Plaintiffs' proposed count one is still futile because there was no final agency action regarding the purported "no TMDL" statement.

In its approval letter, EPA noted that the amended Section 303(d) list "discusses how Ohio will continue to address nutrient loadings to Lake Erie." Letter from Cathy Stepp, Regional Administrator, to Tiffani Kavalec, Chief, Division of Surface Water, Ohio EPA, May 10, 2018, at 1-2. But EPA's letter goes on to state that EPA finds that Ohio EPA's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking" under 40 C.F.R. § 130.7(b)(4). *Id.* at 2.

When EPA reviews a state's Section 303(d) list, the agency simply confirms that the state has included a priority ranking that, consistent with EPA's regulations, "tak[es] into account the severity of the pollution and uses to be made of such waters." 40 C.F.R. § 130.7(b)(4). *See* 2006 Assessment Guidance, at 63 ("EPA will review the priority ranking but will not take action to approve or disapprove it."). EPA does not weigh the relative merits of the state's ranking, and the

statute "provides no specific mechanism for reviewing this prioritization." *Sierra Club v. McLerran*, No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015). EPA's acknowledgement that Ohio did prioritize the impaired waters of Lake Erie (which Plaintiffs do not challenge) does not itself represent either the consummation of EPA's decisionmaking on whether Ohio has abandoned its obligation to produce a TMDL or represent a conclusion that determines rights or obligations or has legal consequences. In fact, Plaintiffs themselves note that EPA did not "even mention[] the State of Ohio's failure to comply with its TMDL responsibilities." Pl. Mem. at 2. Contrary to Plaintiffs' assertions, EPA's lack of reference to the absence of a submission that Ohio did not yet have any obligation to provide is not surprising. Instead, EPA simply recognized what Ohio EPA did: the state included the segments on its list of impaired waters impaired "still requiring TMDLs", 40 C.F.R. § 130.7(b)(2), and assigned a prioritization to the open waters of western Lake Erie.

Plaintiffs rely heavily on the *McLerran* case, arguing that it refutes Ohio's approach. But *McLerran* involved materially different

facts. Instead of a Section 303(d) list, in *McLerran* the state developed a draft TMDL, but finalized the document as a "Strategy" which involved the creation of a task force, and stated that it "is not currently planning to develop" a TMDL. 2015 WL 1188522 at *3. Sierra Club requested EPA to determine whether the state had abandoned the TMDL, and EPA concluded the state had not, and that the strategy and task force were "an acceptable alternative to a TMDL." *Id.* *4. The court agreed with EPA that the state had not abandoned the TMDL – a point to which we will return in the discussion of Plaintiffs' proposed count two – but found under the APA that EPA's approval of the task force was arbitrary. *Id.* *10. This separate approval document, issued in response to a specific request to determine whether a state had abandoned a specific TMDL, is materially different than the general statement at issue here, in the different context of EPA's approval of a Section 303(d) list of impaired waters. Unlike in *McLerran*, EPA's acknowledgement that Ohio's 303(d) list "discusses how Ohio will continue to address nutrient loadings to Lake Erie" is not an explicit decision on the precise question of abandonment, and is therefore not a

final agency action. The fact is that Ohio was not obligated to submit a TMDL simultaneously with its submission of its Section 303(d) list and thus EPA had no need to approve or reject that non-submission.

Because Plaintiffs cannot support their assertion that Ohio decided it will not develop any TMDL for western Lake Erie, and because EPA has not taken any final agency action regarding Ohio's statement that a TMDL "will ultimately be required," Plaintiffs' proposed count one fails to state a claim and allowing Plaintiffs to supplement the complaint would be futile.

III. Plaintiffs' Proposed Count Two Does Not Identify A Nondiscretionary Duty.

Plaintiffs' proposed count two asserts that EPA violated a nondiscretionary duty to act within 30 days because Ohio EPA allegedly decided "not to undertake development of a TMDL for western Lake Erie." Proposed Supplemental Compl. ¶ 103.

Plaintiffs' motion to add their proposed count two should be denied for their failure to follow the required process. As EPA has previously explained, such a claim requires 60-day statutory notice before filing suit, 33 U.S.C. § 1365(b)(2): this requirement cannot be

waived. Plaintiffs did not provide the requisite notice.

Even if Plaintiff had somehow satisfied that requirement, Plaintiffs' proposed count two still fails to state a claim. In their motion, Plaintiffs explain that they seek to include their proposed count two "as a protective measure" in the event that there is no final agency action "regarding Ohio EPA's decision not to submit a TMDL." Pl. Mem. at 11 n.1. Plaintiffs' proposed count two assumes no final agency action by EPA and is therefore based on the same faulty reading of Ohio's amended 2016 Section 303(d) list by assuming that a TMDL must be submitted with a 303(d) list.

Plaintiffs argue that some courts have found that a state's decision not to submit a TMDL is a "constructive submission" of "no TMDL," thereby triggering EPA's nondiscretionary duty to approve or disapprove of that "constructive submission." *See, e.g.*, Proposed Supplemental Compl. ¶ 104. For example, in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984), the court found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure may amount to the 'constructive submission' by that state of no TMDL's

[sic]." *Id.* The long passage of time – six years, in that case – "raises the possibility that the states have determined that TMDL's for Lake Michigan are unnecessary." *Id.* at 997.

Like *Scott*, most courts that have applied the constructive submission theory have looked at a state's entire TMDL program. *See, e.g., Ohio Valley Envir. Coal. v. Pruitt,* No. 17-1430, 2018 WL 3039954 (4th Cir., June 20, 2018) (in light of West Virginia's good faith efforts, "we cannot conclude that West Virginia has 'clearly and unambiguously' refused to submit TMDLs"). Plaintiffs do not assert that Ohio has failed to submit any TMDLs, but instead point to the only court decision that has considered whether a state could trigger a constructive submission by refusing to submit a single, particular TMDL: *McLerran*. That decision held that "a state's failure to prepare a particular TMDL [can] ripen into a constructive submission." 2015 WL 1188522 at *7. However, as noted above, *McLerran* found that the State of Washington had not constructively submitted no TMDL, because there were "information gaps . . . such that [the state] could not confidently issue a TMDL at any point in the near future." *Id.* at *8. In particular, the

court noted that the state "lacked sufficient scientific data and had not satisfied certain pre-submission requirements, *i.e.*, public notice and consultation." *Id.* In contrast, if a TMDL were "essentially complete and ready for submission, a last-minute pivot to an illusory alternative may indicate a decision to abandon the TMDL." *Id.*

Here, Ohio has only recently listed western Lake Erie as impaired, and Plaintiffs do not, and cannot, contend that Ohio has already developed the scientific data necessary for a TMDL, much less that Ohio has completed the required public notice requirements. Thus, even if the Court were to accept the constructive submission theory and the *McLerran* court's extension of that theory to a single TMDL, Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.

IV. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

As noted in Defendants' May 11, 2018, Status Report, Doc. 30 at 2, EPA's May 10, 2018, action approving Ohio's Section 2016 303(d) list, as amended, moots Plaintiffs' claims as pled in Plaintiffs' original complaint, to the extent the Court has jurisdiction over those claims.

See April 11, 2018, Order (Doc. 29) at 24 n.15 (citing *Anacostia Riverkeeper, Inc. v. Jackson*, 713 F. Supp.2d 50, 51 n.1 (D.D.C. 2010)). If the Court denies Plaintiffs' motion to supplement the complaint, nothing is left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should deny Plaintiffs' motion to file a supplemental complaint because neither of Plaintiffs' proposed supplemental counts state a claim upon which relief may be granted, and should grant Defendants' cross motion for summary judgment and terminate the case because EPA's approval of Ohio's amended 2016 Section 303(d) list moots Plaintiffs' original claims.

Respectfully submitted this 10th day of July 2018.

JEFFREY H. WOOD
Acting Assistant Attorney General
United States Department of Justice
Environment & Natural Resources Division

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CERTIFICATE OF SERVICE

I hereby certify that on July 10, 2018, I electronically filed the foregoing MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION TO FILE A SUPPLEMENTAL COMPLAINT AND IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
Daniel R. Dertke

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

ENVIRONMENTAL LAW AND POLICY CENTER, et al., Plaintiffs,	)	
	)	No. 17-cv-1514
v.	)	
	)	Hon. James G. Carr
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Defendants.	)	

REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT

TABLE OF CONTENTS

TABLE OF AUTHORITIES ii

INTRODUCTION AND SUMMARY 1

BACKGROUND 2

ARGUMENT 5

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie 5

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act On Ohio's Plans To Address Nutrient Pollution in Lake Erie 12

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List 13

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie 16

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment 19

CONCLUSION 20

TABLE OF AUTHORITIES

CASES

Blue Water Baltimore v. Pruitt,
266 F. Supp. 3d 174, 180-81 (D.D.C. 2017),
judgment amended, 293 F. Supp. 3d 1 (D.D.C. 2017) 14

Ohio Valley Envtl. Coalition, Inc. v. Pruitt,
893 F.3d 225 (4th Cir. 2018) 5, 6, 7

San Francisco Baykeeper v. Whitman,
297 F.3d 877 (9th Cir. 2002) 6, 11

Scott v. Hammond,
741 F.2d 992 (7th Cir. 1984) 6, 7, 11, 12

Sierra Club v. McLerran,
No. 11-cv-1759, 2015 WL 1188522
(W.D. Wash., March 16, 2015) 7, 8, 9, 10, 17, 18

STATUTES

33 U.S.C. § 1313(d)(2) 3, 6

33 U.S.C. § 1314(a)(2)(D) 3

CODE OF FEDERAL REGULATIONS

40 C.F.R. § 130.7(b)(4) 4, 17

40 C.F.R. § 130.7(d)(1) 3

FEDERAL REGISTER

57 Fed. Reg. 33,040 (July 24, 1992) 5

LEGISLATIVE HISTORY

H. R. Rep. No. 92-911 (1972) 4

INTRODUCTION AND SUMMARY

The two motions before the Court essentially ask whether Ohio has made a "constructive submission" of no TMDL for nutrient pollution in the open waters of western Lake Erie. Plaintiffs' two new proposed claims assert that Ohio has not yet begun a TMDL for the lake's open waters, but Plaintiffs have not and cannot credibly assert that Ohio has clearly and unambiguously refused to ***ever*** prepare such a TMDL, and that makes all the difference. Ohio has not refused to prepare a TMDL for the western basin of Lake Erie and indeed expressly recognizes that a TMDL is needed and may be developed in the future. Therefore, even under the most expansive expressions of the so-called constructive submission theory articulated in *McLerran* and the other cases Plaintiffs cite, Plaintiffs' proposed Count Two fails to assert the facts necessary to state a claim that Ohio has constructively submitted no TMDL.

Plaintiffs also assert that when EPA approved Ohio's 2016 Section 303(d) list of impaired waters, EPA also approved certain statements Ohio made in its 2016 Integrated Report. Although EPA certainly

acknowledged Ohio's statements regarding the State's plans to address nutrient pollution in the lake's open waters, EPA neither approved nor disapproved them. Instead, EPA followed its regulations, which require EPA to approve or disapprove of the actual list of impaired waters still requiring TMDLs and the inclusion of priority rankings, *i.e.*, Ohio's Section 303(d) list. EPA has no formal role in reviewing the other parts of a state's Integrated Report. Plaintiffs' proposed Count One therefore fails to state a claim because Plaintiffs cannot point to any judicially reviewable final agency action regarding Ohio's plans to reduce nutrient pollution.

Finally, even if the Court finds that EPA did take final agency action regarding Ohio's plans, EPA's approval of Ohio's 2018 Section 303(d) list supersedes its approval of Ohio's 2016 list, which moots Plaintiffs' claim.

BACKGROUND

As we explained in our opening memorandum, ECF No. 39, the CWA sets a deadline for states to submit their initial TMDLs and Section 303(d) lists based on when EPA first identifies relevant

pollutants under 33 U.S.C. § 1314(a)(2)(D). After that, the statute requires states to submit subsequent Section 303(d) lists and TMDLs "from time to time." 33 U.S.C. § 1313(d)(2). While EPA's regulations specify that states must submit Section 303(d) lists every two years, *see* 40 C.F.R. § 130.7(d)(1), there is no similar regulatory requirement for TMDLs. Nor is there any requirement for states to submit additional TMDLs with their Section 303(d) list or as part of an integrated report. Instead, EPA's regulations simply provide that TMDLs "shall continue to be submitted to EPA for review and approval. Schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." 40 C.F.R. § 130.7(d)(1). Thus, there is no firm statutory or regulatory timeframe, deadline, or other restriction on the timing for states to submit TMDLs.

Nor is there any requirement for a state to begin work on a TMDL as soon as a water quality limited segment is listed as impaired. Plaintiffs argue that because Ohio has not yet started work on a nutrient TMDL, Ohio is not complying with a statutory requirement "to promulgate a [TMDL]." Pl. Combined Memo (ECF No. 40) at 1; *see also*

id. at 3 (asserting Ohio's "refusal to begin the TMDL process" is "illegal"). But in assembling their Section 303(d) lists, states must identify "waters targeted for TMDL development in the next two years," which allows waters to remain on a state's list for *more* than 2 years before waters are "targeted for TMDLs development." 40 C.F.R. § 130.7(b)(4). And as explained by longstanding EPA guidance interpreting the statutory and regulatory framework, states have "considerable flexibility" in setting their priority rankings and deciding when to develop particular TMDLs. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* at 63 (July 29, 2005) ("2006 Assessment Guidance") (relevant excerpts attached as Exhibit 1).

There is good reason for this flexibility because, as Congress understood when it enacted the TMDL program into law, "it is extremely difficult to apportion the discharge load from all point sources along a waterway or section of a waterway." H. R. Rep. No. 92-911, at 105-06 (1972). This is especially true of "'complex' TMDLs that may cover a large watershed or address particularly challenging pollution

problems," as opposed to comparatively "routine or 'simple' TMDLs that may be developed as part of an NPDES permit reissuance." Surface Water Toxics Control Program and Water Quality Planning and Management Program, 57 Fed. Reg. 33,040, 33,044 (July 24, 1992). For those TMDLs that require "complex analysis," it is appropriate to "allow time to collect necessary information and complete the analysis." 2006 Assessment Guidance at 63; *see also Ohio Valley Envtl. Coalition, Inc. v. Pruitt*, 893 F.3d 225, 231 n.4 (4th Cir. 2018) ("TMDLs may require substantial time and resources to develop."). The same guidance recommends that states aim to establish TMDLs within "8 to 13 years from the date of the original listing." *Id.* at 57.

ARGUMENT

I. Plaintiffs' Proposed Count Two Is Legally Deficient Because Ohio Has Not Abandoned a TMDL for the Open Waters of Lake Erie.

Plaintiffs repeatedly argue that Ohio has refused to begin the TMDL process for the open waters of western Lake Erie. *See, e.g.*, Pl. Combined Memo at 2, 3, 4, 5, 6. But, as explained below, the relevant legal question is whether Ohio has "'clearly and unambiguously'"

indicate[d] that it will not 'submit any TMDLs and has no plans to remedy this situation.'" *Ohio Valley Envir. Coal.,* 893 F.3d at 230 (quoting *S.F. Baykeeper v. Whitman*, 297 F.3d 877, 882 (9th Cir. 2002)). Plaintiffs have not and cannot point to any statement, action, or inaction by Ohio that clearly and unambiguously shows that Ohio will never prepare a TMDL for nutrient pollution in the open waters of western Lake Erie.

Plaintiffs rely on the constructive submission theory, which began in *Scott v. Hammond*, 741 F.2d 992 (7th Cir. 1984). In *Scott*, the State of Illinois had failed to submit any TMDLs, not even the initial ones for which the CWA does impose a deadline. However, the CWA does not provide a cause of action to sue a state if a state fails to submit a TMDL, so the plaintiffs in *Scott* sued EPA. EPA argued that once a state submits a TMDL, EPA must approve or disapprove the submission within 30 days, under 33 U.S.C. § 1313(d)(2), but if a state does not submit anything, EPA has no statutory duty to act. 741 F.2d. at 997-98. The Seventh Circuit found that if a state "fails over a long period of time to submit proposed TMDL's [sic], this prolonged failure

. . . raises the possibility that the states have determined that [TMDLs] . . . are unnecessary." *Id.* at 997.

Almost every court which has adopted the legal fiction of a constructive submission has examined whether a state has abdicated its TMDL program statewide. *See Ohio Valley Envir. Coal.,* 893 F.3d at 229-30 (collecting cases). In a recent decision, the Fourth Circuit Court of Appeals reviewed the constructive submission caselaw and observed that courts "have declined to find a 'constructive submission' of no TMDLs where a state (1) has produced at least some TMDLs and (2) has a credible plan in place to produce others." *Id.* Plaintiffs do not, and cannot, allege that Ohio has failed either of those prongs, let alone both of them.

Plaintiffs instead argue that Ohio has constructively refused to submit a particular TMDL. Only one court, *Sierra Club v. McLerran,* No. 11-cv-1759, 2015 WL 1188522 *6 (W.D. Wash., March 16, 2015), has indicated that a state like Ohio, with an otherwise robust TMDL program, can nonetheless trigger a constructive submission. No court in this Circuit has adopted the constructive submission theory, much

less *McLerran*'s unprecedented extension of it, and the Court should not do so now. But even if the Court were to adopt the theory, and to take the additional step of following *McLerran*, not even that case supports Plaintiffs' attempt to state a constructive submission claim.

In *McLerran*, the court considered a citizen suit to compel EPA to disapprove the State of Washington's alleged constructive submission of no TMDLs for PCBs in the Spokane River. Although the court went beyond the constructive submission theory as articulated by the Fourth and Seventh Circuits, and other courts, to conclude there could be a constructive submission of no TMDL when a state "clearly and unambiguously indicate[s] that it will not produce a particular TMDL," the court actually held that such a situation had not occurred, even though the Spokane River was first listed for PCBs in 1996. *Id.* at *2, 7-9. In the court's view, where "information gaps persisted such that [the state] could not confidently issue a TMDL at any point in the near future, adopting an alternative may, under some circumstances, represent a reasonable interim measure rather than an abandonment of any future plans to prepare a TMDL." *Id.* at *8.

Assuming for the sake of argument that the Court agrees with *McLerran*'s view of the constructive submission theory, Plaintiffs have not alleged the specific facts necessary to meet *McLerran*'s standard. Ohio's 2018 Integrated Report explains "why a TMDL is not being pursued *immediately*," Ohio 2018 Integrated Water Quality Monitoring and Assessment Report ("2018 Integrated Report") (relevant excerpts attached as Exhibit 2) at D-31 (emphasis added). Ohio also lists most of the lake's assessment units as "Impaired, needs TMDL." *Id.* at J-16. As in *McLerran*, the State has not "abandon[ed] any future plans" to produce a TMDL for the open waters and Plaintiffs have alleged no specific facts to the contrary.

Plaintiffs also claim that Ohio is merely giving "lip service to the idea that it may establish a TMDL at some undetermined future time," Pl. Combined Memo at 1, but Plaintiffs have absolutely no support for that statement, and certainly nothing to show that the State has "clearly and unambiguously *abandoned* its obligation to produce a TMDL." *McLerran*, 2015 WL 1188522, at *7 (emphasis in original). Ohio's 2018 Integrated Report explains in detail the efforts Ohio is

making to address nutrients in Lake Erie. 2018 Integrated Report at J-10. These efforts include the Great Lakes Water Quality Agreement, the Lake Erie Collaborative Agreement, Ohio's Domestic Action Plan for Lake Erie, TMDLs for 22 of the 32 watersheds that feed into the lake, and numerous other nutrient reduction efforts. *Id.* at J-10 to J-15. Plaintiffs have identified nothing in the Clean Water Act that would strip Ohio of its "considerable flexibility" to pursue these nutrient pollution control efforts before developing a TMDL for the western basin of Lake Erie.

Plaintiffs dismiss these efforts out of hand, as simply a means of indefinitely delaying a TMDL, again relying on *McLerran*. Pl. Combined Memo at 1. But *McLerran* cannot save Plaintiffs' constructive submission claim, for two reasons. First, as just explained, the court in *McLerran* found that the State of Washington's exploration of an alternative to a TMDL did *not* amount to a constructive submission of no TMDL. Second, the waterbody in *McLerran* had been on the state's Section 303(d) list for 19 years. 2015 WL 1188522 *10. Here, in contrast, the open waters were first listed this year. While

Plaintiffs may argue that the lake's open waters should have been listed in 2016, they cannot dispute that the obligation to develop a TMDL cannot precede a waterbody's listing as impaired.

If Plaintiffs are allowed to state a claim for a constructive submission by alleging that Ohio has not begun work on a TMDL less than a year after the lake's open waters were listed, the constructive submission theory would be stretched far beyond what any judicial decision, including *McLerran*, has held. It would amount to a rule that a state must begin developing a TMDL as soon as a waterbody is listed. That would upend the states' statutory prioritization process and would go beyond anything that the CWA, EPA's regulations, or the caselaw requires. *Cf. San Francisco Baykeeper v. Whitman*, 297 F.3d 877, 885 (9th Cir. 2002) (Section 303(d) contains no "requirement of simultaneous submission of the list of polluted waters with the TMDL to correct each polluted water"). Such a holding would also effectively place Ohio's water quality program under a proxy conservatorship, something that no court has endorsed, which is precisely why the constructive submission theory has always been predicated on a state's "fail[ure]

over a long period of time to submit" TMDLs required by law. *Scott*, 741 F.2d at 996 (emphasis added).

Instead, Plaintiffs' motion to add their proposed Count Two should be denied because Plaintiffs have failed to plead sufficient facts to demonstrate a constructive submission of "no TMDLs" for western Lake Erie.[1]

II. Plaintiffs' Proposed Count One Is Legally Deficient Because EPA Did Not Act on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

In order for Plaintiffs' proposed Count One to state a claim, Plaintiffs must allege a judicially reviewable final agency action. Plaintiffs argue that the statements Ohio made in its 2016 Integrated Report regarding the State's plans to address nutrient pollution in Lake

[1] Plaintiffs' proposed Count Two suffers from the additional flaw that it only asserts that Ohio's 2016 section 303(d) list is a constructive submission of no TMDL. First Suppl. Compl. ¶¶ 103-104; Pl. Combined Memo at 2, 4, 5. In Argument II we explain why EPA's approval of the 2016 list is not a final agency action with respect to Ohio's nutrient pollution reduction plans and why EPA's approval of Ohio's 2016 list is moot, but a constructive submission argument depends on Ohio's intent, and that should be evaluated based on Ohio's most current statements. In other words, proposed Count Two also fails to state a claim because it fails to assert Ohio's *present* intentions regarding a TMDL for the open waters of western Lake Erie.

Erie amount to a constructive submission for EPA to approve or disapprove, separate and apart from Ohio's 2016 Section 303(d) list of impaired waters. Pl. Combined Memo at 9. Plaintiffs also argue that EPA in fact approved those statements when EPA approved the 2016 list. *Id.*

Plaintiffs' argument presents two problems. First, EPA's approval of Ohio's 2016 list is moot, so if EPA took any reviewable final agency action regarding a constructive submission (which it has not), that final agency action could only be EPA's approval of the 2018 list. Second, even if EPA's approval of the 2016 list is not moot, Ohio's statements regarding its plans to address nutrient pollution in Lake Erie are not a constructive submission of no TMDL, and EPA did not take any final agency action regarding Ohio's statements.

A. Plaintiffs' Proposed Count One Is Moot Because EPA Has Approved Ohio's 2018 Section 303(d) List.

Like Count Two, Plaintiffs' proposed Count One challenges EPA's approval of Ohio's 2016 Section 303(d) list. Plaintiffs argue that even though EPA has now approved a 2018 list, EPA's approval of the 2016 list is not moot because it is an action that is capable of repetition yet

evading review. Pl. Combined Memo at 7-8. Plaintiffs downplay the mootness argument as a "flurry of procedural claims that amount to nothing," *id.* at 6, but mootness is an essential question of subject matter jurisdiction that a court cannot simply waive aside.

Plaintiffs' challenge to EPA's approval of the 2016 list is moot. *See Blue Water Baltimore v. Pruitt*, 266 F. Supp. 3d 174, 180-81 (D.D.C. 2017), *judgment amended*, 293 F. Supp. 3d 1 (D.D.C. 2017). The plaintiffs in *Blue Water* sought to challenge "the reclassifications in [a] 2012" report, but EPA addressed those reclassifications in "both the 2012 and 2014" reports. 266 F. Supp. 3d at 180-81; *see also id.* (the 2014 report "reiterated the rationale stated in the 2012 [report] regarding the reclassification and de-listings at issue"). The court held that "a decision may be superseded by a subsequent decision based on the same rationale because the subsequent decision replaces the prior decision, rendering it void." *Id.* Just as the 2014 report in *Blue Water* "replace[d] the previous list," *id.*, Ohio's 2018 list replaced its 2016 list, so the 2016 list has "no further legal effect." *Id.*[2] The Court cannot

[2] Plaintiffs add in a footnote that the Court could allow them to amend

order any effective relief with respect to the 2016 list.

Plaintiffs assert that they satisfy the capable of repetition yet evading review exception to mootness. They argue that any legal defect in EPA's approval of the 2016 list is capable of repetition because the approval of the 2018 list "merely duplicates" EPA's prior approval, and that it evades review because it is too short in its duration to litigate. Pl. Combined Memo at 6, 8.

But any reading of Ohio's 2016 submission and EPA's 2016 approval to suggest that Ohio constructively submitted no TMDL by expressly disclaiming any responsibility to develop one, is resoundingly refuted by the 2018 Integrated Report and EPA's 2018 approval. The sole support for Plaintiffs' constructive submission claim – statements taken out of context from Ohio's 2016 Integrated Report and misconstrued as definitive statements that Ohio will never develop a TMDL for the western basin of Lake Erie – are *not* repeated in the 2018

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proposed Count One to address EPA's approval of the 2018 list, as the *Blue Water* court did, Pl. Combined Memo at 9 n.2. EPA agrees that this would resolve any mootness concerns, but that amendment would be futile. As we explain below, when EPA approved Ohio's 2018 list EPA took no action on Ohio's future TMDL plans, so Plaintiffs fail to identify a reviewable final agency action regarding either approval.

Integrated Report. Indeed, as noted *supra* at 9, the 2018 Integrated Report classifies all of the Lake Erie assessment units as "Impaired, needs TMDL." 2018 Integrated Report at J-16. Ohio also wrote that where the nutrient reductions from TMDLs in tributaries to Lake Erie "are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps." *Id.* at J-12. And EPA stated in its 2018 Approval that it "expects that under those circumstances [*i.e.*, the inadequacy of Ohio's current nutrient pollution reduction plans] such 'next steps' *would* include TMDL development for the Lake Erie Assessment Units directly." 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) ("EPA 2018 Approval") (ECF No. 40-1, attached as Exhibit A to Pl. Combined Memo), at 18 (emphasis added); *see also* 2018 Integrated Report at D-31 (recognizing that if the water quality in the western basin fails to improve, "a TMDL may ultimately be required").

B. EPA Has Not Taken Final Action on Ohio's Plans to Address Nutrient Pollution in Lake Erie.

Even if EPA's approval of Ohio's 2016 list were not moot, EPA's

statements regarding Ohio's plans do not amount to final agency action on whether Ohio constructively submitted no TMDL. Instead, EPA's approval is final agency action on exactly what it purports to be: the State's section 303(d) list of impaired waters, no more, no less.

Plaintiffs point out that EPA made a finding that Ohio's "discussion of its prioritization of Lake Erie satisfies the requirement to submit a priority ranking." Pl. Combined Memo at 10. As we noted in our opening memo, EPA simply confirms that the state has included a priority ranking that "tak[es] into account the severity of the pollution and uses to be made of such waters." 40 C.F.R. § 130.7(b)(4). EPA does not actually approve the ranking, much less Ohio's "discussion of its prioritization." *See* 2006 Assessment Guidance at 63 ("EPA will review the priority ranking but will not take action to approve or disapprove it."); *McLerran*, 2015 WL 1188522 at *6 (there is "no specific mechanism for reviewing [a state's] prioritization").

Plaintiffs also point to EPA's "blanket determination" that Ohio's 2016 list met the statutory and regulatory requirements. Pl. Combined Memo at 10. Plaintiffs argue that *McLerran* is analogous and refutes

Ohio's "flawed" approach. *id.* at 11, but Plaintiffs skip an essential step: in *McLerran* there was no question that EPA had taken final agency action on whether the state had made a constructive submission. The court in *McLerran* reviewed a separate approval document, issued outside the regular Section 303(d) review process and in response to a specific request to determine whether a state had abandoned a specific TMDL, in which EPA made the explicit conclusion that the state's strategy and task force were "an acceptable alternative to a TMDL." 2015 WL 1188522 at *4. This is materially different than the general statement at issue here, in the context of an Integrated Report. Unlike in *McLerran*, there is no final agency action on whether Ohio has abandoned a TMDL for the open waters of western Lake Erie, and without a final agency action, Count One fails to state a claim.

Plaintiffs raise the possibility of supplementing their complaint with yet a different count, addressing EPA's approval of Ohio's 2018 list, Pl. Combined Memo at 9 n.2, but that would also be futile. *See supra* n.2. In EPA's approval of Ohio's 2018 list, EPA noted Ohio's acknowledgment that TMDLs are required for any assessment units

that are listed as impaired. EPA 2018 Approval at 18. EPA's approval also explains that removing a segment from the Section 303(d) list may be warranted in some cases. For example, a TMDL would not be required if Ohio's efforts "result in the attainment of water quality standards prior to the development of a TMDL." *Id.* However, the substance of EPA's action was, like in 2016, an approval of Ohio's actual Section 303(d) list of impaired waters and its inclusion of a priority ranking of those waters, not an approval of the State's nutrient pollution reduction efforts as an alternative to a TMDL. *Id.* at 20.

Plaintiffs' proposed Count One therefore fails to state a claim, whether Plaintiffs plead Count One as a challenge to EPA's approval of Ohio's 2016 list or as a challenge to EPA's approval of Ohio's 2018 list.

III. The Court Should Grant Defendants' Cross Motion for Summary Judgment.

Because Plaintiffs' two new proposed claims both fail to state a claim, and because EPA's approval of Ohio's 2016 Section 303(d) list, as amended, mooted Plaintiffs' claim that Ohio failed to list the open waters of western Lake Erie as impaired, there is nothing left to adjudicate and the Court should dismiss the case.

CONCLUSION

The Court should grant Defendants' cross motion for summary judgment.

Respectfully submitted this 6th day of August 2018.

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CERTIFICATE OF SERVICE

I hereby certify that on August 6, 2018, I electronically filed the foregoing REPLY MEMORANDUM IN SUPPORT OF DEFENDANTS' CROSS MOTION FOR SUMMARY JUDGMENT with the Clerk of the Court by using the CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the CM/ECF system.

/s/ Daniel R. Dertke
Daniel R. Dertke

Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act

July 29, 2005

Watershed Branch
Assessment and Watershed Protection Division
Office of Wetland, Oceans and Watersheds
Office of Water
United States Environmental Protection Agency

This document provides EPA's guidance for preparing the 2006 Integrated Report. The Integrated Report is intended to satisfy the listing requirements of sections 305(b) and 314 of the Clean Water Act (CWA). This guidance document discusses existing requirements of the CWA and EPA's implementing regulations. Those statutory and regulatory provisions contain legally binding requirements. This document describes those requirements; it does not substitute for them. The recommendations in this document are not binding; indeed, there may be other approaches that would be appropriate in particular circumstances. When EPA makes a decision on a state's section 303(d) list, it will make each decision on a case-by-case basis and will be guided by the applicable requirements of the CWA and implementing regulations, taking into account comments and information presented at that time by interested persons regarding the appropriateness of applying these recommendations to the particular situation.

CONTENTS

Section Page

ABBREVIATIONS AND ACRONYMS v

I. INTRODUCTION 6

II REPORTING REQUIREMENTS UNDER THE CLEAN WATER ACT SECTIONS 303(D), 305(B), 314 AND CORRESPONDING REGULATIONS 9

III. RECOMMENDED ORGANIZATION OF AN INTEGRATED REPORT 13
EXECUTIVE SUMMARY 14
PART A. INTRODUCTION 14
PART B. BACKGROUND INFORMATION 14
PART C SURFACE WATER MONITORING AND ASSESSMENT. 17
PART D. GROUND WATER MONITORING AND ASSESSMENT 25
PART E. PUBLIC PARTICIPATION 25

IV. ISSUES CONCERNING THE DEVELOPMENT AND USE OF AN ASSESSMENT METHODOLOGY 29

V. FIVE-PART CATEGORIZATION OF WATERS 46

VI. REPORTING RESULTS 65

GLOSSARY 66

APPENDIX: DATA ELEMENTS FOR 2006 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT AND DOCUMENTATION FOR DEFINING AND LINKING SEGMENTS TO THE NATIONAL HYDROGRAPHY DATASET
. 70

TABLES

Table		Page
2-1	SUMMARY OF STATE REPORTING REQUIREMENTS UNDER CWA SECTIONS 303(D), 305(B) AND 314 AND CORRESPONDING REGULATIONS	11
3-1	ATLAS	15
3-2	SIZE OF SURFACE WATERS ASSIGNED TO REPORTING CATEGORIES	19
3-3	ATTAINMENT RESULTS CALCULATED USING PROBABILISTIC MONITORING DESIGNS	20
3-4	SEGMENT/POLLUTANT COMBINATIONS REMOVED FROM STATE'S YEAR 2004 SECTION 303(D) LIST	21
3-5	TMDL DEVELOPMENT STATUS	21
3-6	INDIVIDUAL DESIGNATED USE SUPPORT SUMMARY	22
3-7	SIZE OF WATERS IMPAIRED BY CAUSES	22
3-8	SIZE OF WATERS IMPAIRED BY SOURCES	23
3-9	TROPHIC STATUS OF SIGNIFICANT PUBLICLY OWNED LAKES	24
3-10	TRENDS IN LAKE WATER QUALITY	24
3-11	SUMMARY OF WATER QUALITY REPORTING ELEMENTS OF AN INTEGRATED REPORT	27
5-1	RECOMMENDED WATER QUALITY INDICATORS FOR GENERAL DESIGNATED USE CATEGORIES	52
5-2	DOCUMENTATION OF "GOOD CAUSE" TO MOVE SEGMENTS FROM CATEGORY 5.	58

FIGURES

Figure		Page
4-1	USING MULTIPLE TYPES OF DATA TO ASSESS ATTAINMENT	45

EXHIBITS

Exhibit		Page
3-1	RECOMMENDED ORGANIZATION FOR YEAR 2006 INTEGRATED REPORT SUBMITTALS	13
5-1	2006 INTEGRATED REPORTING GUIDANCE: SEGMENT CATEGORIZATION GUIDE	48

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ABBREVIATIONS AND ACRONYMS

ADB	Assessment Database
AU	Assessment Unit
CALM	Consolidated Assessment and Listing Methodology
CPP	Continuing Planning Process
CFR	Code of Federal Regulations
CWA	Clean Water Act
DQO	Data Quality Objectives
DU	Designated Use
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
FGDC	Federal Geographic Data Committee
GPRA	Government Performance Report Act
IR	Integrated Report
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NSSP	National Shellfish Sanitation Program
OW	Office of Water
PPG	Performance Partnership Grant
PWS	Public Water Supply
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RIT	Reach Indexing Tool
SDWA	Safe Drinking Water Act
STORET	STORage and RETrieval
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WQC	Water Quality Criteria
WQS	Water Quality Standard

I. INTRODUCTION

The *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* was developed specifically for the 2006 reporting cycle. The objective of this document is to provide to states, territories, authorized tribes, and interstate commissions[1] a recommended reporting format and a suggested content to be used in developing a single document that integrates the reporting requirements of the Clean Water Act (CWA) section 303(d) and section 305(b). This guidance for developing the Integrated Report (IR) supports the Environmental Protection Agency's (EPA) strategy for achieving a broad-scale, national inventory of water quality conditions. Use of the IR format will serve to report on water quality standards (WQS) attainment status of assessed waters, document availability of data and information for each segment, identify trends in water quality conditions, and provide information to managers in setting priorities for future actions to protect and restore the health of our nation's aquatic resources.

EPA has established a goal that all fifty-six states and territories utilize the integrated reporting format by 2008. EPA continues to promote this comprehensive assessment approach in order to enhance the states' ability to track both programmatic and environmental goals of the CWA, and ideally, to increase the pace of achieving these important environmental goals. This document includes recommendations designed to allow states and other interested stakeholders to track the progress of interim management actions by employing the multi-category reporting framework. By issuing this guidance well in advance of the April 1, 2006 deadline for submission of CWA section 303(d) lists and section 305(b) reports, EPA intends to encourage the broadest possible adoption of the integrated reporting approach.

EPA continues to advocate the use of the five-part categorization format for sorting waters (see box below for brief description and Section V). While this document is more comprehensive than previous Integrated Report Guidance, there are clarifications to the previous (2004) Integrated Report Guidance. Specifically, this guidance provides:

- increased emphasis on the use of the Assessment Database (ADB) or compatible electronic data format (the ADB is being modified to accommodate the recent format, content, and multi-category listing option that the guidance suggests),
- greater clarity on the content and the format of those components of the IR that are recommended and required under CWA sections 303(d), 305(b), and 314,
- greater clarity on issues associated with data solicitation, collection, consideration, and interpretation of water quality standards,
- additional information on the option to report water quality status of individual segments in more than one category (e.g., to show that some designated uses of a water are being attained and some designated uses are not),[2] and
- additional clarity and flexibility on undertaking and reporting alternatives to total maximum daily loads (TMDLs) for attaining water quality standards (e.g., utilization of reporting "Category 4b").

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[1] In the remainder of this document, unless specified otherwise, *states* also refers to authorized tribes, territories and interstates commissions.

[2] In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality, although note that states determine their section 303(d) list (i.e., Category 5) consistent with 40 CFR 130.7 (b)(3).

It is important to note that certain components of the recommended format and content for the 2006 IR document are based on requirements of the CWA and EPA's implementing regulations (e.g., the submission of an approvable section 303(d) list), whereas other components are based on Agency recommendations. In section II of this guidance, those components *required* by the CWA sections 303(d), 305(b), 314, and the corresponding regulations are identified.

In addition to identifying the required components in the 2006 IR submission, this guidance will indicate the components of the 2006 IR document for which EPA recommends states provide an opportunity for *public review and comment* (e.g., the list of impaired waters requiring TMDLs and the assessment methodology used by the state to develop their IR document).

Five Reporting Categories

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Integrated Monitoring and Assessment

The Clean Water Act requires states to provide every two years an assessment of the quality of all their waters (section 305(b)) and a list of those that are impaired or threatened (section 303(d)). To efficiently meet this charge, EPA recommends that states, tribes, and other water quality monitoring collaborators use a combination of monitoring and assessment techniques to:

1. increase the percentage and types of waters assessed;
2. reliably estimate the overall condition of all waters within a state; assess changes over time; and measure progress toward the "fishable-swimmable" goal of the Clean Water Act (section 305(b));
3. comprehensively identify all impaired and threatened waters to support section 303(d) listing requirements; and
4. prioritize site-specific assessments needed to confirm the location of both high quality and impaired waters, and support control, restoration, and prevention actions.

EPA has strongly encouraged states to use integrated monitoring and assessment techniques. These include probability-based assessments and other predictive tools, as well as site-specific assessments. The use of probability assessments can eliminate the risk of generating a biased picture of water quality conditions state-wide and provide a cost-effective bench mark of state water quality program effectiveness. The probability-based assessment results can also help a state decide if it should target certain waters for further assessment or if limited resources for water quality assessment could be used more effectively in other ways. States currently using broad-scale probability-based assessment to complement their site-specific assessment include VA, SC, KY, and IN, among others.

V. FIVE-PART CATEGORIZATION OF WATERS

Use of the Integrated Report format and the use of the five-part categorization scheme envisions that each state provides a comprehensive description of the water quality standards attainment status of all segments within a state. In this guidance, the term "segment" is synonymous with the term "assessment unit" (AU) used in previous IR Guidance. Fundamental to this accounting is the use of a consistent and rational segmentation and geo-referencing approach for all segments including rivers, streams, lakes, wetlands, estuaries, and coastal waters. There is no single approach to the development of a segmentation scheme. However, it is important that the selected segmentation approach be consistent with the state's water quality standards and be capable of providing a spatial scale that is adequate to characterize the WQS attainment status of the segment. The IRG provides some recommendations on how states may develop a segmentation scheme for monitoring, assessing and categorizing water quality conditions. Additionally, the IRG provides recommendations for assigning individual segments to the five-category system.

A. Recommendations for Segmenting Waters

EPA recommends that states consider using the National Hydrography Dataset (NHD)[15] coding scheme to georeference their segments, where segments may comprise part of an NHD reach, an individual NHD reach, or a collection of NHD reaches or parts of reaches. Alternatively, if a state has already developed a comparable Geographic Information System (GIS) framework, EPA requests that states provide any relevant information necessary to allow consistent georeferencing. Additionally, this information should be included in the state's ADB submission. States generally partition waters to represent homogeneity in physical, biological or chemical conditions. This segmentation may reflect an *a priori* knowledge of factors such as flow, channel morphology, substrate, riparian condition, adjoining land uses, confluence with other waterbodies, and potential sources of pollutant loadings (both point and nonpoint). While there is no single default dimension for a segment size, states have utilized these or similar principles when they defined the segments used in their water quality standards. Other factors may include the following:

- The expected natural variability of the measured criteria associated with the WQSs.
- The type of water (e.g., a small stream, a wide river, a tidal and stratified estuary, and coastal shoreline).
- Time of travel of a parcel of water in the waterbody or segment or the magnitude of any tidal excursions.
- The amount of and type of data and information necessary to provide a reasonably accurate characterization of the criteria (or core indicators) associated with the designated uses in the segment or waterbody.
- Any expected changes in significant influences in the watershed (land use, point or nonpoint sources of pollutants).
- Any site-specific concerns such as patchy or unique habitat distribution patterns or biological population distributions.

[15] By making this recommendation, EPA is not equating availability of geographical information on a water segment in the NHD with the legal definition of water of the U.S. under CWA.

Using NHD or other comparable GIS framework, a state should assign a discrete "address" or geo-location to each segment, and document the process used for defining water segments in their methodologies. The physical boundaries (beginning and end points) of a segment should be defined in such a manner that a scientifically valid assessment of each and every segment can be made. The individual size of a segment will vary based upon methodologies. Segments should, however, be larger than a sampling station but small enough to represent a relatively homogenous parcel of water (with regard to hydrology, land use influences, point and nonpoint source loadings, etc.).

B. How should segments be assigned to EPA's five reporting categories?

EPA continues to advocate the use of the five category approach for classifying the WQS attainment status for each segment. In this guidance document EPA refers to "designated uses" as the basis and unit for reporting water quality. A segment is considered impaired when WQS[16] are not being supported and/or met, and is considered threatened when WQS are not expected to be fully supported and/or met in the next listing cycle. In classifying the status of water quality in 2006, states have the option to report each segment in one or more categories. EPA recommends that states use the following five reporting categories to classify segments as meeting or not meeting applicable WQS:

Category 1: All designated uses are supported, no use is threatened;
Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported;
Category 3: There is insufficient available data and/or information to make a use support determination;
Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed;
Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Exhibit 5-1 provides an example of how to consider designated uses in the categorization process. EPA believes that the placement of segments into the five reporting categories best allows states to document attainment of applicable WQSs, and to develop monitoring strategies that effectively respond to the needs identified in the assessment, while ensuring that the attainment status of each water quality standard applicable to a particular segment is addressed.

[16] Water quality standards include designated use(s), criteria, and the antidegradation policy. Water quality criteria are important elements of water quality standards and attainment of criteria should also be evaluated in making listing decisions (See 40 CFR 130.7 (b)(3)). Failure to meet WQC warrant listing of waters under section 303(d). EPA has not developed guidance at this time on determining attainment status for antidegradation policies. EPA recognizes that such policies, while an important part of WQS, may not lend themselves to "attainment" determinations on a segment specific basis.

Exhibit 5-1. 2006 Integrated Reporting Guidance: Segment Categorization Guide

The following schematic describes a process states might consider using for determining the placement of segments into the Integrated Report (IR) Categories. The process begins with the assessment of the water quality standard attainment status (designated use(s), criteria) of each segment, and concludes with the placement of each segment into one or more of the five IR Categories. The assessment of the water quality standards attainment status should be consistent with the state's assessment and listing methodology and must ensure that segments not meeting or not expected to meet applicable water quality standards are identified. While the schematic focuses on the assessment of designated uses (DU) for each segment, as previously stated all components of the water quality standard are considered in the categorization of a segment.

Step-by-step process to categorize a segment

1. For each segment, assemble and consider all existing and readily available data and/or information to determine the support status for each individual designated use.
2. Based on the data and information available, make support decisions for each DU in the segment and assign the appropriate symbol (✔+, ✔-, ?, T, 4a, 4b, 4c – See *Symbols and Definitions*).
3. Using the results of Step 2, place the segment into the appropriate category or categories.

Symbols and Definitions:

✔+ = The existing data and information shows that a use ***is supported***.

✔- = The existing data and information shows that a use ***is not supported.***

? = There is insufficient existing data and information to make a use support determination, consistent with the state's assessment and listing methodology.

T = A use in this segment is currently being supported, but is **THREATENED** and it is projected not to be supporting by the next scheduled list submission date.

4a = A TMDL to address a specific segment/pollutant combination has been approved or established by EPA.

4b = A use impairment caused by a pollutant is being addressed by the state through other pollution control requirements.

4c = A use is impaired, but the impairment is not caused by a pollutant.

In the following schematic, each box represents one (1) segment. Each segment may contain one or more DUs. After compiling and considering all existing and readily available data and information for each DU in a specific segment, support decisions are made. Placement of the segment into the appropriate category or categories is based on the sufficiency of the data and information, and the analysis of whether the data demonstrates that the DU is supported.

SEGMENT #1 (1 DU) — **ASSESSMENT**

DU1 → ✔+

SEGMENT #2 (2 DUs) — **ASSESSMENT**

DU1, DU2 → T, ✔-

SEGMENT #3 (3 DUs) — **ASSESSMENT**

DU1, DU2, DU3 → ✔+, ✔+, ?

SEGMENT #4 (4 DUs) — **ASSESSMENT**

DU1, DU2, DU3, DU4 → ✔-, 4a, ?, ✔+

SEGMENT CATEGORIZATION

	DU1	DU2	DU3	DU4	Single Category	Multi-Category
SEGMENT 1	✔+				C1	C1
SEGMENT 2	T	✔-			C5	C5
SEGMENT 3	✔+	✔+	?		C2	C2 & C3
SEGMENT 4	✔-	4a	?	✔+	C5	C5, C4a, C3 & C2

Additional examples are provided below to further illustrate the process of segment classification into multiple categories.

	DU1	DU2	DU3	DU4	Single-Category	Multi-Category
SEGMENT A	✔+	✔+	✔+	✔+	C1	C1
SEGMENT B	✔-	✔-	✔-	✔-	C5	C5
SEGMENT C	✔-	✔-	✔-	T	C5	C5
SEGMENT D	?	?	?	?	C3	C3
SEGMENT E	4b	✔-	✔-	✔-	C5	C4b, C5
SEGMENT F	✔+	✔+	✔-	✔-	C5	C2 & C5
SEGMENT G	✔+	✔+	?	?	C2	C2 &C3
SEGMENT H	?	?	?	✔-	C5	C3 & C5
SEGMENT I	✔+	✔+	✔+	4c	C4c	C2, C4c
SEGMENT J	?	?	4c	T	C5	C3, C4c, & C5
SEGMENT K	✔+	?	?	✔-	C5	C2, C3, & C5
SEGMENT L	✔+	✔+	?	T	C5	C2, C3 & C5
SEGMENT M	✔+	?	4b	✔-	C5	C2, C3, C4b & C5

States have the option to place segments into more than one of the five categories when appropriate. The placement of segments into more than one category will allow states to:

1. Demonstrate progress in the efforts to develop TMDLs,
2. Track progress as segments incrementally attain some, but not all water quality standards, and
3. Identify those segments where there is a need to obtain additional data and information for purposes of determining attainment status of some water quality standards.

While EPA recommends that states adopt and utilize the IR format for reporting the status of their water quality in 2006, states may choose to submit separate 303(d) and 305(b) reports. Furthermore, even if a state chooses to use the IR format, it may choose to place each segment into only one category and rely on the reporting capability of ADB to provide detail on the support status of all individual uses. More detailed guidance for determining the appropriate categorization of segments is provided below. It is important to note that states must consider all existing and readily available data and information in developing their section 303(d) lists, and may choose to assess a segment and assign the segment to a category using data and information other than monitored data (e.g., land use, pollutant loading coefficients, remote sensing data, modeling, etc.).

C. May a state use subcategories or additional categories in its Integrated Report?

Yes, in order to refine their classifications, states may choose to establish new or additional subcategories in addition to the proposed five major categories. For example, a state may decide to divide Category 3 into two subcategories in order to distinguish between those segments for which no data and/or information exist from those segments for which some data and/or information exist, but the data are insufficient to make a determination whether the segment is attaining applicable standards. A state may also choose to use subcategories for segments placed into Category 3 when establishing monitoring priorities. For example, the state may place its segments into different subcategories depending on whether the segment is high, medium, or low priority for follow-up monitoring based on information from probability-based monitoring, landscape or water quality models, land use data, or limited site-specific monitoring.

D. Which segments should states include in Category 1?

Segments may be placed into Category 1 if all designated uses are supported, and no use is threatened. When a segment meets the Category 1 requirements, the state has concluded, consistent with their water quality standards (and their assessment methodology) that sufficient data and information exist to determine that ***all applicable water quality standards are being attained,*** thereby making the use of Category 2 unnecessary for this segment, (see Category 2 discussion below). By placing a segment into Category 1, the state is also concluding that there are adequate data and there is sufficient information to make a determination for any water quality standard, making the use of Category 3 unnecessary for this segment (see Category 3 discussion below).

1. *In order to place a segment in Category 1, must states have specific data and information regarding the status of each water quality standard?*[17]

No. States may describe in either their assessment methodology or in their water quality standards a subset or hierarchy of indicators (as described in the CALM guidance and *Elements of a State Water Monitoring and Assessment Program*) that serve to characterize whether conditions in a segment are capable of meeting all applicable water quality standards.

Because limited resources affect the design of water quality monitoring programs, the state should use a tiered approach to monitoring that includes a core set of baseline indicators selected to represent each applicable designated use, plus supplemental indicators selected according to site-specific or project-specific decision criteria. Using this tiered approach, the state should be able to make the best use of its resources to meet water quality decision needs, including assessing water quality standards attainment and designated use support, identifying needed changes to water quality standards, describing causes and sources of impairments, developing water quality-based source controls, and assessing whether water quality standards are attained. Where the assessment of the supplemental indicators applicable to every designated use in a segment documents that all uses are supported and no use is threatened, that segment should be placed into Category 1.

The monitoring strategy should define a core set of indicators (e.g., water quality parameters) for each water resource type that include physical/habitat, chemical/toxicological, and biological/ecological endpoints as appropriate, that reflect designated uses, and that can be used routinely to assess attainment with applicable water quality standards throughout the state. This core set of indicators is monitored to provide Statewide or basin/watershed level information on the fundamental attributes of the aquatic environment and to assess water quality standards attainment/impairment status. Previously, chemical and physical indicators were emphasized; however, biological monitoring and assessment should assume a prominent role in state monitoring as well.

The monitoring strategy should also describe the process the state uses for identifying supplemental indicators to monitor. Supplemental indicators are often key to identifying causes and sources of impairments and targeting appropriate source controls. These supplemental indicators may include each water quality criteria in the state's water quality standards, any pollutants controlled by the National Pollutant Discharge Elimination System (NPDES), and any other constituents or indicators of concern.

Table 5-1 presents examples of recommended core and supplemental water quality indicators. The Consolidated Assessment and Listing Methodology provides additional information on considerations for selection of supplemental indicators (see http://www.epa.gov/owow/monitoring/calm.html, Chapter 10).

[17] Part D(1) of Section V has been adapted from Section II (Part D) of *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

Table 5-1. Recommended Water Quality Indicators for General Designated Use Categories

	Aquatic Life & Wildlife	Recreation	Drinking Water	Fish/Shellfish Consumption
Recommended Core Indicators	*Condition of biological communities (EPA recommends the use of at least two assemblages) *Dissolved oxygen *Temperature *Conductivity *pH *Habitat assessment *Flow *Nutrients *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Eutrophic condition Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Pathogen indicators (E. coli, enterococci) *Nuisance plant Growth *Flow *Nutrients *Chlorophyll *Landscape conditions (e.g., % cover of land uses) Additional indicators for lakes: *Secchi depth Additional indicators for wetlands: *Wetland hydrogeomorphic settings and functions	*Trace metals *Pathogens *Nitrates *Salinity *Sediments/TDS *Flow *Landscape conditions (e.g., % cover of land uses)	*Pathogens *Mercury *Chlordane *DDT *PCBs *Landscape conditions (e.g., % cover of land uses)
Supplemental Indicators	*Ambient toxicity *Sediment toxicity *Other chemicals of concern in water column or sediment *Health of organisms	*Other chemicals of concern in water column or sediment *Hazardous chemicals *Aesthetics	*Volatile organic compounds (VOCs) (in reservoirs) *Hydrophyllic pesticides *Nutrients *Other chemicals of concern in water column or sediment *Algae	*Other chemicals of concern in water column or sediment

Source: *Elements of a State Water Monitoring and Assessment Program*; Office of Water, US EPA; EPA 841-B-03-003, March 2003.

2. Should states use biosurvey data to list a segment as in attainment for aquatic life use support?

EPA encourages the use of biosurvey data in concert with other specified and supplemental indicators for making an aquatic life use attainment determination. Properly developed biosurvey data can provide direct evidence of aquatic life use support. States may develop, consistent with their assessment methodology and water quality standards, their own bioassessment approach to assessing aquatic life use support. CALM and the 2003 *Elements of a State Water Monitoring and Assessment Program,* recommend the use of at least two assemblages (e.g., fish and macroinvertebrates) in such assessments (See Table 5-1 taken from *Elements of a State Water Monitoring and Assessment Program*).

3. What data should states have to determine that a segment is meeting a "fish consumption" use?

Assessment determinations regarding fish/shellfish consumption uses should be based on parameter-specific data for two groups of pollutants: (1) human pathogens, or indicators thereof, and (2) chemicals with high bioaccumulation potential. Among the bioaccumulative pollutants, EPA recommends mercury, chlordane, Dichloro-diphenyl-trichloroethane (DDT), and polychlorinated biphenyls (PCBs) as core indicators.

E. Which segments should states include in Category 2?

Segments should be placed in Category 2 if the state determines that available data and/or information indicate that some, but not all of the designated uses are supported. If the state has chosen to use the multi-category approach, segments reported in Category 2 may also be reported in Categories 3, 4, or 5 depending upon the results of the analysis of all available data and information on the other uses in the segment. However, if a single-category approach is used, Category 5 takes precedence over all other categories.

F. Which segments should states include in Category 3?

Segments should be placed in Category 3 when there is insufficient available data and/or information to make a use support determination. Category 3 is consistent with and responds to one of the recommendations in the National Research Council's (NRC) report, Assessing the TMDL Approach to Water Quality Management (2001), in which the authors suggested that a category be created for those segments where there existed insufficient data and/or information to assess the use. The state should identify those segments that are higher and lower priority for followup monitoring, and may do so using predicative tools such as probability surveys or landscape models. Category 3 provides states with the flexibility to monitor these segments in a manner consistent with their overall monitoring strategy and schedule.

G. Which segments should states include in Category 4?

Segments may be placed in Category 4 if available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed. States may place segments that meet this definition in one of the following three subcategories:

- a state developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination (Category 4a);

- other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time (Category 4b);
- the non-attainment of any applicable water quality standard for the segment is the result of pollution and is not caused by a pollutant (Category 4c).

1. Which segments should states include in Category 4a?

Segments should be placed in Category 4a when a TMDL to address a specific segment/pollutant combination has been approved or established by EPA. Once the TMDL has been approved or established, the state should implement the TMDL as soon as practicable. Additionally, EPA encourages states to provide monitoring schedules for these segments to ensure that sufficient data and information are obtained to document progress of the implementation actions towards meeting the applicable water quality standards. Segments in this category may also be included in other categories, as appropriate (See Exhibit 5-1).

2. Which segments should states include in Category 4b?

EPA regulations recognize that alternative pollution control requirements may obviate the need for a TMDL. Segments are not required to be included on the section 303(d) list if technology-based effluent limitations required by the Act, more stringent effluent limitations required by state, local, or federal authority, or "[o]ther pollution control requirements (e.g., best management practices) required by local, State or Federal authority" are stringent enough to implement applicable water quality standards (see 40 CFR 130.7(b)(1)) within a reasonable period of time. This guidance acknowledges that the most effective method for achieving water quality standards for some water quality impaired segments may be through controls developed and implemented without TMDLs (referred to as a "4b alternative"). The discussion below focuses on the use of "other pollution control requirements" as a basis for the conclusion that a segment does not need a TMDL.

a. What demonstration does EPA expect a state to make to support a successful Category 4b proposal?

EPA will evaluate on a case-by-case basis a state's decisions to exclude certain segment/pollutant combinations from Category 5 (the section 303(d) list) based on the 4b alternative. States should provide in their submission the rationale which supports their conclusion that there are "other pollution control requirements" sufficiently stringent to achieve applicable water quality standards within a reasonable period of time.

Specifically, this rationale should include: (1) a statement of the problem causing the impairment, (2) a description of the proposed implementation strategy and supporting pollution controls necessary to achieve water quality standards, including the identification of point and nonpoint source loadings that when implemented assure the attainment of all applicable water quality standards, (3) an estimate or projection of the time when water quality standards will be met, (4) a reasonable schedule for implementing the necessary pollution controls, (5) a description of, and schedule for, monitoring milestones for tracking and reporting progress to EPA on the implementation of the pollution controls, and (6) a commitment to revise as necessary the implementation strategy and corresponding pollution controls if progress towards meeting water quality standards is not being shown. EPA acknowledges that the level of rigor necessary to support the state's rationale will vary depending on the complexity of the

water impairments and corresponding implementation strategies. Note that a state could pursue water quality trading under 4b, so long as it follows the principles described in the Agency's relevant guidance.

If the Agency determines that the controls are not, in fact, "requirements," or that they will not result in attainment of applicable water quality standards within a reasonable time, then EPA may disapprove the state's failure to include the segment at issue on the section 303(d) list (i.e., Category 5) and add the segment to the list. In subsequent list submissions, EPA may determine that a segment that has been placed into Category 4b must go back into Category 5, if the circumstances have changed such that the state can no longer support its original 4b demonstration.

b. What constitutes acceptable "pollution control requirements" to support Category 4b alternatives?

Because of the case-specific nature of water quality impairments and controls designed to address such impairments, EPA cannot identify classes of controls that will always be adequate to support a conclusion that a segment is not required to be included in Category 5. In evaluating whether a particular set of pollution controls are in fact "requirements" as specified in EPA's regulation, the Agency will consider a number of factors including: (1) authority (local, state, federal) under which the controls are required and will be implemented with respect to sources contributing to the water quality impairment (examples may include: self-executing state or local regulations, permits, and contracts and grant/funding agreements that require implementation of necessary controls), (2) existing commitments made by the sources to implementation of the controls (including an analysis of the amount of actual implementation that has already occurred), (3) the availability of dedicated funding for the implementation of the controls, and (4) other relevant factors as determined by EPA depending on case-specific circumstances.

Since the overriding objective of the 4b alternative is to promote implementation activities designed to achieve water quality standards in a reasonable period of time, for all of the factors listed above, EPA will evaluate each 4b alternative on a case-by-case basis, including in particular the existence of identifiable consequences for the failure to implement the proposed pollution controls. Depending on the specific situation, "other pollution control requirements" may be requirements other than those based on statutory or regulatory provisions, as long as some combination of the factors listed above are present and will lead to achievement of WQSs within a reasonable period of time. For example, established plans of government agencies that require for attainment of WQS with a reasonable period of time may qualify even when their components include incentive-based actions by private parties. States may also choose to rely on controls that have already been implemented where there is sufficient certainty that implementation will continue until WQS are achieved and will not be reversed. Because the controls are already in place and achieving progress, EPA may consider such controls to be requirements even if their implementation did not occur pursuant to binding legal authority.

c. What constitutes a reasonable period of time for purposes of 4b?

EPA expects that segments impaired by a pollutant but not listed under section 303(d) based on the implementation of existing control requirements will attain WQSs within a reasonable period of time. What constitutes a "reasonable time" will vary depending on factors such as the initial severity of the impairment, the cause of the impairment (e.g., point source discharges, in place sediment fluxes, atmospheric deposition, nonpoint source runoff), riparian condition, channel condition, the nature and behavior of the specific pollutant (e.g., conservative, reactive), the size and complexity of the segment (a

simple first-order stream, a large thermally-stratified lake, a density-stratified estuary, and tidally-influenced coastal segment), the nature of the control action, cost, public interest, etc. States should consider such factors and provide, as stated in Section IV.G.2.A. above, a time estimate by which the controls will result in WQS attainment, including an explanation of the basis for their conclusion. EPA will evaluate on a case-specific basis whether the estimated time for WQS attainment is reasonable.

d. What are some examples to illustrate how the preceding guidance would be applied?

EPA will evaluate on a case-specific basis each set of controls a state uses to support a decision to include a segment in Category 4b. The following circumstances are examples of controls which may be sufficient to support such a decision, depending on the facts of the specific case:

- A waterbody is impaired solely by point sources. Each point source has an NPDES permit containing limits sufficient to implement WQS in that waterbody by the end of the permit terms.
- A waterbody is impaired by nonpoint source sediment input. The state has adopted regulations requiring sources to implement certain best management practices (BMPs), and can enforce the regulatory requirements under state law. The state demonstrates that implementation of BMPs by these sources will result in meeting WQS in the waterbody in a reasonable time.
- A waterbody is impaired by nonpoint sources and the state has entered into contracts for source remediation. Implementation of the contract terms will result in attainment of WQS in the waterbody in a reasonable time. While the state cannot obtain specific performance as a contract remedy, it can file a claim for significant monetary damages if the terms are not met.
- A waterbody is impaired by nonpoint sources which have already implemented some or all of certain measures that will result in attainment of WQS in that waterbody in a reasonable time. The controls are unlikely to be removed or reversed (e.g., watershed restoration measures pursuant to 319 grant).
- A waterbody is impaired by nonpoint sources within federal lands where a forest management plan has been developed and is being implemented. In this case, certain elements are included in the forest management plan emphasizing BMP certification programs, require adaptive adjustments of practices, and specify monitoring options needed to demonstrate compliance with state water quality standards.

3. Which segments should states include in Category 4c?

Segments should be placed in Category 4c when the states demonstrates that the failure to meet an applicable water quality standard is not caused by a pollutant, but instead is caused by other types of pollution. Segments placed in Category 4c do not require the development of a TMDL. Pollution, as defined by the CWA is "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water" (section 502(19)). In some cases, the pollution is caused by the presence of a pollutant and a TMDL is required. In other cases, pollution does not result from a pollutant and a TMDL is not required. States should schedule these segments for monitoring to confirm that there continues to be no pollutant associated with the failure to meet the water quality standard and to support water quality management actions necessary to address the cause(s) of the impairment. Examples of circumstances where an impaired segment may be placed in Category 4c include segments impaired solely due to lack of adequate flow or to stream channelization.

EPA encourages the state to collect or assemble additional data and/or information to verify the initial placement of the segment, and to re-categorize the segment based on the assessment of the additional data and/or information where appropriate.

H. Which segments should states include in Category 5?

This category constitutes the section 303(d) list that EPA will review and approve or disapprove pursuant to 40 CFR 130.7. States must include on their section 303(d) list those waters required to be listed by the Clean Water Act and EPA's implementing regulations. Segments must be placed in Category 5 when, based on existing and readily available data and/or information, technology-based effluent limitations required by the Act, more stringent effluent limitations, and other pollution control requirements are not sufficient to implement an applicable water quality standard and a TMDL is needed. 40 CFR 130.7(b)(1).

A segment that is included in Category 5 may also be included in other categories where appropriate. For example, the segment may be attaining some applicable standards, in which case it may also be included in Category 2. As the state develops and EPA approves TMDLs for the pollutants identified as causing a Category 5 segment to exceed an applicable standard, the segment can be placed in Category 4a, but must also remain in Category 5 if it is exceeding any applicable standard and a TMDL needs to be developed for the pollutant causing that exceedance. However, note that Category 5 takes precedence if the state chooses to list a segment in only one category.

1. Is Category 5 of the Integrated Report for 2006 a new section 303(d) list, and must the state account for all segments previously listed as needing a TMDL in the 2004 list?

The section 303(d) list (segments in Category 5) once approved (or, if necessary, established by EPA following disapproval of a state's list) is a new list that replaces the previous list. The time frame for establishing TMDLs should be 8 to 13 years from the date of the original listing. For example, a segment originally included on the 1998 section 303(d) list, and still identified on the 2006 submission as requiring a TMDL, should be addressed by 2011.

Segments included on previous 303(d) lists or previously placed in Category 5 should be accounted for in subsequent submissions. However, the fact that a segment was previously included in Category 5 (or on the 303(d) list) does not necessarily mean that it must remain in Category 5 until a TMDL is established. In some cases, removing a segment from Category 5 prior to TMDL development may be warranted. For example, the state may determine that the conditions have changed such that the segment is no longer required to be on the section 303(d) list (e.g., if new data and/or information shows that the applicable standard is met). Alternatively, the state may determine that other required control measures are sufficient to implement the applicable standard, and therefore may move the segment to Category 4b. The state may also determine based on the assessment of new data and information that pollutants do not cause or contribute to the impairment of the segment and therefore may move the segment to Category 4c. The state may also demonstrate that the original Category 5 listing was erroneous (i.e., not consistent with its assessment methodology or WQSs).

EPA may request, as discussed below, that the state demonstrate good cause for not including individual segments (including previously listed segments) in Category 5 (40 CFR 130.7(b)(6)(iv)). EPA may request this demonstration if the state does not develop an adequate record supporting the basis for

the decision or does not specifically explain its decision to move segments previously listed in Category 5 to other categories.

2. *What constitutes good cause for not including in the current submission segments that were previously included in Category 5 (the section 303(d) List)?*

To provide interested stakeholders with a more complete understanding of the changes that may have occurred from one IR cycle (or 303(d) submission) to the next, and to help expedite EPA's review and approval/disapproval action for those segments in Category 5, EPA recommends that states submit with their IR (or their 303(d) list) a table documenting changes in segment placement or categorization from the 2004 IR, and a brief summary of the basis for those changes. Table 5-2 provides an example of how states might do this.

Table 5-2. Documentation of "Good Cause" to Move Segments from Category 5.

Segment previously in Category 5	New placement in 2006	Explanation for change
Segment 214	Category 4a	TMDL completed and approved by EPA for Chromium.
Segment 266	Category 4c	The analysis of new data concluded that the aquatic life use impairment is solely due to low river flow.
Segment 321	Category 4b	The state has proposed an alternative approach to attain WQS by implementing required controls via NPDES permits.
Segment 349	Category 1	The assessment of new data documents that applicable WQS are now being attained.
Segment 350	Category 3	Previous listing in Category 5 was inconsistent with assessment methodology. Available data insufficient to determine attainment status.

In addition, EPA may request that states provide "good cause" for not including on the 2006 section 303(d) list (Category 5) submission segments that were previously included on the list. If EPA makes such a request, the state must explain its basis for not including the segment on the list. Consistent with 40 CFR 130.7(b), "good cause" for not including segments in Category 5 may be based on the following determinations:

- The assessment and interpretation of more recent or more accurate data in the record demonstrate that the applicable WQS(s) is being met.
- The results of more sophisticated water quality modeling demonstrate that the applicable WQS(s) is being met.
- Flaws in the original analysis of data and information led to the segment being incorrectly listed.
- A demonstration pursuant to 40 CFR 130.7(b)(1)(ii) that there are effluent limitations required by state or local authorities that are more stringent than technology-based effluent limitations, required by the CWA, and that these more stringent effluent limitations will result in the attainment of WQSs for the pollutant causing the impairment.

- A demonstration pursuant to 40 CFR 130.7(b)(1)(iii) that there are other pollution control requirements required by state, local, or federal authority that will result in attainment of WQSs for a specific pollutant(s) within a reasonable time (i.e., 4b).
- Documentation that the state included on a previous section 303(d) list an impaired segment that was not required to be listed by EPA regulations, e.g., segments where there is no pollutant associated with the impairment.
- Approval or establishment by EPA of a TMDL since the last section 303(d) list.
- A state inappropriately listed a segment that is within Indian country, as defined in 18 U.S.C. section 1151.
- Other relevant information that supports the decision not to include the segment on the section 303(d) list.

EPA has the authority to disapprove a submission if EPA identifies existing and readily available information that shows a segment is required by the CWA and EPA regulations be included in Category 5 (the section 303(d) list). In that situation, EPA will partially disapprove the state's list and identify additional segments for inclusion in Category 5.

3. Can previously listed segments (without new data or information) be delisted solely because they have not yet been assessed with a new methodology?

No. EPA does not believe it would be appropriate to remove segments previously listed in Category 5 (without new data or information) ***solely*** because they have not yet been assessed with a new methodology. However, there are some situations where a segment may be removed from Category 5 without relying on data and information collected after the date of the previous list. For example, if the state evaluates the pre-existing data and information using a new or revised methodology that accurately reflect the applicable WQS, and the results of that evaluation provide a "good cause" basis for not including the segment on the 2006 section 303(d) list, the segment would no longer need to be included in Category 5. However, the delisting should only occur if it is determined that the basis for the decision is consistent with the state's applicable WQSs and is reasonable.

4. Must Category 5 include threatened segments?

Yes, states must include threatened segments in Category 5 where appropriate (40 CFR 130.7(b)). The definition of "water quality limited segment" in EPA's regulations implementing CWA section 303(d) includes waters not expected to meet applicable water quality standards, which EPA refers to as "threatened" waters. 40 CFR 130.2(j). EPA recommends that states consider as threatened those segments that are currently attaining WQS, but are projected as the result of applying a valid statistical methodology to exceed WQS by the next listing cycle (every two years). For example, segments should be listed if the analysis of existing data and information demonstrates a declining trend in the segment's WQS, and the projected trend will result in a failure to meet that standard by the date of the next list (i.e., 2008 for purposes of the 2006 assessment cycle). The state assessment and listing methodology should describe how the state identifies threatened segments.

5. *Must Category 5 include an impaired segment if the specific pollutant causing the impairment has not been identified?*

Yes, if a designated use is not supported and the segment is impaired or threatened, the fact that the specific pollutant is not known does not provide a basis for excluding the segment from Category 5. These segments must be listed unless the state can demonstrate that no pollutant(s) causes or contribute to the impairment. Prior to establishing a TMDL for such segments the pollutant causing the impairment must be identified.

If the assessment of the new data and information demonstrates that the use impairment is not associated with a pollutant and is attributable only to other types of pollution (e.g., flow or habitat alteration) the segment may be placed into Category 4c. EPA has developed guidance to assist states in identifying the causes of a biological impairment. This document, "Stressor Identification Guidance," was released in December 2000 (EPA 822-B-00-025). This document is also available on the Internet at: http://www.epa.gov/ost/waterscience/biocriteria/stressors/stressorid.pdf.

6. *When should Category 5 include segments covered by fish and shellfish consumption advisories?*

EPA generally believes that fish and shellfish consumption advisories and certain shellfish growing area classifications based on segment specific information demonstrate impairment of CWA section 101(a) "fishable" uses. This applies to fish and shellfish consumption advisories and certain shellfish area classifications for all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. Furthermore, advisories based on the results from probability surveys or other predictive tools having a high degree of confidence (i.e., 95%) may also form the basis of listing segments as impaired. States, on their own prerogative, may choose to place segments into Category 5 (or on the section 303(d) list) using probability surveys when fish and shellfish consumption advisories and certain shellfish area classifications constitute potential risks to human health.

For purposes of determining whether a segment is impaired and should be included on section 303(d) lists states are required to consider all existing and readily available data and information (see 40 CFR 130.7). This should include physical, chemical and biological data, including data on pathogens (such as bacteria and phytotoxins) as well as fish and shellfish tissue concentration data, where such data are existing and readily available. States collect several types of monitoring data to help determine if segments are attaining or maintaining applicable water quality standards. If a state does not consider particular existing and readily available data and information in deciding which segments are impaired and must be placed on the section 303(d) list, they must provide an explanation to EPA of why they did not use such data and information.

While numeric human health criteria for ambient water column concentrations of pollutants are a basis for determining impairment, the attainment of such criteria does not always mean that designated uses are being protected. Segment-specific factors sometimes cause pollutants, including pathogens, to accumulate in fish and shellfish tissue at higher levels than predicted by the methodology used to derive the numeric human health criteria. Examples of such factors include water temperature, nutrient levels, food web structure, the concentration of dissolved organic carbon in the ambient water, and accumulations in the sediment. Hence, a segment can be meeting numeric ambient water quality criteria, but not attaining the designated uses because fish or shellfish tissue concentrations exceed levels that are protective of human health. In instances where tissue concentrations indicate an impairment of the

designated use, even though ambient water column concentrations of pollutants do not indicate an exceedance, EPA recommends states translate the applicable narrative criteria on a site- specific basis or adopt site specific numeric criteria to account for higher than expected exposures from contaminated fish or shellfish tissue and protect designated uses.

Applicable shellfish growing area classifications should be used as part of determinations of attainment of water quality standards and listing of impaired segments. Shellfish growing area classifications are developed by the National Shellfish Sanitation Program (NSSP) using water column and tissue data (where available), and information from sanitary surveys of the contributing watershed, to protect public health. The states review these NSSP classifications every three years. There are certain NSSP classifications and data that do not necessarily indicate WQS violation. These include: "Prohibited" classifications set as a precautionary measure due to the proximity of wastewater treatment discharges, or absence of a required sanitary survey; shellfish tissue pathogen data (which can fluctuate based on short-term conditions not representative of general water quality); or short-term actions to place growing areas in the closed status.

When deciding whether to identify a segment as impaired, states need to determine whether there are impairments of designated uses and narrative criteria, as well as the numeric criteria. Although the CWA does not explicitly direct the use of fish and shellfish consumption advisories or NSSP classifications to determine attainment of water quality standards, states are required to consider all existing and readily available data and information to identify impaired segments on their section 303(d) lists. For purposes of determining whether a segment is impaired and should be included on a section 303(d) list, EPA considers a fish or shellfish consumption advisory, a NSSP classification, and the supporting data, to be existing and readily available data and information that demonstrates non-attainment of a section 101(a) "fishable" use when:

- the advisory is based on fish and shellfish tissue data,
- a lower than "Approved" NSSP classification is based on water column and shellfish tissue data (and this is not a precautionary "Prohibited" classification or the state water quality standard does not identify lower than "Approved" as attainment of the standard),
- the data are collected from the specific segment in question, and
- the risk assessment parameters (e.g., toxicity, risk level, exposure duration and consumption rate) of the advisory or classification are cumulatively equal to or less protective than those in the state's water quality standards.

This applies to all pollutants that constitute potential risks to human health, regardless of the source of the pollutant. However, for fish/shellfish advisories for "dioxin and dioxin-like compounds", due to unique risk characterization issues, listing decisions should be made on a case-by-case basis.

EPA acknowledges that in some cases, fish and shellfish consumption advisories may not demonstrate that a section 101(a) "fishable" use is not being attained in an individual segment. For example, a state may have issued a statewide or regional warning regarding fish tissue contaminated with a bioaccumulative pollutant, based on data from a subset of segments. A state may use a higher fish consumption value in determining the need for an advisory compared to the value used in establishing water quality criteria for the protection of human health. As noted above, a state may also classify shellfish growing areas "Prohibited" as a precautionary measure due to the proximity of wastewater treatment discharges or where a required sanitary survey has not been conducted. In such instances, these

segments need not be listed as impaired under section 303(d) unless there are segment specific data (and the data were not considered during the development or review of a non-precautionary NSSP classification), showing non-attainment of section 101(a) uses.

Some fish and shellfish consumption advisories and NSSP classifications are based on Food and Drug Administration (FDA) action levels as opposed to EPA's risk-based methodology for the protection of human health. FDA action levels are established to protect consumers of interstate shipped, commercially marketed fish and shellfish rather than fish and shellfish caught and consumed within the state. FDA action levels also include non-risk based factors (e.g., economic impacts) in their derivation, while water quality criteria must protect the designated uses without regard to economic impacts.

Where tissue contamination that triggers an advisory based on FDA action levels indicates an exceedance of state human health criteria, the advisory is an indication that section 101(a) "fishable" uses are not attained, and therefore, these segments should be placed into Category 5 or included on the 303(d) list.

7. How should Category 5 handle segments for which WQS are being revised or where temporary variances are in place?

The attainment decision must be based on the applicable WQS. In the case of a standard that is being revised, that standard is not applicable until it has been approved by EPA. 40 CFR 131.21. Therefore states must include in Category 5 segments that do not meet an applicable WQS at the time of listing, even if the new standard is in the process of being revised to be less stringent, until such time as EPA approves the revised standard. However, these segments would not have to be considered a high priority for TMDL scheduling. If EPA approves a revised standard in the future, the segment may be removed from the section 303(d) list at that time provided the segment does not meet the listing requirements with respect to the new standard. With respect to variances, which are temporary and usually apply to a particular discharger, but may also apply to a segment, the applicable WQS typically is the underlying standard, and therefore the segment should be placed in Category 5 if it does not support one or more of the designated uses in the underlying standard.

8. Must Category 5 include a segment where the criterion has been exceeded, but the exceedance is the result of background or natural conditions?

In some cases, a segment may exhibit water quality characteristics or chemical concentrations approaching or exceeding those levels established in the state's water quality standards due solely to non-anthropogenic causes. If the state's water quality standards include a specific exclusion for exceedances caused by "natural conditions", these segments would not be considered impaired (i.e., they could be excluded from Categories 4 and 5). These segments should instead be placed into Categories 1 through 3 as appropriate. For such segments, these background or natural conditions can be defined by assessing the results of water quality monitoring efforts, by the use of predictive models, or a characterization based on data from a watershed with similar hydrologic, land use, and pollutant loading characteristics.

9. What additional information is needed for segments in Category 5?

Identification of Pollutants

Section 130.7(b)(4) requires states to identify, for each segment included on the section 303(d) list (Category 5), the "pollutants causing or expected to cause violations of the applicable water quality standards." For the 2006 listing cycle, segments identified as impaired or threatened based on biological criteria should be included in Category 5 unless the state demonstrates that a pollutant is not causing the impairment, or inclusion in Categories 4a or 4b is warranted. States must identify all pollutants that are known to be causing the impairment of a segment.

Prioritization and TMDL Schedule

Section 303(d)(1) requires states to "establish a priority ranking" for the segments it identifies on the list, taking into account the severity of the pollution and the uses to be made of such segments, and to establish TMDLs "in accordance with the priority ranking." Consistent with section 130.7(b)(4) each state shall also submit biennially a priority ranking including waters targeted for TMDL development in the next two years. Each listed pollutant-segment combination (i.e., those in Category 5) must receive a clear priority ranking, which EPA recommends be either in the form of a scheduled TMDL completion date or a ranking such as high, medium, or low. States have considerable flexibility in deciding how best to apply these factors in prioritizing their list of waters needing TMDLs. For example, a waterbody with a severe water quality problem may be given a high priority for TMDL development in light of the severity of the concern. Conversely, a severe water quality problem may require complex analysis before developing a TMDL, and the state may therefore choose to give it a lower priority to allow time to collect necessary information and complete the analysis. Thus, the most severe water quality problems or the most toxic pollutants need not always be given the highest priority for TMDL development, if circumstances warrant a lower priority. EPA will review the priority ranking but will not take action to approve or disapprove it.

Federal regulations provide that "schedules for submissions of TMDLs shall be determined by the Regional Administrator and the State" (40 CFR 130.7(d)(1)). Factors such as the state's use of a rotating basin approach or commitments specified in court orders or consent decrees may be considered when states develop priorities and schedules. EPA recommends that states develop a schedule for establishing TMDLs as expeditiously as practicable and that the schedule (1) identifies which TMDLs will be established in each year of the upcoming integrated reporting cycle and (2) estimates the approximate number of TMDLs to be established for each year thereafter. EPA encourages the states to ensure that the schedule provides that all TMDLs for every pollutant-segment combination listed on previous section 303(d) lists be established in a time frame that is no longer than 8 to 13 years from the time the pollutant-segment combination is first identified in Category 5. EPA will not take any action on the schedule. The schedule is intended to help the public and EPA to understand the state's priorities and assist in work planning.

In developing their schedules, states will need to decide which TMDLs are higher priority than others. States need not specifically identify each TMDL as high, medium or low priority. Instead, the schedule itself can reflect the state's priority ranking. The CWA does not prescribe a particular method of expressing a priority ranking, and EPA believes a TMDL schedule is a reasonable, efficient way to demonstrate priority ranking. In some circumstances, the order in which TMDLs are established might be

subject to some modifications as the schedule is implemented, based on logistical efficiencies or data availability.

Ohio Environmental Protection Agency

Ohio 2018 Integrated Water Quality Monitoring and Assessment Report

Lake Erie

Division of Surface Water
Final Report

June 2018

Table of Contents

Section A: An Overview of Water Quality in Ohio A-1

Section B: Ohio's Water Resources
B1: Facts and Figures B-1
B2: 2020 Water Quality Goals B-8

Section C: Managing Water Quality
C1: Program Summary – Surface Water C-1
C2: Program Summary – Environmental and Financial Assistance C-19
C3: Program Summary – Drinking and Ground Waters C-20
C4: Program Summary – Environmental Services C-23
C5: Cooperation among State Agencies and Departments C-23
C6: Funding Sources for Pollution Controls C-24
C7: New 303(d) Vision Implementation in Ohio C-28

Section D: Framework for Reporting and Evaluation
D1: Assessment Units D-2
D2: Evaluation of the Ohio River D-6
D3: Evaluation of Lake Erie D-6
D4: Ohio's Water Quality Standards and Use Designations D-7
D5: Sources of Existing and Readily Available Data D-8
D6: Public Involvement in Compiling Ohio's Section 303(d) List of Impaired Waters D-12
D6.1: Solicitation for External Water Quality Data, 2018 Integrated Report Project (May 23, 2017) D-12
D6.1.1: Web Page with Instructions for Submitting Level 3 Credible Data D-13
D6.2: Web Page Announcing 2018 Integrated Report Preparation D-17
D6.3: Notice of Availability and Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-18
D6.3.1: Response to Comments Received regarding the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-19
D6.3.2: Comments Received during the Request for Comments CWA Section 303(d) TMDL Priority List for 2018 ..... D-36

Section E: Evaluating Beneficial Use: Human Health (Fish Contaminants)
E1: Background E-1
E2: Rationale and Evaluation Method E-1
E3: Results E-6
E4: Supplemental Information E-25
E4.1: Calculation of Fish Concentrations from Water Quality Standards Inputs E-25
E4.2: What's the difference between the Fish Consumption Advisory decision and the impairment decision? E-29

Section F: Evaluating Beneficial Use: Recreation
F1: Background (Bacteria) F-1
F2: Evaluation Method (Bacteria) F-2
F3: Results (Bacteria) F-8
F3.1: Lake Erie Public Beaches F-8
F3.2: Rivers and Streams F-17
F3.3: Inland Lakes F-22
F4: Recreation Assessment for Algae in Western Lake Erie F-27
F4.1: Background F-27
F4.2: Rationale and Evaluation Method F-27

F4.3: Results F-36

Section G: Evaluating Beneficial Use: Aquatic Life
G1: Background and Rationale G-1
G1.1: Background G-1
G1.2: General Determination of Attainment Status G-2
G2: Evaluation Method G-3
G2.1: Rivers and Streams: Large River Assessment Units (LRAUs) G-3
G2.2: Rivers and Streams: Watershed Assessment Units (WAUs) G-3
G2.3: Lake Erie Shoreline and Islands: Lake Erie Assessment Units (LEAUs) G-6
G3: Results G-7
G3.1: LRAUs G-8
G3.2: WAUs G-10
G3.3: LEAUs G-14

Section H: Evaluating Beneficial Use: Public Drinking Water Supply
H1: Background H-1
H2: Evaluation Method H-1
H2.1 Beneficial Use Designation H-1
H2.2 Water Quality Standards H-3
H2.3 Attainment Determination H-4
H2.4 Data Sources and Requirements H-5
H2.5 Ohio River Assessments H-6
H3: Results H-6
H4: Supplemental Information H-8

Section I: Considerations for Future Lists
I1: Wetlands I-1
I1.1 Documented High-Quality Wetlands I-2
I1.2 Significant Wetland Areas I-2
I1.3 Next Steps I-3
I2: Mercury Reduction at Ohio EPA I-11
I2.1: Ohio Law I-11
I2.2: Ohio Projects I-11
I2.3: Ohio Resources I-12
I2.4: Federal Rules I-12
I3: Inland Lakes and Reservoirs I-12
I3.1: Background of Ohio's Inland Lake Water Quality Monitoring Program I-13
I3.2: Status of Inland Lakes Program I-13
I3.2.1: Lake sampling – Lake Habitat Aquatic Life Use Assessment I-14
I3.2.2: Water Quality Standards for the Protection of Aquatic Life in Lakes I-14
I3.3: Preview of Future Listings I-15
I3.3.1: Methodology Preview: Lake Habitat Use Assessment I-16
I3.3.2: Results I-16
I4: Future Lake Erie Monitoring and Assessment I-19

Section J: Addressing Waters Not Meeting Water Quality Goals
J1: Ohio's 303(d) Listing Framework J-1
J2: Prioritizing the Impaired Waters: the 303(d) List J-3
J3: Addressing Nutrients in Lake Erie J-10
J4: Summary of Results J-16
J5: Changes for the 2018 303(d) List J-20
J6: Schedule for TMDL Work J-26
J6.1: Ohio TMDL Status J-26

J6.2: Long-Term Schedules for Monitoring and TMDLs J-26
J6.3: Short-Term Schedule for TMDL Development J-26

Section K: Maps
Ohio 8-Digit Hydrologic Units
Section 303(d) Human Health (Fish Tissue) Use Categories Watershed Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Large River Assessment Units
Section 303(d) Human Health (Fish Tissue) Use Categories Lake Erie Assessment Units
Section 303(d) Recreation Use Categories Watershed Assessment Units
Recreation Use Index Scores Watershed Assessment Units
Section 303(d) Recreation Use Categories Large River Assessment Units
Recreation Use Index Scores Large River Assessment Units
Section 303(d) Recreation Use Categories Lake Erie Assessment Units
Section 303(d) Aquatic Life Use Categories Watershed Assessment Units
Aquatic Life Use Index Scores Watershed Assessment Units
Section 303(d) Aquatic Life Use Categories Large River Assessment Units
Aquatic Life Use Index Scores Large River Assessment Units
Section 303(d) Aquatic Life Use Categories Lake Erie Assessment Units
Aquatic Life Use Index Scores Lake Erie Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Watershed Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Large River Assessment Units
Section 303(d) Public Drinking Water Supply Use Categories Lake Erie Assessment Units
Ohio Total Maximum Daily Load Program Progress

Section L: Summary Tables of Waterbody Conditions; List of Prioritized Impaired Waters; and Category 4B Demonstrations
L1: Status of Watershed Assessment Units L-2
L2: Status of Large River Assessment Units L-42
L3: Status of Lake Erie Assessment Units L-43
L4: Section 303(d) List of Prioritized Impaired Waters (Category 5) L-44
L5: Category 4B Demonstrations Contained in Approved Ohio TMDLs to Date L-85
L5.1: Projects included in the 2012 Integrated Report L-85
L5.2: Projects included in the 2014 Integrated Report L-97

Section M: An Overview of Ground Water Quality in Ohio
M1: Introduction M-1
M2: Ohio's Ground Water Programs M-2
M3: Ohio's Major Aquifers M-4
M4: Site-Specific Ground Water Contamination Summary M-8
M5: Major Sources of Ground Water Contamination M-10
M6: Summary of Ground Water Quality by Aquifer M-15
M7: Conclusions and Future Directions for Ground Water Protection M-40

Section N: References

List of Tables and Figures

Tables

B-1. Ohio's water resource statistics B-1
B-2. List of Ohio's principal streams and large rivers B-4
B-3. 2020 goals for four beneficial uses, Lake Erie and the Ohio River B-9
C-1. OWDA loans administered during calendar years 2015-2016 ..... C-26
D-1. Ohio water quality standards in the 2018 IR D-8
D-2. Data types used in the 2018 IR D-10
D-3. Descriptions of data used in the 2018 IR from sources other than Ohio EPA D-11
E-1. Comparison between fish concentration values and FCA program values E-3
E-2. Example data for calculating a weighted average fish tissue value E-4
E-3. A summary of changes in attainment from 2016 to 2018 IR E-6
E-4. Waters not supporting the human health use because levels of PCBs or mercury in fish tissue exceed the threshold level upon which the WQS criterion is based. These waters are category 5. ..... E-7
E-5. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based. These waters are category 1 ..... E-9
E-6. Waters fully supporting the human health use because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based and which were categorized as impaired in the 2016 IR. These waters have become category 1 with the current assessment E-11
E-7. Waters with contaminants other than PCBs and mercury that affect fish tissue (included on the 303(d) list). These waters are category 5 ..... E-11
E-8. Waters for which the existing unimpaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 1h E-11
E-9. Waters for which the existing impaired status cannot be confirmed because data have become historical and not enough new data are available. These waters are category 5h E-14
E-10. Waters with current fish tissue data where inadequate samples exist to determine impairment status. These waters are category 3i E-20
E-11. Large rivers and their impairment status E-22
E-12. Inland lakes and their impairment status E-23
E-13. Lake Erie assessment units and their impairment status E-25
F-1. Summary of the RU assessment methods F-2
F-2. Determining assessment status of Lake Erie shoreline AUs F-5
F-3. Determining assessment status of WAUs and LRAUs F-7
F-4. Recreation index score matrix F-8
F-5. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the western basin (Sandusky Bay and west) F-11
F-6. Seasonal geometric mean *E. coli* levels and advisory postings at public Lake Erie shoreline beaches in the central basin (east of cedar point) F-12
F-7. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the central basin shoreline AU F-14
F-8. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the western basin shoreline AU F-14
F-9. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the islands shoreline AU. F-15

F-10. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded the BAV relative to the total number of days in the sampling period, 2013-2017, for the Sandusky basin shoreline AU. F-15
F-11. Aggregated exceedance frequencies at 65 Lake Erie public beaches from 2013-2017 (pooled by Lake Erie shoreline AU to report use support). F-17
F-12. Annual Ohio EPA *E. coli* sampling effort and RU assessment (using Ohio EPA data) in Ohio streams, rivers and inland lakes, 2011-2017 recreation seasons F-18
F-13. Overall differences in the assessment of RU attainment, 2010-2018 ..... F-18
F-14. Summary assessment status of the RU in Ohio's WAUs by assessment cycle F-20
F-15. Summary assessment status of the RU in Ohio's LRAUs F-21
F-16. Summary assessment status of the RU for inland lakes, 2013-2017 ..... F-22
F-17. Swimming advisory posting at Ohio's inland lake public beaches (2013-2017). F-25
F-18. Proposed Ohio Lake Erie AUs F-28
F-19. Data collected in Ohio waters of Lake Erie that is credible data level 3 or could likely be approved as level 3 with review and coordination F-31
F-20. The number of 10-day time frames exceeding the 30 percent coverage threshold (with 20,000 cells/mL) or greater) in the western basin open water unit for each year beginning in 2012 ..... F-36
G-1. Summary of aquatic life use assessment for Ohio's WAUs, LRAUs and LEAUs: 2002-2018 Integrated Report cycles G-9
G-2. Breakdown by size category of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-3. Breakdown by designated or recommended aquatic life use of sites in full, partial and non-attainment in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 ..... G-12
G-4. Prevalence of the top five causes of aquatic life use impairment in WAUs and LRAUs based on biological and water quality survey data collected from 2003-2016 ..... G-12
H-1. PDWS attainment determination. H-4
H-2. Waters designated as impaired for (not supporting) the PDWS beneficial use. H-12
H-3. Summary of PDWS assessment results for the nitrate, pesticide and algae indicators H-18
I-1. List of high-quality wetland areas I-3
I-2. List of significant wetland areas I-8
I-3. Proposed lake habitat use criteria I-15
I-4. Summary of the lake habitat use assessment for lakes sampled in 2015-2016 using the draft assessment methodology described in this section I-17
J-1. Category definitions for the 2018 Integrated Report and 303(d) list J-2
J-2. Potential listing opportunities in Ohio's listing framework. J-3
J-3. Priority points for impaired AUs. J-5
J-4. Summary of results for each beneficial use J-16
J-5. Number of AUs removed from or added to the 303(d) list J-20
J-6. Summary of reasons for changes to the 2018 303(d) list J-20
J-7. Removals from the 303(d) list because of a flaw in the original listing J-21
J-8. Removals from the 303(d) list because of new data J-21
J-9. Addition to the 303(d) list because of flaw in original listing J-23
J-10. Additions to the 303(d) list because of new data J-23
J-11. Ohio TMDLs approved by U.S. EPA at the 11-digit hydrologic unit scale J-27
J-12. Ohio TMDLs approved by U.S. EPA at the 12-digit hydrologic unit scale J-31
J-13. Short-term schedule for TMDL development J-33
M-1. Summary of Ohio's Ground water protection programs. M-3
M-2. Ground water contamination summary M-8
M-3. Major sources of potential ground water contamination M-14

M-4. Counts of public water systems where 2007-2017 decadal mean values of compliance data occur in the Watch List and Impaired Category M-17
M-5. Counts of wells where 2007-2017 decadal mean values of AGWQMP data occur in the Watch List and Impaired Category (maximum values used for nitrate). M-27

Figures

B-1. Map of Ohio's principal streams and large rivers. B-2
B-2. Ohio Scenic River System B-3
C-1. Ohio Lake Erie AOCs and major Lake Erie tributaries C-7
D-1. Ohio's large rivers (rivers with drainages greater than 500 mi^2) and their watersheds D-3
D-2. Ohio's 12-digit WAUs and 8-digit hydrologic units D-4
D-3. Ohio's Lake Erie assessment units – western basin, islands, Sandusky basin and central basin shorelines and open water areas D-5
E-1. Illustration of the relationship among the WQS values, the values that trigger issuance of fish consumption advisories (FCAs) and the resulting decision regarding waterbody impairment associated with an FCA. E-2
E-2. Flowchart for the categorization of fish tissue data for the IR E-6
F-1. Lake Erie public beaches sampled under Ohio's bathing beach monitoring program. F-3
F-2. Erie and Sandusky County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-3. Cuyahoga and Loraine County public beaches sampled under Ohio's bathing beach monitoring program. F-4
F-4. Example of bacteria sampling locations, upper Walhonding River study area (2010) F-6
F-5. Frequency of advisory postings at Ohio's Lake Erie public beaches F-16
F-6. Histogram of RU index scores for Ohio's WAUs F-19
F-7. New Ohio Lake Erie AUs F-29
F-8. Monitoring locations in the western basin of Lake Erie in 2017 ..... F-30
F-9. Bloom severity observed and projected (with 40 percent TP reduction) since 2002 ..... F-35
G-1. Flowchart for determining if WAU score can be derived based on available sampling locations. G-5
G-2. Percent attainment status and goal progress ("100 percent by 2020") for monitored miles of Ohio's LRAUs (23 rivers/38 AUs/1247.54 miles total) G-10
G-3. Average full attainment watershed score for Ohio's HUC11 WAUs (IR cycles 2002-2010) and HUC12 WAUs (IR cycles 2010-2018). G-13
G-4. Breakdown by designated or recommended aquatic life use of sites in monitored WAUs (1,007 HUC12s) based on data collected from 2007-2016 (n= 3,911 sites) G-13
G-5. Status and trend of aquatic life use "80 percent by 2020" goal for wading and principal stream and river sites in Ohio based on the last five IR cycles. G-14
G-6. Average IBI scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-16
G-7. Average MIwb scores compared to habitat-scaled targets based on sampling passes available for sites (n=33) along the Lake Erie shoreline from Toledo to Conneaut, 2011-2016 ..... G-17
H-1. Ohio WAUs, LRAUs and LEAUs that contain at least one active surface water drinking water intake. H-2
H-2. AUs with nitrate indicator results H-9
H-3. AUs with pesticide indicator results H-10
H-4. AUs with algal toxin indicator results H-11
I-1. Supplemental weekly sampling locations for chlorophyll and microcystin; sampled by University of Toledo and the Ohio State University/Stone Laboratory (boxed sites) researchers in 2017 ..... I-20
J-1. Listing by smaller AUs and individual beneficial uses J-3
J-2. Priority points assigned based on use impairment or other factors (extra points). J-4

J-3. Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey. J-7
J-4. Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey. J-9
J-5. Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009. J-10
J-6. Key steps in the state TMDL and binational Annex 4 processes. J-13
J-7. Summary of 2018 IR results for watershed AUs by beneficial use. J-17
J-8. Summary of 2018 IR results for large river AUs by beneficial use. J-18
J-9. Summary of 2018 results by AU type. J-19
J-10. Summary of reasons for changes to the 2016 303(d) list. J-21
M-1. Aquifer types in Ohio modified from ODNR glacial and bedrock aquifer maps. M-4
M-2. Iron distribution in AGWQMP wells, overlain on major aquifers. M-5
M-3. Manganese distribution in AGWQMP wells, overlain on major aquifers. M-6
M-4. Distribution of public water systems on impaired list for arsenic for both treated and raw waters. M-34
M-5. Distribution of public water systems in impaired category and on the watch list for sulfate in raw water. M-35
M-6. Distribution of public water systems on fluoride MCL watch list for treated and raw water. M-36
M-7. Distribution of public water systems with maximum nitrate in treated and raw water greater than the MCL. M-37

List of Acronyms and Abbreviations

AmphIBI	amphibian index of biotic integrity
AMP	Atrazine monitoring program
AOC	Area of Concern (as identified under the Great Lakes Water Quality Agreement)
ARRA	American Recovery and Reinvestment Act of 2009
AU	assessment unit
BAV	beach action value
BEACH	Beaches Environmental Assessment and Coastal Health (Act)
BMP	best management practice
BNR	biological nutrient removal
BUI	Beneficial Use Impairment (as described in the Great Lakes Water Quality Agreement)
CABB	Center for Applied Bioassessment and Biocriteria
CAFO	Concentrated Animal Feeding Operations
CDBG	Community Development Block Grant
CDC	Center for Disease Control
cfu	colony forming unit
Corps	U.S. Army Corps of Engineers
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSO	combined sewer overflow
CSP	Conservation Stewardship Program
CWH	coldwater habitat
CWA	Clean Water Act
DDAGW	Division of Drinking and Ground Waters
DDT	dichlorodiphenyltrichloroethane
DEFA	Division of Environmental and Financial Assistance
DES	Division of Environmental Services
DLG	digital line graph
DRG	digital raster graphic
DSW	Division of Surface Water
EAG	External Advisory Group
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
EWH	exceptional warmwater habitat
FCA	fish consumption advisory
FFY	federal fiscal year
FSA	Farm Service Agency
FWPCA	Federal Water Pollution Control Act
GIS	Geographic Information System
GLLA	Great Lakes Legacy Act
GLRC	Great Lakes Regional Collaboration
GLRI	Great Lakes Restoration Initiative
GLSM	Grand Lake St. Marys
GLWQA	Great Lakes Water Quality Agreement
GRP	Grassland Reserve Program
GRTS	Generalized Random Tessellation Stratified (survey design)
HAB	harmful algal bloom
HSD	honest significant difference
HUC	hydrologic unit code

IBI	index of biotic integrity
ICI	invertebrate community index
IDP	indirect discharge permit
IR	Integrated Report
kg	kilogram
L	liter
LA	load allocation
LAMP	lakewide action and management plan
LCI	Lake Condition Index
LDI	Landscape Development Intensity
LEAU	Lake Erie assessment unit
LEC	(Ohio) Lake Erie Commission
LENT	Lake Erie nutrient targets
LEPF	(Ohio) Lake Erie Protection Fund
LH	lake habitat
LHD	local health district
LRAU	large river assessment unit
LRW	limited resource water
LTCP	long-term control plan
MBI	Midwest Biodiversity Institute
MF	membrane filter
mg	milligram
mi^2	square miles
mL	milliliter
MIwb	modified index of well-being
MOR	monthly operating data
MPN	most probable number
MRBI	Mississippi River Basin Initiative
MS4	municipal separate storm sewer systems
MWH	modified warmwater habitat
NARS	National Aquatic Resource Survey
NCCA	National Coastal Condition Assessment
NCWQR	National Center for Water Quality Research
NEORSD	Northeast Ohio Regional Sewer District
ng	nanogram
NHD	National Hydrography Dataset
NLCD	National Land Cover Dataset
NOAA	National Oceanic and Atmospheric Administration
NOI	notice of intent
NPDES	National Pollutant Discharge Elimination System
NPS	nonpoint source
NRCS	Natural Resources Conservation Service
NSMP	Nonpoint Source Management Plan
NSSP	National Shellfish Sanitation Program
NWI	National Wetland Inventory
NWQI	National Water Quality Initiative
OAC	Ohio Administrative Code
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
OMZA	outside mixing zone average

ORC	Ohio Revised Code
ORSANCO	Ohio River Valley Water Sanitation Commission
OSIP	Ohio Statewide Imagery Program
OTMP	Ohio Tributary Monitoring Program
OWDA	Ohio Water Development Authority
OWRC	Ohio Water Resources Council
PAHs	polyaromatic hydrocarbons
PHA	public health advisory
ppb	parts per billion
PCB	polychlorinated biphenyls
PCR	primary contact recreation
PDWS	public drinking water supply
POTW	publicly owned treatment works
PS	point source
PTI	permit to install
PTO	permit to operate
PWS	public water supply
QA	quality assurance
QC	quality control
QDC	qualified data collector
QSC	Quicksilver Caucus
RAP	Remedial Action Plan
RAS	return activated sludge
RF3	Reach File Version 3
RM	river mile
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SFY	state fiscal year (July 1 to June 30)
SIU	significant industrial user
sq mi	square miles
SSM	single-sample maximum
STORET	STOrage and RETtrieval (a U.S. EPA water quality database)
STV	statistical threshold value
SWIF	Surface Water Improvement Fund
SWIMS	Surface Water Information Management System
TDS	total dissolve solids
TMDL	total maximum daily load
TNTC	too numerous to count
TOC	total organic carbon
µg	microgram
USDA	United States Department of Agriculture
U.S. EPA	United States Environmental Protection Agency
USC	United States Code
USGS	U.S. Geological Survey
UV	ultraviolet
VIBI	vegetation index of biotic integrity
VIBI-FQ	VIBI – floristic quality
WAS	waste activated sludge
WAUs	watershed assessment unit
WBLE	western basin of Lake Erie

WEG	(Ohio EPA's) wetland ecology group
WHIP	Wildlife Habitat Incentives Program
WHO	World Health Organization
WLA	wasteload allocation
WPCLF	Water Pollution Control Loan Fund
WQ	water quality
WQC	Water Quality Certification (Section 401)
WQM	Water Quality Management (plan)
WQPSD	Water Quality Permit Support Document
WQS	water quality standards
WRP	Wetlands Reserve Program
WRRSP	Water Resource Restoration Sponsor Program
WSRLA	Water Supply Revolving Loan Account
WWH	warmwater habitat
WWTP	wastewater treatment plant

Executive Summary

The *Ohio Integrated Water Quality Monitoring and Assessment Report* summarizes water quality conditions in the State of Ohio. This report satisfies Ohio's water quality reporting requirements under Sections 303(d), 305(b) and 314 of the federal Clean Water Act. This report was last updated in 2016. **Analysis and listing changes are based on data collected during 2015 and 2016 for aquatic life and human health (fish tissue) uses; recreation and public drinking water supplies uses consisted of data from 2016 and 2017**.

Using methods devised to determine the suitability of waters for four specific uses—aquatic life (fish and aquatic insects), recreation (such as boating and swimming), human health (related to fish tissue contamination) and public drinking water supplies—available data were compared with water quality goals. The results indicate which waters are meeting goals and which are not. Waters not meeting the goals for one or more of the four types of uses are referred to as *impaired.* The waters found to be impaired are prioritized and scheduled for further study and restoration.

This report describes the methods used to judge impairment of each type of use and have evolved in each reporting cycle as the Agency gains access to more data and develops better ways to interpret them.

Results are reported for 1,538 watershed units, 38 large river units (in Ohio's 23 rivers that drain more than 500 square miles) and seven Lake Erie units. Additional information on streams draining between 20 and 500 square miles is also presented as this subset of waterbodies is used to calculate and track progress of Ohio's 80 percent full attainment by 2020 goal for wading and principal streams and rivers.

The percent of monitored miles of Ohio's large rivers in full attainment stayed steady compared to the same statistic reported in the 2016 IR. The 100 percent full attainment by 2020 aquatic life goal statistic for Ohio's largest rivers now stands at 87.5 percent, compared to 87.4 percent from the 2016 report. Conversely, smaller streams continue to improve with the percent of assessed sites in full aquatic life use attainment increasing from 66.1 percent to 69.3 percent. The top reasons for aquatic life impairment continue to be sediment, nutrients, habitat modification, hydromodification and organic enrichment.

For the human health use (fish tissue), polychlorinated biphenyl (PCB) contamination in fish is the cause of most of the human health impairments in Ohio. Mercury is the second leading cause.

The chemicals of concern causing impairment of the public drinking water supply use include nitrate, atrazine and cyanotoxin (due to certain algae). The primary source of the chemicals is nonpoint source runoff from agricultural land use. Additional sources of nitrate include home and commercial fertilizer application, failing septic systems, unsewered areas and wastewater treatment plant discharges. Of the 119 public drinking water supply assessment units, 37 are now listed as impaired by algae, with another 17 on the watch list for algae.

The recreation (bacteria) use analysis focuses on the number of bacteria in the water. For Lake Erie public beaches, the frequency of swimming advisories varies widely, ranging from 1.2 percent to more than 50 percent. Generally, beaches located near population centers have the most problems. Results are also reported for streams and inland lakes.

The recreation use has also been assessed for algae impacts in the western basin of Lake Erie. The western basin shoreline, the islands shoreline and the western basin open water assessment units are all listed as impaired by algae.

Of the 6,316 possible category assignments, the 2018 303(d) list includes changes in 209, with 69 delistings and 135 new listings. Most 303(d) removals and new listings are due to new data.

Changes since the 2016 Integrated Report

Changes made between the 2016 Integrated Report and the 2018 Integrated Report are as follows:

- This report contains revised assessment units for the entire Ohio portion of Lake Erie in Section D1.
- This report also discusses future methodology development for recreation assessment of Lake Erie based on algae blooms in Section I.
- The methodology for evaluating the recreation (bacteria) use has been updated to include the revised *E. coli* water quality criteria, effective January 2016, in Section F1.
- A new subcategory, 5p, was added to track which impairments are based on threatened status, primarily for nutrients.

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

D7. Public Comments and Responses to Comments on Draft Report

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

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

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

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

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

Comments Related to Specific Watersheds

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Addressing Waters Not Meeting Water Quality Goals

The federal Clean Water Act (CWA) requires that states identify waters not meeting water quality goals and then prioritize them for action to restore their beneficial uses[1]. The resulting list of prioritized impaired waters is known as the 303(d) list. Ohio's 2018 303(d) list is presented in Section L4 of this report.

Ohio made substantial changes to its listing process in 2010 (see Sections A and J in the *2010 Integrated Report* [Ohio EPA, 2010]); Ohio's *2012 Integrated Report* and 303(d) list (Ohio EPA, 2012) contained relatively few changes compared to the major adjustments made in 2010. A significant change to the 2014 report included the addition of a new indicator (algae) to the public drinking water supply (PDWS) use. The 2016 report contained changes in how the information was organized and what data sets were used (for instance, 2015 data was included for both recreation and PDWS uses) and was amended to include new open water assessment units for Lake Erie and a new recreation assessment methodology based upon algae. In 2018, the most significant changes are to the recreation use assessments and how Lake Erie Assessment Unit are defined (increased from six to seven units). The assessment based on bacteria has been updated to comply with the new *E. coli* WQS which include a 90-day geometric mean and statistical threshold value (see Sections F1-F3). In addition, an assessment method for recreation based on algae for the western basin of Lake Erie has been added in Section F4.

This section outlines the listing framework, lays out the prioritizing and delisting processes and results and reports on the status of Ohio total maximum daily load (TMDL) efforts including schedules for future TMDLs in Ohio.

J1. Ohio's 303(d) Listing Framework

The process of listing involves assigning a condition status (a category) for each of four beneficial uses for each assessment unit (AU). Data requirements, descriptions of available data, assessment methodologies and results were discussed and reported by individual beneficial use in Sections E, F, G and H.

In 2010, Ohio modified the five-category listing structure suggested by U.S. EPA to accommodate listing by beneficial use and introduced subcategories to give more information about the status of each water. In 2012, one additional subcategory - t - was added to aid reporting the status of AUs relative to approved TMDLs and data availability. In 2014, the "t" subcategory was altered slightly and a new category - d - was added to better reflect circumstances encountered as Ohio EPA revisits watersheds having approved TMDLs. In 2016, a new subcategory in Category 5 (5-alternative or 5-alt) was added to report on alternative restoration approaches for CWA 303(d) listed waters. Such waters will still require TMDLs until water quality standards are achieved. Ohio does not have any AUs listed under 5-alt in this report but anticipates using this subcategory in the future. In 2018, a new subcategory "p" is added under Category 5 to track which impairments are based on threatened status, primarily for nutrients. Table J-1 summarizes the categories and subcategories used in this report.

Also, in 2010, Ohio began listing by beneficial use within each AU and reporting on a smaller AU size. Watershed AUs shifted from an average size of 130 square miles to 27 square miles. Under the old system, an impairment of one beneficial use caused the AU to be Category 5 (impaired) regardless of the status of other uses.

[1] Beneficial uses include aquatic life, human health (fish contaminants), recreation and public [drinking] water supply.

Table J-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[2]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[3] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[4]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

Figure J-1 illustrates the significance of these changes in the listing procedures. A = aquatic life use; R = recreation use; H = human health use; and P = public water supply use. The numbers refer to the categories described in Table J-1 above. In the example, an AU listed in 2008 as impaired (category 5) appeared on the 2010 303(d) list as five units with four uses each; thus, reporting one piece of information changed to reporting 20 pieces of information. Whereas the 2008 list indicated only that the unit was impaired, the new listing indicates all the following information:

- Aquatic life use is impaired (5) in one unit, not impaired (1) in one and unknown (3) in one. A TMDL to address impairments has been completed in one unit (4A) and the impairment in the remaining unit is being addressed in some other way (4B, for example, a discharge permit).
- Recreation use is impaired (5) in three units, unknown (3) in one and a TMDL to address the impairment in one unit has been completed (4A).
- Human health results based on fish tissue analysis indicate that four of the five units are impaired (5) and one is unknown (3).
- Public drinking water supplies exist in only two of the five units and one of those is impaired (5). The status of the other is unknown (3).

[2] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[3] HUC means hydrologic unit code.
[4] Ohio currently has no waters that are listed under this subcategory.

For the aquatic life use, Ohio EPA continues the transition that began in 2010 of translating data evaluated at the 11-digit hydrologic unit size to the smaller 12-digit size. We expect that the few remaining relic categories will be dealt with as those areas are monitored again.

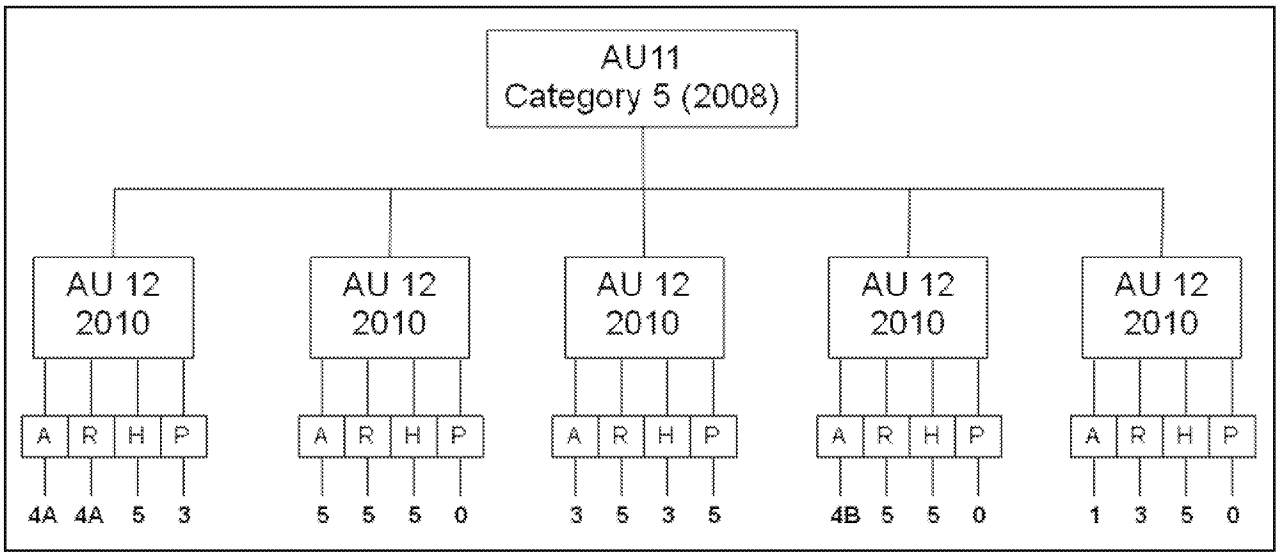

Figure J-1 — Listing by smaller AUs and individual beneficial uses.

Table J-2 shows the number of potential listings that could result from the combination of smaller AUs and listing by individual use.

Table J-2 — Potential listing opportunities in Ohio's listing framework.

	2008 and Before			2010 and After		
AU Types	Number of AUs	Status Reports per Unit	Total Number of Possible Listings	Number of AUs	Status Reports per Unit	Total Number of Possible Listings
Watershed	331	1	331	1538	4	6,152
Large river	23	1	23	38	4	152
Lake Erie shore	3	1	3	3	4	12
Totals	357	1	357	1,579	4	6,316

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

As previously stated, the impaired waters are identified and assigned a category by individual beneficial use in Sections E, F, G and H. After waters are identified as impaired and it is determined that a TMDL is required, the waters are prioritized to produce the 303(d) list (see Section L4). Because Ohio uses a highly integrated monitoring and TMDL linkage to ensure efficient use of resources, it makes sense to continue to set priorities by AU rather than by individual use.

Ohio River and Open Waters of Lake Erie

ORSANCO has lead responsibility for the multi-jurisdictional Ohio River water quality as outlined in Section D2. Binationally, the U.S. and Canada are working together under the GLWQA to address water quality issues in Lake Erie. Ohio EPA is actively participating in TMDLs for tributaries as well as many other actions for Lake Erie outlined in Section J3, so priority for Ohio EPA-initiated TMDLs is assigned a low priority for these waters. TMDLs in watersheds that drain to the Ohio River and Lake Erie will reduce the pollutant load delivered to each water.

Inland Waters and Lake Erie Shoreline

A point system is used to assign priority to impaired AUs. A total of 22 points could be assigned to an AU, distributed as shown in Figure J-2. The priority results for specific AUs are reported in Section L and in AU summary information available on the web page.

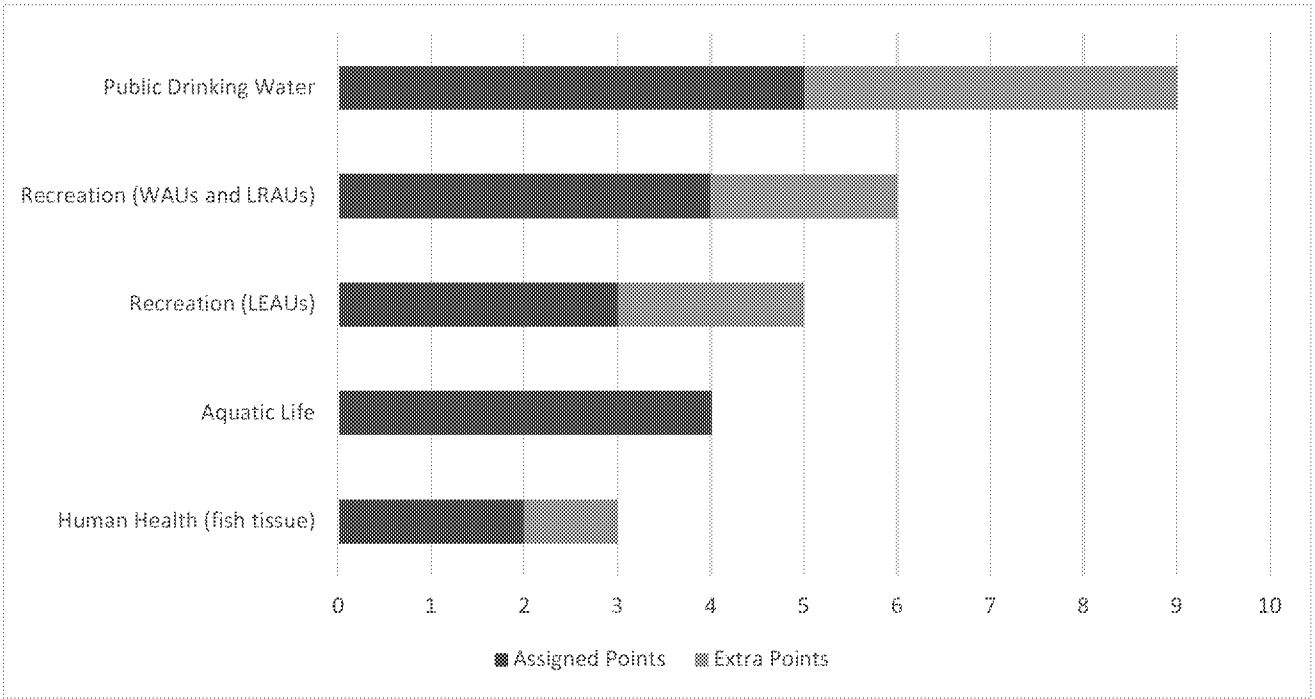

Figure J-2 — Priority points assigned based on use impairment or other factors (extra points).

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.

Two additional points may be awarded to AUs that are impaired for the recreation use and contain Class A waters. Class A waters are those most suitable for recreation, such as popular paddling streams and lakes with public access points developed, maintained and publicized by governmental entities. Priority points for Lake Erie recreation use are calculated based on the bathing water geometric mean for *E. coli* and the percentage of days that the AU exceeded that criteria. An impaired AU gets one point if the percentage of days in exceedance was in the range of 0 to 10 percent; two points if in the range of 10.1 percent to 20

percent; and three points if the percentage of days in exceedance was greater than 20.1 percent. Two additional points may also be awarded to AUs that are impaired for recreation use based on algae.

Table J-3 — Priority points for impaired AUs.

Point Values	Condition	Number of AUs		
		WAUs	LRAUs	LEAUs
Human Health Use impairment (fish tissue contaminants) (maximum of 3 points)				
2	Listed as impaired for Fish Contaminants (Human Health Use)	436	32	4
1	Additional point in AUs that exceed 500 ppb for PCBs or Hg	3	0	0
Recreation Use impairment – WAUs and LRAUs (maximum of 6 points)				
1	Listed as impaired with AU score between 0 and 25	108	0	
2	Listed as impaired with AU score between 75.1 and 100	92	17	
3	Listed as impaired with AU score between 25.1 and 50	271	2	
4	Listed as impaired, with AU score between 50.1 and 75	279	7	
2 extra	Additional points if AU contains Class A waters	74	26	
Recreation Use impairment - LEAUs (maximum of 5 points)				
1	Listed as impaired with 0 to 10% of season exceeding *E. coli* criteria			1
2	Listed as impaired with 10.1% to 20% of season exceeding *E. coli* criteria			1
3	Listed as impaired with > 20.1% of season exceeding *E. coli* criteria			2
2 extra	Additional points if AU is impaired for algae			3
Aquatic Life Use impairment (maximum of 4 points)				
1	Listed as impaired, with AU score between 0 and 25	161	0	2
2	Listed as impaired, with AU score between 75.1 and 100	35	8	0
3	Listed as impaired, with AU score between 25.1 and 50	119	2	2
4	Listed as impaired, with AU score between 50.1 and 75	93	2	0
Public Drinking Water Use impairment (maximum of 9 points)				
5	Listed as impaired for Public Drinking Water Use for one indicator	33	5	6
2 extra	Additional points in AUs impaired for each additional indicator	1	3	0
1	Not listed as impaired, but on watch list; one point for each indicator	33	3	0

As outlined in Section C3, the priority schedule for TMDL projects in Table J-15 was developed considering the above information, as well as the following:

- Social Factors (highly used recreational waters, drinking water supply for significant populations, ongoing/sustained involvement of any local groups or government, etc.)
- Value Added (is a TMDL the most efficient way to achieve improved water quality?)
- Is there an approved watershed action plan – if so how many implemented projects?
- How much regulatory authority exists over sources?
- Is there an alternative way to improve water quality more quickly than a TMDL? (for example, immediate implementation of an existing plan or projects, or imposing more stringent permit limits to address a localized problem)
- Are there other factors in play? Examples include:
    - Pending enforcement for a discharger (possible 4B option)
    - U.S. Army Corps of Engineers modeling of reservoir discharge to improve downstream water quality
    - Local or statewide strategy or requirements in place to address an issue/pollutant (for example, new health department rules for home sewage treatment systems if they are sole/primary source of impairment)

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.

In the *2014 Integrated Report*, Ohio listed waters impaired by algal toxins for the first time. In the 2016 report, more waters are listed, especially lakes and reservoirs. 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.

Based on a review of the inland lakes or reservoirs that were listed as impaired or on the Watch List for algae indicators in the 2014 Integrated Report, as well as the more recent data collected for algae at PDWS with intakes in inland lakes or reservoirs that led to the 303(d) listing in this report, the following inland lakes were chosen as Ohio's priorities for the next few years:

- Tappan Lake in Harrison county (upper Little Stillwater Creek)
- W.H. Harsha Lake in Clermont County (Lucy Run - East Fork Little Miami River)
- Clyde/Beaver Creek Reservoir in Seneca County (Beaver Creek, Green Creek)

The impairments (or watch list parameters) cited include nitrate, pesticides and algae indicators. Where there is a TMDL developed, it is older and/or does not include the stream reaches that most impact the lake/reservoir. In most cases, there are active local parties interested and/or there is a sizable population served by these sources. Ohio EPA considers nutrients (primarily phosphorus as the TMDL parameter) to be the priority for the inland lake efforts. However, the cause of impairment in more than one area also includes pesticides and/or nitrates, so other pollutants may be added to the TMDL or alternative plan. These waters are listed on the 303(d) Priority list in Section L4 as follows:

AU Number	AU Name	Sq. Mi. in Ohio	Human Health	Recreation	Aquatic Life	PDW Supply	Priority Points
05040001 15 03	Upper Little Stillwater Creek	29.72	1	1	3	5	5
05090202 12 03	Lucy Run-East Fork Little Miami River	32.48	1	1	5	5	7
04100011 12 02	Beaver Creek	29.3	3i	4Ah	4A	5	5
04100011 12 03	Green Creek	30.78	1	5	4A	5	9

While they do not have the highest priority points, the AUs with higher priority points that include a PDWS impairment already have a TMDL under development or will be addressed through other means such as the Great Lakes Water Quality Agreement Annex 4 nutrient reduction efforts discussed in J3.

Tappan Lake

- Stillwater Creek basin – primarily forest with mining influences.
- 2,350 acres of water surface.
- Provides drinking water to the Village of Cadiz (pop. ~ 3,350).
- Lake is operated by the U.S. Army Corp of Engineers. It is a multipurpose project for flood reduction, recreation and fish and wildlife enhancement.
- Assessed by Ohio EPA in 2012-2013 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin).

2018 IR Update

The Tappan Lake Nutrient Reduction Initiative (TLNRI) was formed at the end of 2017 by the Muskingum Watershed Conservancy District and the Village of Cadiz. TLNRI's goal is to eliminate the presence of harmful algal blooms and their resultant water-borne toxins in Tappan Lake within the next decade. The TLNRI has outlined the following steps toward achieving their goal:

- Phase 1: Comprehensive study of existing water quality data for the watershed and identification of gaps (year one)
- Phase 2: Collection of data to fill gaps, evaluation and selection of remedial actions for the watershed (years two through four)
- Phase 3: Implementation of action plan for the watershed (years five through 10)

Ohio EPA is an active partner in the initiative and will provide support through participation in the four subgroups. The Stillwater Creek watershed is a high priority project for either a TMDL or an alternative plan. The Agency will continue to participate in the TLNRI efforts and determine which approach is most appropriate as that work unfolds.

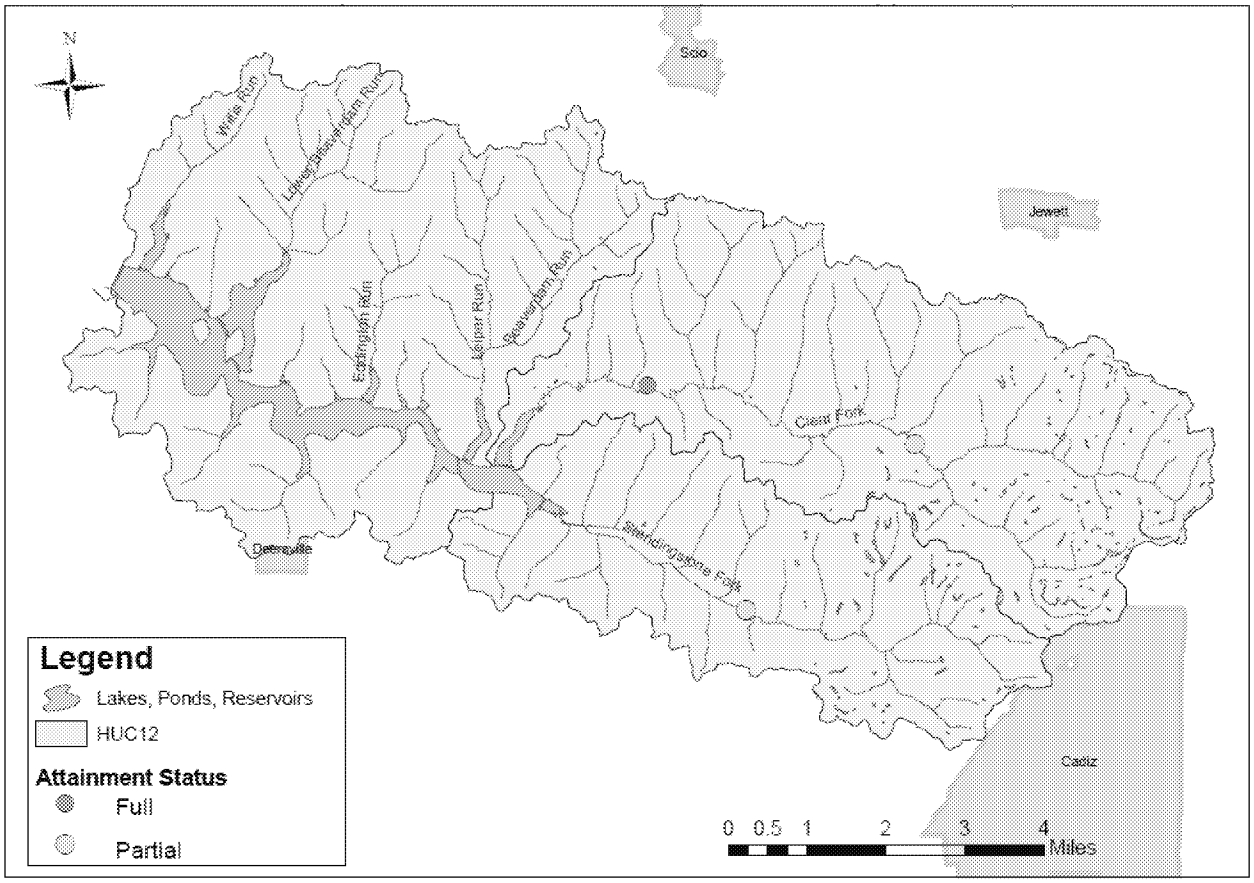

Figure J-3 — Watershed upstream from Tappan Lake and attainment status of sites from 2012 Stillwater River survey.

William H. Harsha Lake

- Located in the East Fork of the Little Miami River watershed – largely agriculture and forest with some urban influence.
- 2,160 acres of water surface.
- Lake is operated by the U.S. Army Corp of Engineers and is a multipurpose project for flood reduction, water supply, recreation and wildlife habitat.
- *2014 Integrated Report* listed the lake as impaired for PDWS based on algae indicators (microcystin) and placed it on the watch list for atrazine.

From the *Ohio EPA East Fork Little Miami River Technical Support Document, 2014*:

- Clermont County operates a community public water system that serves a population of approximately 117,097 people. The water supply sells water to the village of Batavia, village of Williamsburg and New Richmond Robin-Grays water system. Clermont County operates two ground water plants and one surface water plant. The BMW surface water plant draws water from an intake structure on Harsha (East Fork) Lake. The system's treatment capacity is approximately 27.5 million gallons per day, but current average production is 12.5 million gallons per day.
- There are several environmental organizations active in the East Fork Little Miami River watershed. The oldest of these is Little Miami Incorporated (LMI) which has been active for 45 years. Most of LMI's activities have involved the purchase of conservation easements or property purchases in the riparian zone of the river. Clermont County and SWCDs in Clermont, Brown, Highland and Clinton counties formed the East Fork Watershed Collaborative to take advantage of ODNR's Watershed Coordinator Program.
- Several research projects have been initiated in the East Fork watershed and Harsha Lake by U.S. EPA's National Exposure Research Laboratory in Cincinnati and the U. S. Army Corps of Engineers. Among other topics research and monitoring are examining HABs and nutrients, impacts on the Clermont County water intake, carbon sequestration, methane release, nutrient trading, environmental tipping points and fish population genetics. Currently, seven different projects are conducting monitoring in Harsha Lake.

2018 IR Update

The East Fork Watershed Cooperative, formed in 2001, continues to be active in addressing water quality issues in the East Fork Little Miami River watershed. The Cooperative is in the process of updating watershed action plans into Nine Element Nonpoint Source Implementation Strategy Plans. The first updated plan for the Fivemile Creek HUC 12, approved by Ohio EPA on July 31, 2017, is located upstream of Harsha Lake. The East Fork Little Miami River watershed is a high priority TMDL project for TMDL development. The Agency plans to initiate the next steps in the TMDL development process by the 2020 IR.

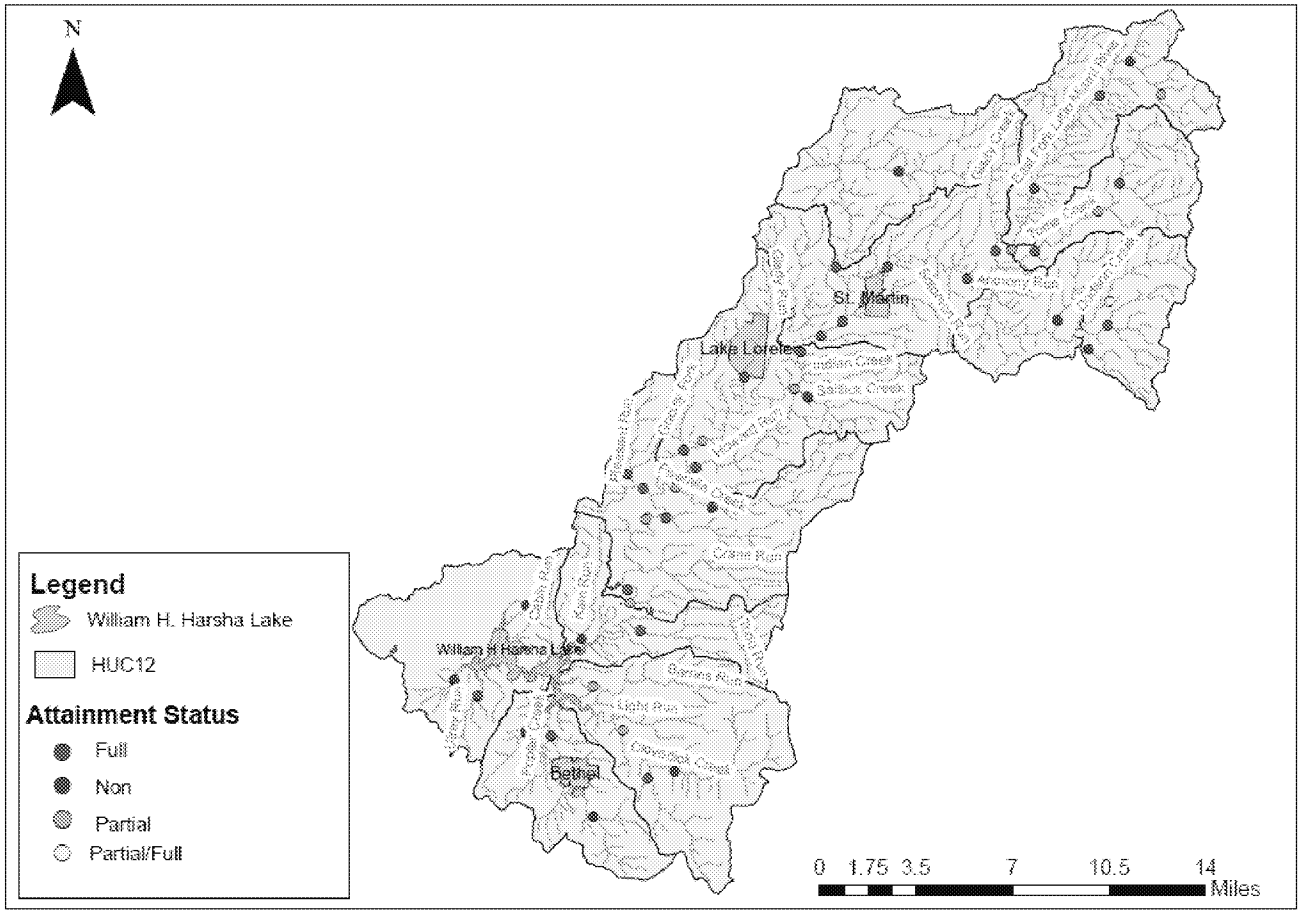

Figure J-4 — Watershed upstream from Harsha Lake and the attainment status of sites from the 2012 East Fork Little Miami River survey.

Clyde/Beaver Creek Reservoir (up-ground)

- Sandusky river watershed - primarily agricultural land use above reservoir.
- 110 acres of water surface.
- Provides drinking water to the City of Clyde (pop. ~6,320).
- Reservoir was assessed by Ohio EPA in 2009-2010 and did not meet the draft lake habitat use criteria.
- *2014 Integrated Report* placed the lake on the watch list for PDWS use based on algae indicators (microcystin) and nitrates. In the *2016 Integrated Report* it was listed as impaired for PDWS use based on algae indicators.
- The Raccoon Creek reservoir that also serves the City of Clyde is filled with water from Beaver Creek. The Raccoon creek reservoir was listed in the 2014 IR as impaired for PDWS based on algae indicators (microcystin).
- A TMDL for the lower Sandusky River was completed by Ohio EPA and approved by U.S. EPA but did not set specific loads for Beaver Creek since the stream was not listed as impaired.

2018 IR Update

Sampling of Raccoon Creek reservoir was completed in 2016 and 2017 as part of Ohio EPA's inland lakes sampling program. The results of this sampling will be included in the 2020 IR and will be used to direct the next steps in the restoration process for this watershed.

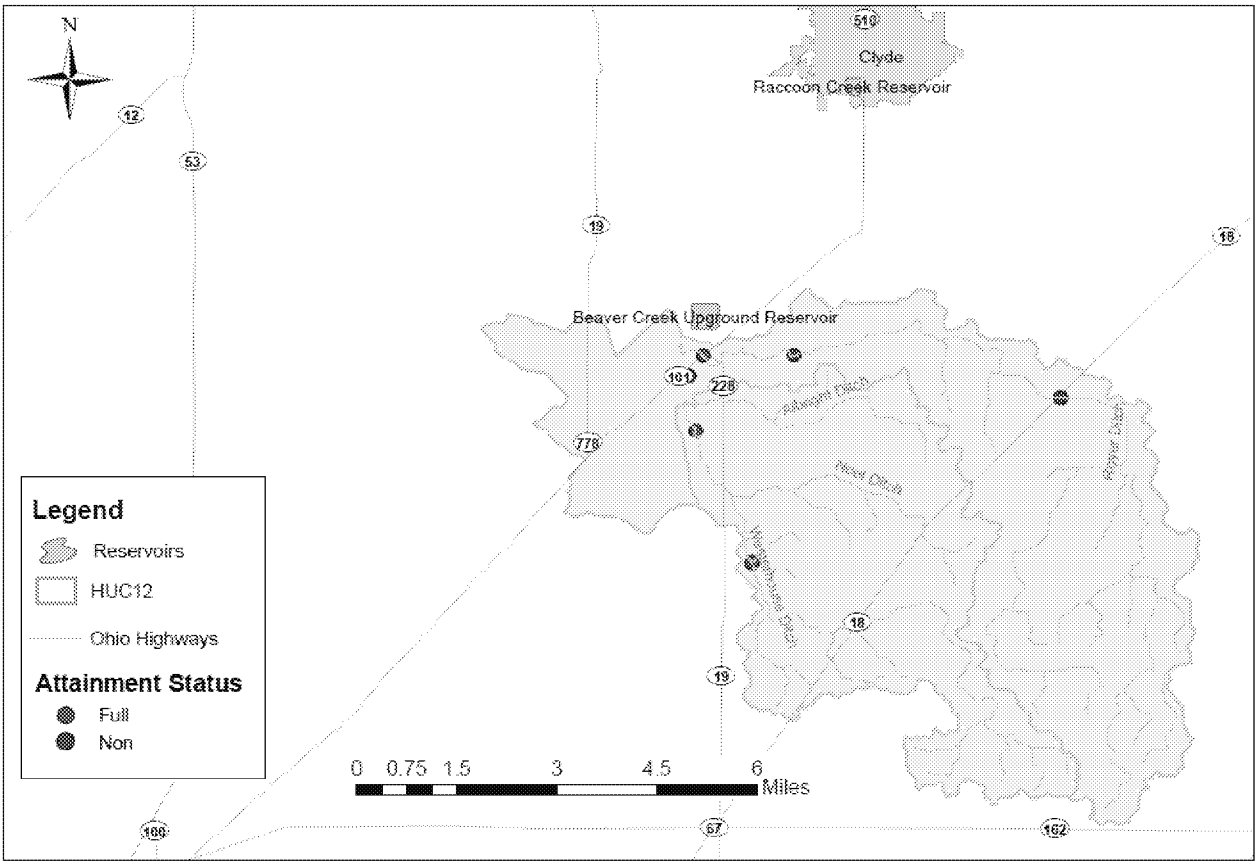

Figure J-5 — Watershed contributing to Beaver Creek Reservoir and the attainment status of sites sampled in 2009.

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 in accordance with the Domestic Action Plan; and active participation on Annex 4 (Nutrients) and other Great Lakes Water Quality Agreement (GLWQA) efforts. Effective lake management and coordinated implementation are needed to address the Western Basin of Lake Erie algal blooms and the Central Basin hypoxia issues, requiring a multi-state and binational effort. Currently, there are many parallel planning and management efforts ongoing at the state, federal and binational level. For the open waters of Lake Erie, respecting and working through the binational governance framework is the appropriate process and Ohio intends to aggressively pursue state measures that complement the process and are neither duplicative nor contradictory.

Great Lakes Water Quality Agreement

Binationally, the U.S. and Canada are working together under the GLWQA to develop nutrient reduction strategies; and create and implement action plans to meet the targets. Annex 4 of the 2012 GLWQA specifically addresses nutrients in the Great Lakes and contains short-term requirements specific for Lake Erie. The U.S. and Canada formally adopted new phosphorus targets for the western and central basins of Lake Erie in February 2016. These targets have been incorporated into Ohio's Domestic Action Plan and are the goals for all the state's efforts to reduce phosphorus loading to the lake.

As water quality has improved through the decades, Ohio EPA has addressed most of the significant point source problems and are now left with primarily nonpoint source related impairments. The current Lake Erie algal blooms and Central Basin hypoxic zone are driven by nutrient loading to the Lake. Recent assessments by the Ohio Phosphorus Task Force (Phases I and II) and Annex 4's Objectives and Targets Task team, as well as a Nutrient Mass Balance Study completed by Ohio EPA in December 2016, 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 waterbody (Lake Erie). To compliment the 40 percent phosphorus reduction goals set forth by the Annex 4 committee, a separate analysis is being done to set seasonal/annual load reductions targets for the smaller tributaries (for example, within the Maumee basin). Ohio is directly involved in developing these goals and reduction targets needed for Lake Erie while moving forward on developing implementation strategies and acting to reduce nutrient contributions to the lake.

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.

Lake Erie Collaborative Agreement

The Lake Erie Collaborative Agreement was another state/province led-initiative; it was signed in June 2015 by Ohio, Michigan and Ontario (*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. One of the goals spelled out in the Collaborative Agreement was to reduce nutrient levels going into Lake Erie by 40 percent. The other was to develop a strategic plan to manage dredge material 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.

Ohio's Domestic Action Plan for Lake Erie

The State of Ohio's Domestic Action Plan expanded upon the *Collaborative Implementation Plan* and was submitted to U.S. EPA on Feb. 7, 2018. The commitment to meet the Collaborative Agreement phosphorus reduction goals of 20 percent by 2020 and 40 percent by 2025 was also incorporated into this plan. The plan is not intended to static but to be revised following the adaptive management philosophy. (*lakeerie.ohio.gov/Portals/0/Ohio DAP/DAP 1-0 Final for USEPA 2018-02-07.pdf*).

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 continue utilizing this tool to target implementation in Ohio's Lake Erie watersheds as it works to meet the Annex 4 phosphorus targets and allocations.

The TMDL document 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.

Ohio has completed TMDLs 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 nutrients and algae and have established phosphorus 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. However, Ohio is working with U.S. EPA, Tetratech (the contractor), Indiana and Michigan to develop a method for setting load reduction goals for the smaller tributaries to Lake Erie (for example, the tributaries to the Maumee river) and evaluate whether the tributary TMDLs will provide the load reductions needed to protect the lake. Where the local TMDL reductions are not sufficient to protect the lake, Ohio will be working with U.S. EPA and other partners to determine next steps.

The Annex 4 process of developing loading targets and Domestic Action Plans are very similar 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.

State TMDL vs Binational Annex 4

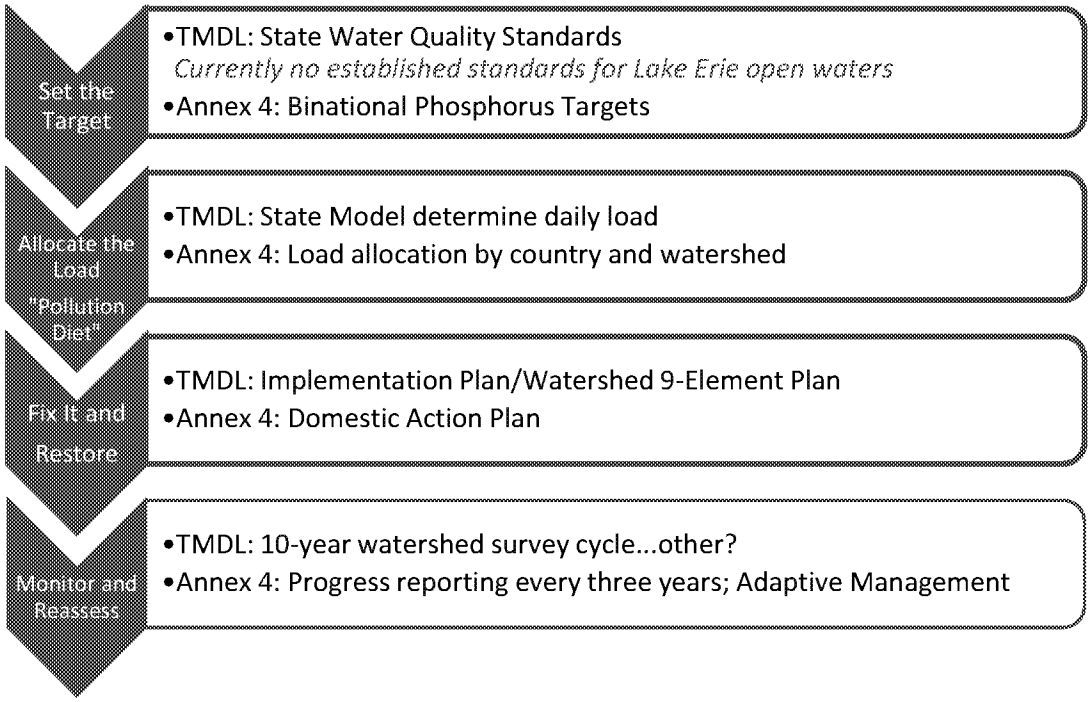

Figure J-6 — Key steps in the state TMDL and binational Annex 4 processes.

Ohio-based Nutrient Reduction Efforts

Ohio EPA's *NPS Management Plan* (Plan) is the Agency's guiding document that outlines recommended strategies, goals and objectives for controlling nonpoint sources of water quality impairment. The Plan was most recently updated in 2014 and identifies specific management activities to be implemented by Ohio EPA's NPS management program. The recent algal blooms on Lake Erie, the Ohio River and across the inland waters of Ohio were caused by excessive nutrients and exacerbated by changing weather patterns such as warmer temperatures and more intense storm events. The long-term solution is to reduce sources of nutrients while holistically restoring stream health and improving the waterway's ability to assimilate and utilize nutrients. This is also known as the stream's assimilative capacity. Restoring stream health will not only reduce the amounts of nutrients that reach the receiving water body, but restoration of in-stream and riparian habitat supports a healthy ecosystem, builds resilience to climate change impacts and improves recreational opportunities. The most current version of Ohio's *NPS Management Plan* is available at *epa.ohio.gov/Portals/35/nps/NPS_Mgmt_Plan.pdf.*

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 in 2010 and has expanded the scope and scale of implementation, developed a statewide strategy, targeted funding and undertaken legislative action to address the problem. As part of the more than $3 billion Ohio has invested comprehensively in the Lake Erie watershed, more than $150 million was made available starting in 2014 to help to public water systems keep drinking water safe and wastewater facilities reduce the amount of phosphorus they discharge into the Lake Erie watershed. In addition, Ohio continues to target millions of dollars to support local health departments to find and fix faulty residential septic systems that are contributing nutrients to Ohio waters.

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

- 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 *epa.ohio.gov/dsw/wqs/NutrientReduction.aspx*.
- GLRI Demonstration and Nutrient Reduction Projects — Nine grants totaling more than $13.9 million were awarded to Ohio. Highlights include: installation of the first two saturated buffers installed in Ohio; installation of approximately 70 controlled drainage structures; development of 52 whole farm conservation plans; planting of more than 9,000 acres of cover crops; installation and planting of 50 acres of reconstructed or restored wetlands; restoration of 3,500 linear feet of stream and 500 feet of streambank stabilization; installation of 4,400 feet of two-stage ditches; installation of rain gardens and vegetated infiltration basins in the Toledo area; and completion of 29 storm water, wetland and stream restoration projects in Cuyahoga County.
- 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[5]; 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.
- Ohio Senate Bill 150 — This bill, effective Aug. 21, 2014, requires, among other things, that beginning Sept. 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.
- Ohio HB 64 — This bill, effective June 30, 2015, required 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 *legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-64*.
- 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.
- 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.
- 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 several recommendations to be implemented during the next several years. For example,

[5] "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.

the report recommends ways for farmers to better manage fertilizers and animal manure and 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 *agri.ohio.gov/topnews/waterquality/docs/FINAL_REPORT_03-09-12.pdf.*

- 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 *lakeerie.ohio.gov/Portals/0/Reports/Task_Force_Report_October_2013.pdf.*
- 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 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 *epa.ohio.gov/portals/35/documents/point_source_workgroup_report.pdf.*

J4. Summary of Results

The consolidated results of the 2018 analysis are shown in Table J-4 and Figure J-7 — Summary of 2018 IR results for watershed AUs by beneficial use. through Figure J-9.

Table J-4 — Summary of results for each beneficial use[6]

	Human Health (fish tissue)	Recreation	Aquatic Life	Public Drinking Water Supply
Watershed assessment units				
Not being used for PDWS	0	0	0	1434
Attains	230	157	500	31
Unknown	872	186	109	39
Impaired, needs TMDL	436	750	411	33
Impaired, TMDL complete	0	445	408	1
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	14	0
Impaired, natural condition	0	0	96	0
Total watersheds considered	**1538**	**1538**	**1538**	**1538**
Large river assessment units				
Not being used for PDWS	0	0	0	29
Attains	6	3	18	0
Unknown	0	3	0	4
Impaired, needs TMDL	32	26	12	5
Impaired, TMDL complete	0	6	5	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	3	0
Impaired, natural condition	0	0	0	0
Total large rivers considered	**38**	**38**	**38**	**38**
Lake Erie assessment units				
Not being used for PDWS	0	0	0	1
Attains	0	0	0	0
Unknown	3	2	3	0
Impaired, needs TMDL	4	5	4	6
Impaired, TMDL complete	0	0	0	0
Impaired, other remedy	0	0	0	0
Impaired, not pollutant	0	0	0	0
Impaired, natural condition	0	0	0	0
Total Lake Erie considered	**7**	**7**	**7**	**7**

[6] 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.

L

Summary Tables of Waterbody Conditions; Lists of Prioritized Impaired Waters; and Monitoring and TMDL Schedules

Section L contains tables showing the 303(d) listing details for each of the assessment unit types and is divided into five sections as follows:

- Section L1: Status of Watershed Assessment Units
- Section L2: Status of Large River Assessment Units
- Section L3: Status of Lake Erie Assessment Units
- Section L4: Section 303(d) List of Prioritized Impaired Waters
- Section L5: Category 4B demonstrations contained in approved Ohio TMDLs to date

In Sections L1 through L4, there are four columns labeled, in order, Human Health, Recreation, Aquatic Life and PDW Supply. These four columns represent each beneficial use included in the 303(d) list of impaired waters and the numbers in the columns represent the category for that assessment unit for that beneficial use. Table L-1 defines the categories and subcategories assigned to each use.

Table L-1 — Category definitions for the 2018 Integrated Report and 303(d) list.

Category[1]		Subcategory	
0	No water currently utilized for water supply		
1	Use attaining	d	TMDL complete; new data show the AU is attaining WQS
		h	Historical data
		t	TMDL complete at HUC[2] 11 scale; AU attaining WQS at HUC 12 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 HUC 11 scale; there may be no or not enough data to assess this AU at the HUC 12 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	alt	Alternative restoration approaches[3]
		M	Mercury
		d	TMDL complete; new data show the AU is not attaining WQS
		h	Historical data
		p	Protection/preservation for threatened waters
		x	Retained from 2008 IR

[1] Shading indicates categories defined by U.S. EPA; other categories and subcategories are defined by Ohio EPA.
[2] HUC means hydrologic unit code.
[3] Ohio currently has no waters that are listed under this subcategory.

05090202 90 02	Little Miami River Mainstem (O'Bannon Creek to Ohio River)	1757	5	4Ah	5	0	4

Section L3. Status of Lake Erie Assessment Units Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
041202000101	Lake Erie Islands Shoreline (≤3m)	4.99	5	5	5	5	14
041202000201	Lake Erie Western Basin Shoreline (≤3m)	47.88	5	5	5	5	17
041202000202	Lake Erie Sandusky Basin Shoreline (≤3m)	68.01	5	5	5	5	16
041202000203	Lake Erie Central Basin Shoreline (≤3m)	13.39	5	5	5	0	9
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
041202000302	Lake Erie Sandusky Basin Open Water (>3m)	361.71	3i	3	3	5	5
041202000303	Lake Erie Central Basin Open Water (>3m)	2544.98	3i	3	3	5	5

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 37 of 38. PageID #: 9510

ED_002091_00008981-00064

Section L4. Section 303(d) List of Prioritized Impaired Waters							
Assessment Unit	Assessment Unit Name	Sq. Mi. in Ohio	Human Health	Recre-ation	Aquatic Life	PDW Supply	Priority Points
041202000201	Lake Erie Western Basin Shoreline (<=3m)	47.88	5	5	5	5	17
04100009 90 02	Maumee River Mainstem (Beaver Creek to Maumee Bay)	6608	5	5h	5	5	16
041202000202	Lake Erie Sandusky Basin Shoreline (<=3m)	68.01	5	5	5	5	16
04100009 90 01	Maumee River Mainstem (Tiffin River to Beaver Creek)	6058	5	5h	5	5	15
05030103 08 06	Burgess Run-Yellow Creek	20.19	5h	5h	5	5	15
041202000101	Lake Erie Islands Shoreline (<=3m)	4.99	5	5	5	5	14
04100005 90 01	Maumee River Mainstem (IN border to Tiffin River)	2315	5	5h	1	5	13
04100007 12 06	Big Run-Flatrock Creek	48.28	5	5h	5	1	12
05040003 03 04	Delano Run-Kokosing River	32.95	5	5h	5	0	12
05060001 04 06	Glade Run-Scioto River	38.34	5h	5h	5	3i	12
05060001 06 02	Middle Mill Creek	59.91	3	5h	5d	5	12
05090202 10 05	West Fork East Fork Little Miami River	28.88	1h	5h	5	5	12
05030103 90 01	Mahoning River Mainstem (Eagle Creek to Pennsylvania Border)	1075	5	5h	5	0	11
05080002 90 02	Great Miami River Mainstem (Four Mile Creek to Ohio River)	5371	5	5h	5	0	11
04100006 03 03	Flat Run-Tiffin River	33.17	5	5h	5	3i	11
04100007 06 04	Dry Fork-Little Auglaize River	57.07	1	5h	1	5	11
04110002 02 03	Lake Rockwell-Cuyahoga River	61.33	5	5	4Ah	5	11
05060001 90 02	Scioto River Mainstem (Olentangy River to Big Darby Creek)	2641	5	5h	5	0	10
05080001 90 01	Great Miami River Mainstem (Tawawa Creek to Mad River)	1853	5	5h	5	3i	10
04100003 02 04	West Branch St Joseph River	14.76	5	5h	5	0	10
04100004 02 05	Prairie Creek-St Marys River	42.22	5	5h	5	0	10
04100004 03 03	Yankee Run-St Marys River	59.44	5	5h	5	0	10
04100006 05 02	Brush Creek	66.01	5h	5h	5	0	10
04100012 02 04	Mouth Vermilion River	28.13	5	5h	5h	1	10
04110003 01 05	Lower Ashtabula River	18.27	5	5h	5	0	10
05030103 08 05	Headwaters Yellow Creek	19.36	3	5h	5	5	10
05080002 07 04	Dicks Creek	27.71	5h	5h	5	0	10
05090202 02 06	Shawnee Creek-Little Miami River	32.07	5h	5h	5d	0	10
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	5	10
05060001 90 01	Scioto River Mainstem (L. Scioto R. to Olentangy R.); excluding O'Shaughnessy and Griggs reservoirs	1068	5	3i	5	5	9
04100001 03 07	Heldman Ditch-Ottawa River	28.15	5	5h	5	0	9
04100003 03 03	Eagle Creek	35.00	5h	5h	5	0	9
04100004 01 02	Center Branch St Marys River	29.00	5h	5h	5	0	9
04100004 02 04	Twelvemile Creek	23.58	5h	5h	5	0	9
04100009 06 03	Haskins Road Ditch-Maumee River	15.73	3	5h	1	5	9
04100011 12 03	Green Creek	30.78	1	5h	4A	5	9
04110001 01 08	Baker Creek-West Branch Rocky River	26.08	5	5h	5	0	9

Case: 3:17-cv-01514-JGC Doc #: 43-2 Filed: 08/06/18 38 of 38. PageID #: 9511

ED_002091_00008981-00065