



ENVIRONMENTAL LAW & POLICY CENTER

Protecting the Midwest's Environment and Natural Heritage

November 30, 2018

Via Certified Mail

ANDREW WHEELER, Administrator
United States Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

RE: 60-Day Notice of Intent to File Citizen Suit Under Clean Water Act Section 505(a)(2) for the United States Environmental Protection Agency's Failure to Act on Ohio's Constructive Submission of No "Total Maximum Daily Load" for Western Lake Erie.

Dear Administrator Wheeler:

The Environmental Law & Policy Center ("ELPC") is writing to notify you of our intent to file suit against the Administrator of the U.S. Environmental Protection Agency ("U.S. EPA" or "Agency") in U.S. District Court pursuant to section 505 of the Clean Water Act ("CWA"), 33 U.S.C. § 1365, and 40 C.F.R. Part 135. The basis for this intent to sue is U.S. EPA's violation of the Clean Water Act through its failure to either approve or disapprove the State of Ohio's decision not to submit a "Total Maximum Daily Load" ("TMDL") for western Lake Erie. We request that U.S. EPA respond to this letter within 60 days (by January 29, 2019) to provide its view as to whether the State of Ohio has failed to submit a TMDL "in accordance with its priority ranking" for western Lake Erie as required by section 303(d), 33 U.S.C. § 1313(d). Should U.S. EPA not offer a response approving or disapproving Ohio's decision not to submit a TMDL, ELPC intends to pursue declaratory and injunctive relief.

I. Background

A. Algae Outbreaks in Western Lake Erie

Western Lake Erie is in the midst of a severe and well-documented water quality crisis caused by harmful algae blooms. These blooms present significant public health concerns for the hundreds of thousands of people in the Toledo area and beyond who rely on the lake for safe, clean drinking water. This crisis also strikes at the ecology of the lake itself and critically undermines

21 W. Broad Street, 8th Floor • Columbus, OH 43215
(614) 569-3827 • www.ELPC.org

Harry Drucker, Chairperson • Howard A. Learner, Executive Director
Chicago, IL • Columbus, OH • Des Moines, IA • Duluth, MN • Grand Rapids, MI • Indianapolis, IN
Jamestown, SD • Madison, WI • Minneapolis/St. Paul, MN • Sioux Falls, SD • Washington, D.C.

the Lake's recreation and tourism industries, along with other components of the regional economy.

The dominant cause of these blooms is phosphorus pollution from fertilizer and manure running off crop and animal farms. The most recent federal National Climate Assessment projects that increased spring precipitation due to climate change will drive even more farm runoff in the future, along with other "conditions that encourage cyanobacteria growth." U.S. Global Change Research Program, *Fourth National Climate Assessment Volume II*, Chapter 21: Midwest (2018), available at <https://nca2018.globalchange.gov/chapter/21>. However, even as this problem is poised to worsen, Ohio Environmental Protection Agency ("Ohio EPA") and U.S. EPA have repeatedly refused to apply the requirements of the Clean Water Act to reduce phosphorus pollution in western Lake Erie.

B. Priority Ranking and Total Maximum Daily Load

Section 303(d) of the Clean Water Act provides that when a state identifies waters within its jurisdiction that are impaired by pollution, "[t]he State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters." 33 U.S.C. § 1313(d)(1)(A); *see also* 40 C.F.R. § 130.7(b)(4) (similar). After identifying impaired waters and their respective priority rankings, "[e]ach State shall establish for the waters identified in paragraph (1)(A) of this subsection, and in accordance with the priority ranking, the total maximum daily load, for those pollutants which the Administrator identifies under section 1314(a)(2) of this title as suitable for such calculation." 33 U.S.C. § 1313(d)(1)(C); *see also* 40 C.F.R. § 130.7(c)(1) (similar). That "load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality." 33 U.S.C. § 1313(d)(1)(C).

U.S. EPA regulations specify that this TMDL requirement applies to all waters within a state's boundaries for which existing pollution control mechanisms "are not stringent enough to implement any water quality standards (WQS) applicable to such waters." 40 C.F.R. § 130.7(b)(1). Existing mechanisms that may provide a basis for determining that a TMDL is not required include not only "technology-based effluent limitations" on point sources, but also "[m]ore stringent effluent limitations (including prohibitions) required by either State or local authority preserved by section 510 of the Act, or Federal authority (law, regulation, or treaty)," and "[o]ther pollution control requirements (e.g., best management practices) required by local, State, or Federal authority." *Id.*

U.S. EPA regulations define a TMDL as "[t]he sum of the individual WLAs [wasteload allocations] for point sources and LAs [load allocations] for non point sources and natural background." 40 C.F.R. § 130.2(i). A "wasteload allocation" is "[t]he portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution." 40 C.F.R. § 130.2(h). Any Clean Water Act permit for a point source must include pollution limits "consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7." 40 C.F.R. § 122.44(d)(1)(vii)(B). A "load allocation" is "[t]he portion of a receiving

water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources." 40 C.F.R. § 130.2(g). Such allocations are "best estimates of the loading, which may range from reasonably accurate estimates to gross allotments, depending on the availability of data and appropriate techniques for predicting the loading." *Id.*

Each state must submit TMDLs established for impaired waters to U.S. EPA for review. 33 U.S.C. § 1313(d)(2). U.S. EPA's implementing regulations provide that "[s]chedules for submission of TMDLs shall be determined by the Regional Administrator and the State." 40 C.F.R. § 130.7(d). This schedule must be consistent with the state's priority ranking for the impaired water, consistent with the Clean Water Act's command that "[e]ach State shall establish" a TMDL for an impaired water "in accordance with the priority ranking." 33 U.S.C. § 1313(d)(1)(C). Thus, "a priority ranking among impaired waters directly aids the State by specifying the next water body for which it *must* develop a TMDL." *Anacostia Riverkeeper, Inc. v. Jackson*, 798 F. Supp. 2d 210, 233 (D.D.C. 2011) (emphasis added).

U.S. EPA "shall either approve or disapprove" a TMDL "not later than thirty days after the date of submission." 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.7(d)(2). A number of federal courts have endorsed the doctrine of "constructive submission," which treats a state's affirmative decision not to develop a TMDL as the equivalent of a submission of no TMDL, triggering U.S. EPA's obligation to review that "non-submission" under 33 U.S.C. § 1313(d)(2). *See, e.g., Scott v. City of Hammond*, 741 F.2d 992 (7th Cir. 1984). If U.S. EPA disapproves a submitted TMDL, the U.S. EPA Administrator "shall not later than thirty days after the date of such disapproval . . . establish such loads for such waters as he determines necessary to implement the water quality standards applicable to such waters and upon such . . . establishment the State shall incorporate them into its current plan under subsection (e) of this section." 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.7(d)(2) (similar).

C. Clean Water Act Citizen Suit Provision

Under section 505 of the Clean Water Act, "any citizen may commence a civil action . . . (2) against the Administrator [of U.S. EPA] where there is alleged a failure of the Administrator to perform any act or duty . . . which is not discretionary . . ." 33 U.S.C. § 1365(a). Prior to bringing a non-discretionary duty suit, the plaintiff must give the Administrator of U.S. EPA at least 60 days' notice of the action. *See* 33 U.S.C. § 1365(b)(2). The plaintiff's notice must "identify the provision of the Act which requires such act or creates such duty, shall describe with reasonable specificity the action taken or not taken by the Administrator which is alleged to constitute a failure to perform such act or duty, and shall state the full name, address and telephone number of the person giving the notice." 40 C.F.R. § 135.3(b). The notice must also "state the name, address, and telephone number of the legal counsel, if any, representing the person giving the notice." *Id.* § 135.3(c).

II. Clean Water Act Violations

U.S. EPA has failed to carry out its duty to establish a TMDL for western Lake Erie where Ohio has refused to do so. Although Ohio EPA has paid lip service to the need to establish a TMDL

for western Lake Erie at some undetermined point in the future, its statements and conduct in altering the priority ranking for western Lake Erie show that the state is doing its best to make sure it can never be held to that statutory obligation. In these circumstances, U.S. EPA must recognize Ohio's approach as a "constructive submission" of no TMDL under Clean Water Act section 303(d).

Ohio EPA initially listed a portion of western Lake Erie as impaired by toxic algae four years ago, in its 2014 list of impaired waters. The agency determined, based on measurements of the algal toxin microcystin, that algae outbreaks were impairing the public drinking water use for the shoreline "assessment unit" of western Lake Erie. Ohio EPA, 2014 Integrated Water Quality Monitoring and Assessment Report at H-14, (Mar. 25, 2014), *available at* <https://epa.ohio.gov/dsw/tmdl/OhioIntegratedReport#156069519-report>. After delaying an impairment assessment of the open waters of western Lake Erie for several years, Ohio EPA eventually designated the full extent of western Lake Erie within its jurisdiction as impaired based on a new methodology utilizing satellite imaging, first in a May 2018 amendment to its 2016 impaired waters list and then in its final June 2018 Section 303(d) List. Ohio EPA, 2016 Integrated Water Quality Monitoring and Assessment Report – Amendment at 9 (May 2018) ("2016 Section 303(d) List Amendment"), *available at* https://epa.ohio.gov/Portals/35/tmdl/2016intreport/2016OH_IR_Amendment_May2018.pdf; Ohio EPA, 2014 Integrated Water Quality Monitoring and Assessment Report, (June 2018) ("2018 Section 303(d) List"), *available at* <https://epa.ohio.gov/dsw/tmdl/OhioIntegratedReport#156069519-report>.

A comparison of these May and June 2018 documents shows that Ohio is seeking to evade the Clean Water Act section 303(d) requirement to establish a TMDL for western Lake Erie "in accordance with" its priority ranking by arbitrarily altering that ranking inconsistent with its own framework. In both the 2016 Section 303(d) List Amendment and the 2018 Section 303(d) List, Ohio applied a priority ranking system based on both a numeric assignment of priority points and consideration of qualitative factors. *See* 2018 Section 303(d) List at J-1 to J-2. The 2016 Integrated Report Amendment stated that "[t]he priority points in the revised list of impaired waters, while somewhat high, do not reflect the actual priority that Ohio places on the Lake Erie impairments. In short, the western basin in particular is one of the highest, if not the highest, priority for Ohio to address." 2016 Section 303(d) List Amendment at 9. In the 2018 Section 303(d) List, by contrast, Ohio EPA cited ongoing efforts to address nutrient pollution through other means such as implementation of the Great Lakes Water Quality Agreement and "active[] participat[ion] in TMDLs for tributaries" in asserting that "priority for Ohio EPA-initiated TMDLs is assigned a low priority for these waters." 2018 Section 303(d) List at J-3.

In conjunction with this about-face on the priority ranking for western Lake Erie, Ohio EPA also addressed a public comment suggesting that the agency assign western Lake Erie a low ranking by putting it in the "5-alternative" or "5-alt" category, for impaired waters where Ohio is using "alternative restoration approaches" in lieu of a TMDL. 2018 Section 303(d) List at J-1, J-2. Ohio stated in response that:

The 5-alt category is being considered by Ohio EPA. However, the state must first develop an alternative plan and that plan must be reviewed and accepted by

U.S.EPA before U.S.EPA can/will approve a 303(d) list with a 5-alt category included. While Ohio EPA believes that the Domestic Action Plan in conjunction with our other initiatives form the basis of an alternative plan, we have additional ideas to enhance/fine tune the Domestic Action Plan and have not yet developed a formal 5-alt proposal to submit to U.S. EPA.

2018 Section 303(d) List at D-35.

In short, Ohio is manipulating its priority ranking system in order to avoid its obligation to establish a TMDL, when the state cannot actually satisfy its own or U.S. EPA's requirements for forgoing a TMDL based on the existence of a credible alternative plan for achieving applicable water quality standards. Ohio EPA has continued to rely on this approach at the same time that the state and U.S. EPA have recognized that the ongoing efforts in connection with the Great Lakes Water Quality Agreement ("GLWQA") and tributary TMDLs are not working. *See, e.g.*, Press Release, Gov. John Kasich, Kasich Administration Takes Aggressive New Action to Reduce Nutrient Runoff and Improve Lake Erie Water Quality (July 11, 2018), <https://governor.ohio.gov/Media-Room/Press-Releases/ArticleId/946/kasich-administration-takes-aggressive-new-action-to-reduce-nutrient-runoff-and-improve-lake-erie-water-quality-7-11-18> (stating that "more aggressive action is needed" beyond past efforts in order "to reduce or eliminate the algae blooms that have marred the western basin for years"); U.S. EPA *et al.*, Methodology for Connecting Annex 4 Water Quality Targets with TMDLs in the Maumee River Basin, available at https://www.epa.gov/sites/production/files/2018-10/documents/annex4_methodology_with_appendices_20180809-508.pdf (comparing GLWQA Annex 4 targets to existing tributary TMDLs and finding a number of subwatersheds where TMDLs are either non-existent or target loads are inadequate to meet Annex 4 goals). Accordingly, Ohio's statements and behavior amount to a refusal to undertake a TMDL "in accordance with" its priority ranking as required under Clean Water Act section 303(d).

U.S. EPA has a mandatory duty to approve or disapprove a TMDL submission within 30 days pursuant to CWA Section 303(d)(2), 33 U.S.C. § 1313(d)(2), as well as 40 C.F.R. § 130.7(d)(2). Multiple courts have held that this duty applies to a "constructive submission" by a state, where the state has "refus[ed] to act" through "a determination that no TMDL is necessary and none should be provided." *Scott v. City of Hammond*, 741 F.2d 992, 998 (7th Cir. 1984). At least one Ohio EPA official has specifically asserted the view that "a TMDL still is not necessary for the lake," and Ohio EPA's arbitrary change in the 2018 priority ranking for western Lake Erie shows the state still intends to avoid pursuing a TMDL whether or not there is some other viable alternative mechanism in place to achieve reductions in phosphorus pollution. Tom Henry, *State official: Confusion caused Kasich to hold off on impairment designation*, THE BLADE (Apr. 18, 2018), <https://www.toledoblade.com/Politics/2018/04/18/Confusion-caused-Kasich-to-hold-off-on-impairment-designation-state-official-says.html>. Ohio EPA's unenforceable statement that it may one day decide a TMDL is necessary, without any accompanying timeline or specific benchmarks, is not enough to overcome the evidence that the state is in fact seeking to delay a TMDL indefinitely.

Accordingly, the State of Ohio's plainly articulated position constitutes a "constructive submission" of no TMDL, triggering U.S. EPA's obligation to disapprove such a submission within 30 days pursuant to section 303(d)(2) of the CWA. *See Scott v. City of Hammond*, 741

F.2d 992 (7th Cir. 1984). U.S. EPA has not carried out that duty, and has in fact approved Ohio's Section 303(d) List and specifically the flawed priority ranking for western Lake Erie. Letter from Linda Holst, Acting Division Dir., Water Division, U.S. EPA, to Tiffani Kavalec, Chief, Division of Surface Water, Ohio EPA, Re: Approval of 2018 Clean Water Act (CWA) Section 303(d) List (July 9, 2018) (included as Attachment 1). As discussed above, section 505(a)(2) of the Clean Water Act authorizes a suit against U.S. EPA when the agency fails to carry out its mandatory duties. Accordingly, ELPC provides this letter as notice of its intent to bring suit against U.S. EPA for such failure under the Clean Water Act.

III. Identification of the Party Giving Notice and Counsel

The party giving notice of this claim is:

Environmental Law & Policy Center
21 W. Broad St., 8th Floor
Columbus, OH 43215
(614) 569-3827

ELPC is represented by the legal counsel identified below:

Madeline Fleisher
Senior Attorney
Environmental Law & Policy Center
21 W. Broad St., 8th Floor
Columbus, OH 43215
(614) 569-3827

Michael Barsa
Northwestern Pritzker School of Law
357 East Chicago Avenue
Chicago, IL 60611
(312) 503-7983

We encourage you to contact us as soon as possible should you desire to discuss the allegations set forth in this letter. If this matter is not resolved to our satisfaction, we will file suit on or after the sixtieth day following the date of this letter.

IV. Conclusion

ELPC seeks a response by January 29, 2019, as to whether U.S. EPA views Ohio's conduct described above as a constructive submission of no TMDL or as a permissible approach under Clean Water Act section 303(d). If U.S. EPA fails to carry out its duty to approve or disapprove Ohio's constructive submission, then ELPC intends to pursue a citizen suit under section 505(a)(2) of the Clean Water Act, seeking declaratory and injunctive relief. If U.S. EPA has taken any steps to rectify the underlying cause of the violations described above, or if U.S. EPA believes that anything in this letter is inaccurate, please let us know. If U.S. EPA does not notify

us of any remedial actions or inaccuracies within the 60-day period, we will assume that no such actions have been taken, that the information in this letter is accurate, and that such violations are likely to continue. We would be happy to meet with U.S. EPA or its representatives within the 60-day notice period to attempt to resolve these issues.

Respectfully Submitted,

/s/ Madeline Fleisher
MADELINE FLEISHER (91862)
Environmental Law & Policy Center
21 W. Broad St., 8th Floor
Columbus, OH 43215
Tel: (614) 569-3827
Fax: (312) 795-3730
mfleisher@elpc.org

MICHAEL BARSA (196043)
Northwestern Pritzker School of Law
357 East Chicago Avenue
Chicago, IL 60611
Tel: (312) 503-7983
Fax: (312) 503-5950
m-barsa@northwestern.edu

Attorneys for Plaintiffs

Enclosure

Copy by certified mail to:

HON. MATTHEW G. WHITAKER
Acting Attorney General of the United States
U.S. Department of Justice
950 Pennsylvania Avenue, N.W.
Washington, D.C. 20530

ATTACHMENT 1



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

JUL 09 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,

A handwritten signature in cursive script that reads "Linda Holst".

Linda Holst
Acting Division Director
Water Division

Enclosure

cc: Cathy Alexander, Ohio EPA

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 (NEORS), 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.

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-991⁹ 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, algacide 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 ohioalgaefinfo.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.

Indicator	Criterion (Table 37-2, OAC 3745-1-37)	Assessment Method Summary
<i>E. coli</i>	Geometric mean <i>E. coli</i> 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**.
<i>E. coli</i>	Geometric mean <i>E. coli</i> content* based on samples collected within a 90-day period during the recreation season within a calendar year is as follows: <u>Primary Contact Waters</u> 90-day Geometric Mean: 126 cfu/100 mL STV: 410 cfu/100 mL <u>Secondary Contact Waters</u> 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 <i>E. coli</i> 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	Eastern Basin	Western Basin
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 <i>E. coli</i> 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		2011 Report		2012 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.

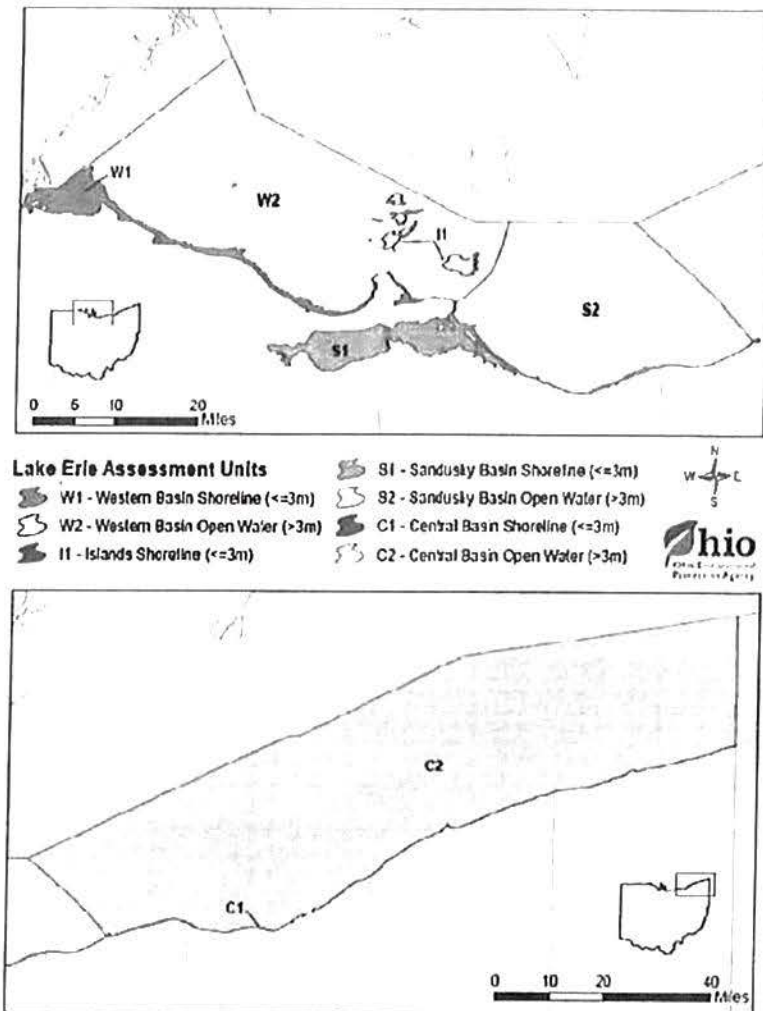


Figure F-7 — New Ohio Lake Erie AUs

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

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 stated²⁵:

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.

Year	Days with Coverage Exceeding 30% (cell/mL)	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).

LEAU	Assessment Unit	Attaining	Impaired	Not Assessed	Total
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.

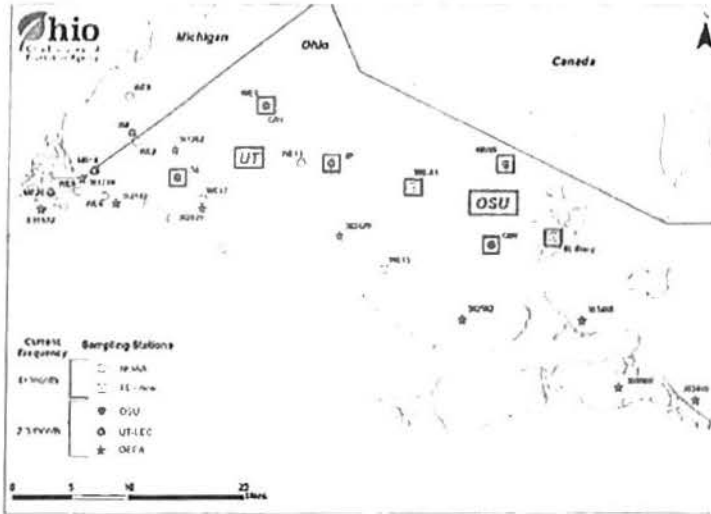


Figure I-1 — Supplemental weekly sampling locations for chlorophyll and microcystin; sampled by University of Toledo and the Ohio State University/Stone Laboratory (boxed sites) researchers in 2017.

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
	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	
5 Impaired; TMDL needed	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.

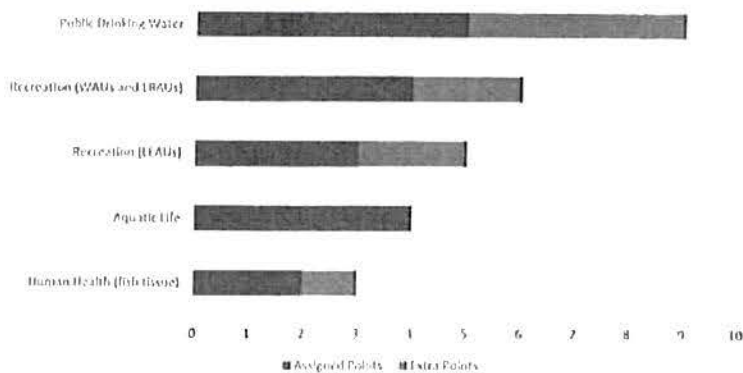


Figure J-2 — Priority points assigned based on use impairment or other factors (extra points).

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 68³³ 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
<i>Total</i>	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
<i>Total</i>	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.

Statewide AU ID	Waterbody Name	2016 Length (mi)	2016 Category	2016 TMDLs	2016 Monitoring	2016 Total
041202000101	Lake Erie Islands Shoreline (53m)	4.99	5	5	5	14
041202000201	Lake Erie Western Basin Shoreline (53m)	47.88	5	5	5	17
041202000202	Lake Erie Sandusky Basin Shoreline (53m)	68.01	5	5	5	16
041202000203	Lake Erie Central Basin Shoreline (53m)	13.39	5	5	5	9
041202000301	Lake Erie Western Basin Open Water (>3m)	527.30	3i	5	3	10
041202000302	Lake Erie Sandusky Basin Open Water (>3m)	361.71	3i	3	3	5
041202000303	Lake Erie Central Basin Open Water (>3m)	2544.98	3i	3	3	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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