ENVIRONMENTAL LAW & POLICY CENTER
Protecting the Midwest's Environment and Natural Heritage

# Clean Water Act Impairment and Lake Erie: If the Shoe Fits....

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## The CWA and Impairment

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- Water quality standards (designated uses and numeric or narrative criteria to achieve those uses) set by states [33 U.S.C. § 1313(c)(2)(A)]
- State evaluation every two years of whether water bodies (or segments) are attaining water quality standards [33 U.S.C. § 1313(d)(1)(A)]
- If not: impairment listing!

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## From Impairment to TMDLs

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- Impairment listing triggers requirement for state to prepare a "Total Maximum Daily Load" [33 U.S.C. § 1313(d)(1)(C)]
- TMDL as "pollution diet" – with specific allocations to point and non-point sources
- Non-point sources otherwise generally not regulated under CWA, but must be "reasonable assurances" that they'll be dealt with for TMDL approval by U.S. EPA

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## Current Lake Erie Impairment Status

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Lake Erie Designated Uses:

- "Exceptional warmwater habitat, superior high quality water, public water supply, agricultural water supply, industrial water supply and bathing waters..." OHIO ADMIN. CODE 3745-1-31(A).
- "Exceptional warmwater habitat" as "capable of supporting and maintaining an exceptional or unusual community of warmwater aquatic organisms having a species composition, diversity, and functional organization comparable to the seventy-fifth percentile of the identified reference sites on a statewide basis." OHIO ADMIN. CODE 3745-1-7(B)(1)(c).
- "Bathing waters" as "waters that, during recreation season, are heavily used for swimming." OHIO ADMIN. CODE 3745-1-7(B)(3)(a).

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## Current Lake Erie Impairment Status

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### Lake Erie Water Quality Standards:

- "Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae." OAC 3745-1-04(E) (and similar provisions elsewhere)
- Must comply with human health criteria and values that "provide protection of humans from unacceptable exposure to toxicants through consumption of contaminated fish and drinking water and from ingesting water as a result of participation in water-oriented recreational activities." OAC 3745-1-42.
- 1 microgram/liter microcystin limit as criterion for impairment of drinking water use (per Ohio EPA, Public Water System Harmful Algal Bloom Response Strategy (May 2012))
- Dissolved oxygen minimum of at least 5.0 milligrams per liter and a minimum daily average of 6.0 milligrams per liter for "exceptional warmwater habitat." OAC 3745-1-35



## Current Lake Erie Impairment Status

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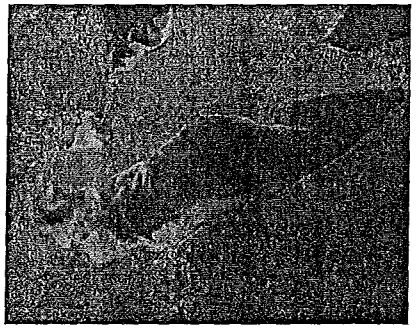
2011:



2013:

## Current Lake Erie Impairment Status

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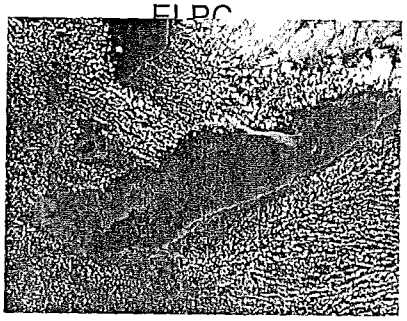
2014:

2015:





## Current Lake Erie Impairment Status

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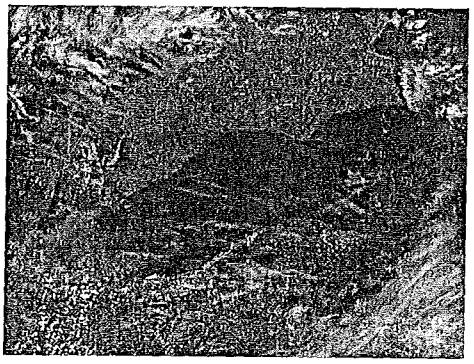
Weeks ago:



## Current Lake Erie Impairment Status

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- 2016 Ohio EPA Impairment List/Integrated Report:
  - Western basin shoreline, drinking water intakes, Lake Erie Islands = impaired
  - No assessment or impairment determination for open waters of western Lake Erie
- U.S. EPA approval of impairment list on May 19, 2017
  - U.S. EPA "deferring to" Ohio EPA's decision not to assess



## ELPC Lawsuit Against U.S. EPA

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- Case No. 17-cv-1514, N.D. Ohio (filed July 18, 2017)
- Administrative Procedure Act challenge to U.S. EPA approval of Ohio EPA impairment decision for open waters of Lake Erie as arbitrary/capricious/not in accordance with CWA
- Answer filed October 20, 2017

## Larger CWA Issues

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- Narrative versus numeric criteria
- State versus federal role
- Non-point source regulation
- CWA versus alternative approaches



## CWA Versus Alternative Approaches

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- Great Lakes Water Quality Agreement
  - Binational agreement between U.S. and Canada
  - 2012: Annex 4 regarding phosphorus pollution
  - 2016: Phosphorus load reduction targets for Lake Erie (40% by 2025)
  - State Domestic Action Plans by April 2018

## Why the CWA?

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- Enforceability/accountability
  - States do the work, federal government/courts check the work (CWA)
  - States do the work, who checks the work? (GLWQA)
  - Non-point source problem
- Precedent regionally and nationally
- Belt and suspenders

State of Ohio's DRAFT

# Domestic Action Plan

Ohio | Lake Erie Commission

Ohio Environmental Protection Agency

Ohio Department of Agriculture

In accordance with the Great Lakes Water Quality Agreement

# Annex 4 Goals

(Ohio waters of Lake Erie)

- Western Basin Goal
  - Reduce the amount of cyanobacteria biomass to mild levels 90% of the time.

- Central Basin Goal
  - Maximum load (6,000 Metric Tons Annually) that would result in a dissolved oxygen concentration of at least 2 mg/L in the bottom waters during the summer stratified period.

# Ohio Domestic Action Plan Goals

**Targets to Address Harmful Algae Blooms**

| Priority Tributary | Spring (March 1-July 31) Values | | | | |
|---|---|---|---|---|---|
| | 2008 Baseline | | | Targets under 40% Reduction by 2025 | |
| | Discharge ($km^3$) | Load metric tons | FWMC mg/L | Load Metric tons | FWMC mg/L |
| Maumee River | 3.76 | 1,414 TP<br>302 DRP | 0.38 TP<br>0.08 DRP | 860 TP<br>186 DRP | 0.23 TP<br>0.05 DRP |
| Portage River | NA | NA | NA | TBD | TBD |
| Sandusky River | 0.963 | 367 TP<br>69.1 DRP | 0.38 TP<br>0.07 DRP | 230 TP<br>43 DRP | 0.23 TP<br>0.05 DRP |

Baseline data are not available for the Portage River in 2008 due to gaps in the data set. The development of a spring loading and concentration target for the Portage River will be completed once the methodology to develop the Maumee River HUC 8 sub-basin targets is completed.



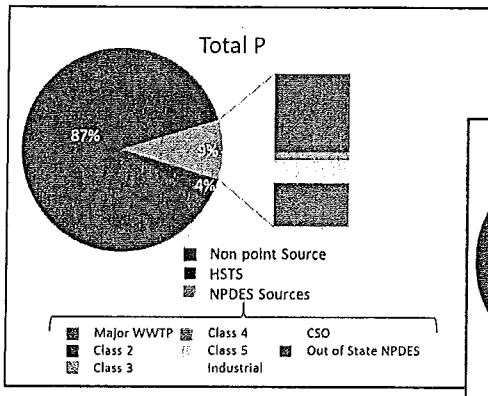
# Ohio Domestic Action Plan Goals

**Targets to Address Hypoxia** (Metric Tons Annually, MTA)

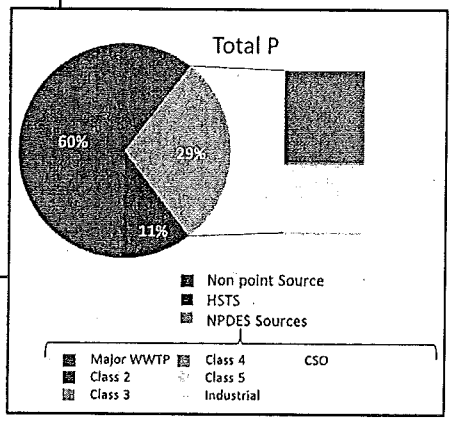
*Annual load estimates based on Maccoux, 2016 values.

| Priority Tributary | 2008 Annual Load* | 40% Reduction Amount | Target Load by 2025 |
|---|---|---|---|
| Maumee River | 3,812 | 1,525 | 2,287 |
| Portage River | 359 | 144 | 215 |
| Sandusky River | 1,100 | 440 | 660 |
| Cuyahoga River | 452 | 181 | 271 |

The remaining three Annex 4 Priority Watersheds, the Toussaint, Vermilion, and Grand Rivers, are not included in this table because of their relatively small annual load totals (less than 150 MTA each). This represents less than 100 MTA of total reduction.




Total phosphorus source breakdown for Maumee River, water year 2013. From Nutrient Mass Balance Study 2016.




Total phosphorus source breakdown for Cuyahoga River, water year 2013. From Nutrient Mass Balance Study 2016.



# Ohio DAP Actions

Grouped by type of action

- Agricultural Land Management
- Community Based Nutrient Reduction
- Restoration and Support of Ecosystem Services
- Monitoring, Tracking, and Support

# Agricultural Land Management

- Agricultural Best Management Practices
  - ODA will identify and promote (with NRCS, others) a suite of practices to reduce nutrient loss from farm operations.
  - Revitalize LE-CREP
  - Complete Ohio Clean Lake – Watershed Restoration
- Research Actions
  - Edge of Field, modified Tri-State recommendations, improved Phosphorus Index, drainage control
- Education and Outreach Actions
  - Fertilizer certifications, Ohio Applicator Forecast, Farm Stewardship Certification

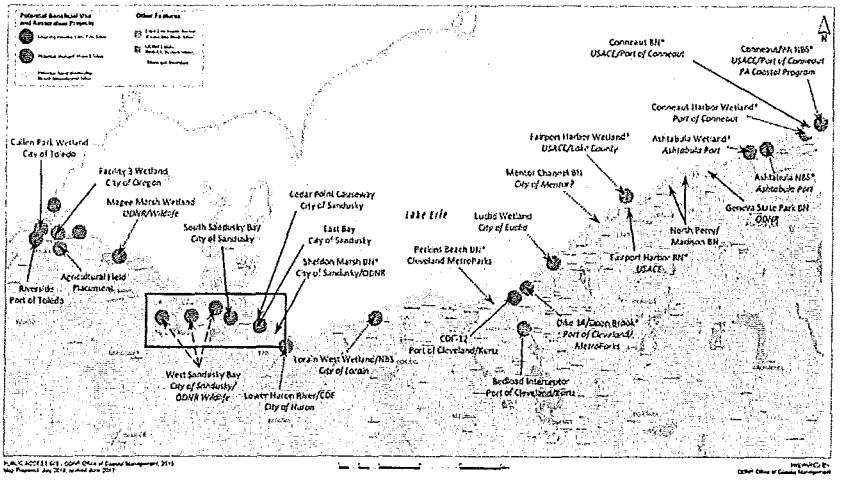


# Community–Based Nutrient Reduction

- Review and revise NPDES permits
  - Minor facilities in Annex 4 Priority Watersheds
  - Storm water program guidance
- Nutrient specific CSO study, review of Long Term Control Plans
- Continue infrastructure funding
- Develop Watershed Implementation Plans
- Evaluation of new technologies
- HSTS Operations and Maintenance

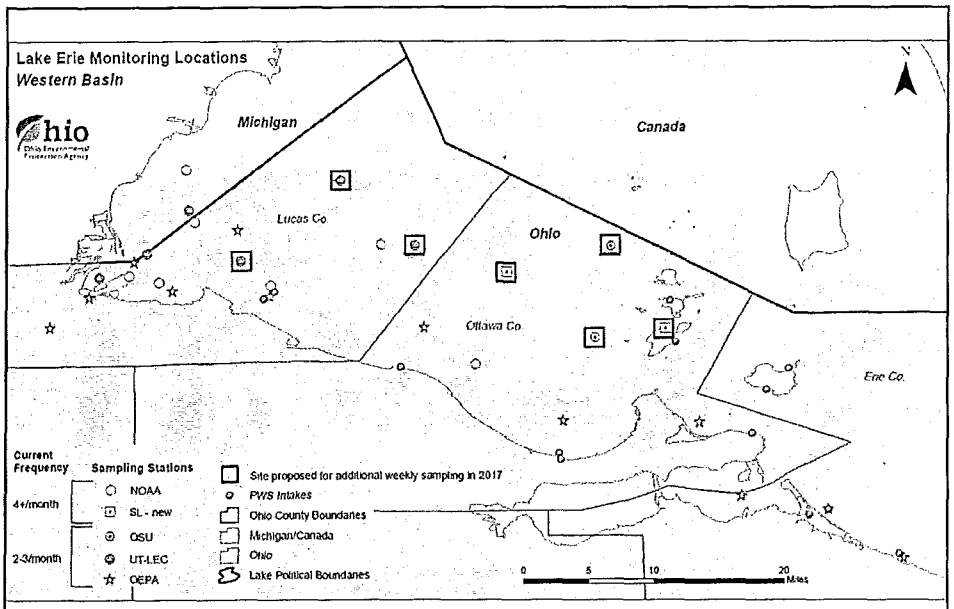
# Restoration and Support of Ecosystem Services

Potential Beneficial Use Restoration Projects



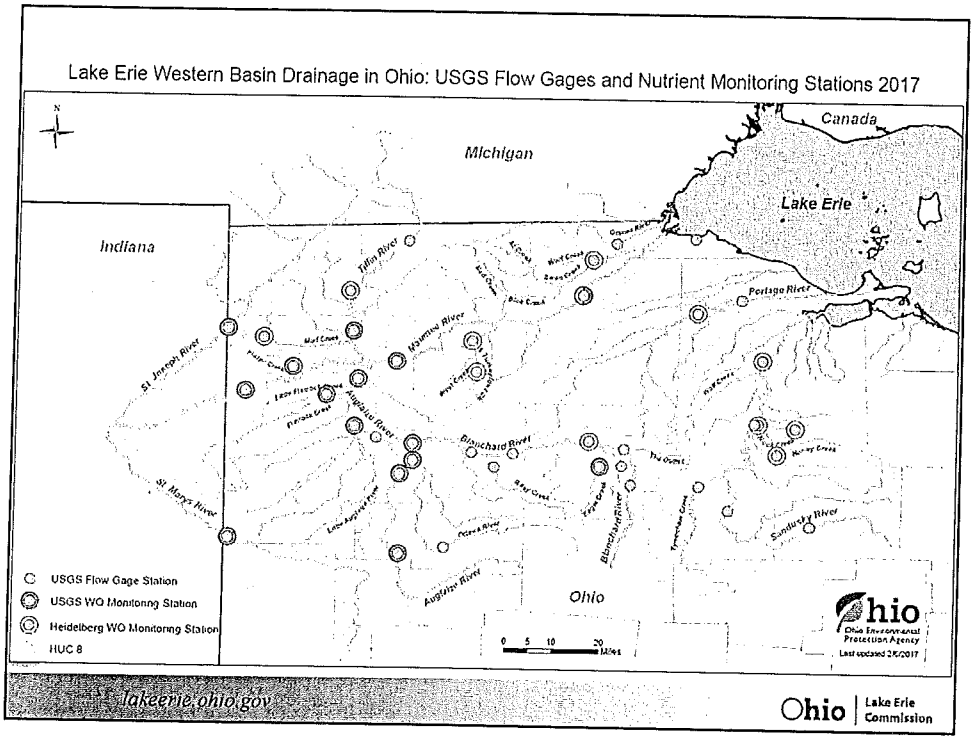

# Lake Erie Monitoring Highlights

- Continue to sample water quality at fixed shoreline and nearshore stations
- Central Basin Hypoxia -field profiles nearshore to offshore
- Plan is posted at: http://epa.ohio.gov/dsw/lakeerie/index.aspx#125073721-nearshore-monitoring



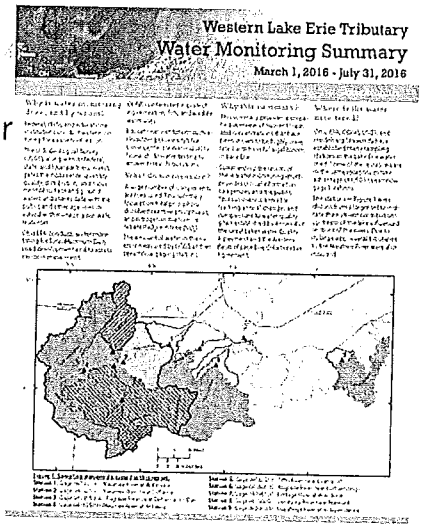

| River | Monitoring Frequency | Gage Station Number |
|---|---|---|
| Maumee | gage, frequent nutrient monitoring | Maumee River near Waterville USGS Gage Station 04193490 |
| Portage | gage, frequent nutrient monitoring | Portage River at Woodville USGS Gage Station 04195500 |
| Toussaint | no gage or monitoring | -- |
| Sandusky | gage, frequent nutrient monitoring | Sandusky River near Fremont USGS Gage Station 04198000 |
| Huron | gage, frequent nutrient monitoring starting 2017 | Huron River at Milan USGS Gage Station 04199000 |
| Vermilion | gage, monthly nutrient monitoring, surrogates | Vermilion River near Vermilion USGS Gage Station 04199500 |
| Cuyahoga | gage, frequent nutrient monitoring | Cuyahoga River at Independence USGS Gage Station 04208000 |
| Grand River | gage, frequent nutrient monitoring starting 2017 | Grand River near Painesville USGS Gage Station 04212100 |

# Monitoring Priorities for Annex 4




# Tracking & Reporting

- ErieStat
- Water Monitoring Summar
  - See *lakeerie.ohio.gov*
- U.S. EPA
  - Webinar
  - Other?




lakeerie.ohio.gov

Ohio | Lake Erie Commission

Ohio's Domestic Action Plan 1.0
lakeerie.ohio.gov



Thank You

*Great Lakes Water Conference – University of Toledo College of Law*

# Lake Erie Impairment; Michigan's 303(d) Decision and Path Forward

Kevin Goodwin
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Water Resources Division
Michigan Department of Environmental Quality

## CWA 303(d), 305(b), 314: Integrated Report

- Use existing **Criteria** as target or defined condition
- Link Criteria to relevant **Designated Use**
- Define **Indicators** of Designated Use support
- **Monitor** to collect indicator data
- **Assess** data for Designated Use support
  - Supporting  Insufficient Info  Not Supporting
- **Next Steps** if Impaired – schedule for actions

## Example: Lake Erie Fish Consumption

- **Criteria**: Human Health Values for Bioaccumulative Chemicals (Rule 323.1057, Part 4 Water Quality Standards)
- **Designated Use**: Fish Consumption
- **Indicators**:
  - Ambient Water concentration - Bioaccumulative Chemicals
  - Eat Safe Fish guidelines: Fish Consumption Advisory (based on fish tissue data) - Bioaccumulative Chemicals
- **Monitoring**: Fish Tissue
- **Assessment**: Fish consumption advisories for PCBs
- **Next Step**: Inclusion in statewide PCB TMDL

## Criteria: Nutrient Rules

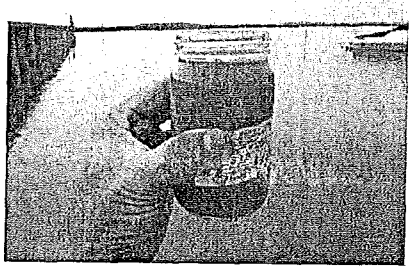
- Rule 323.1060(2) of Part 4 Rules:
  - Nutrients shall be limited to the extent necessary to prevent **stimulation of growths** *(emphasis added)* of aquatic rooted, attached, suspended, and floating plants, fungi or bacteria which are or may become injurious to the designated uses of the surface waters of the state
  - Narrative Condition

## Designated Use

- "...are or may become injurious to the designated uses of the surface waters of the state"
- Aquatic Life impacts – ecological imbalance
  - *Warmwater Fishery Use* – no clear link
  - *Other Indigenous Aquatic Life and Wildlife Use* – reflects full range of ecological processes

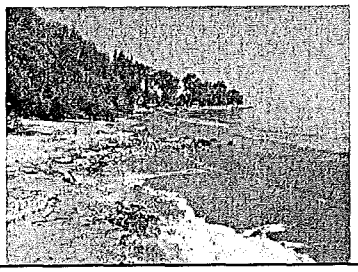
## Indicators

- "...stimulation of growths of aquatic rooted, attached, suspended, and floating plants, fungi or bacteria..."
- Signs of nutrient expression – observations of bacteria, algae, plants, fungi, etc.



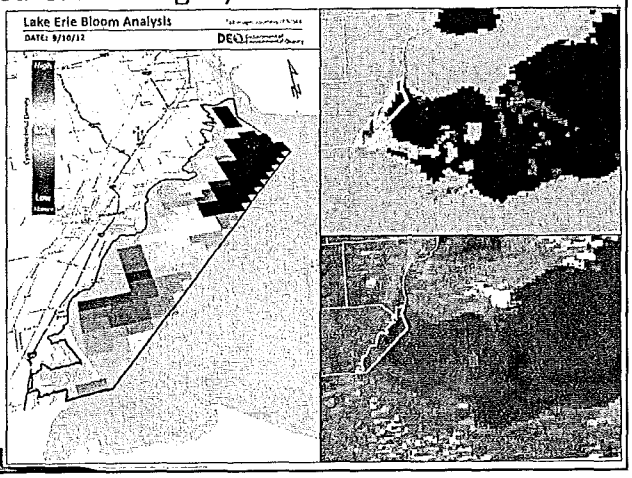
# Monitoring

- 2011: Historic Bloom
- 2012 -1015: Water Resources Division conducts Lake Erie beaches/shoreline monitoring
  - 7 Beaches, biweekly June – September
  - Looking for visible expression of nutrients – blooms, beach debris, color changes, odors
  - Understand conditions over Michigan's shoreline extent and over time



# Monitoring

- Informed by others' efforts – NOAA bloom monitoring and forecasting; satellite imagery
- Frequency, Duration, Intensity/ Coverage



## Assessment

- Visual observations along shoreline + satellite imagery for broader scale understanding
- Repeated, persistent, extensive blue-green algae blooms reflect ecological imbalance and demonstrate the Other Indigenous Aquatic Life and Wildlife Use is not supported.
- Other Indigenous Aquatic Life and Wildlife Use is Impaired

## Next Step

- Michigan believes the best approach is through a holistic, multi-jurisdictional perspective, that is not part of the state TMDL process.
- Annex 4 of the GLWQA and the Western Basin of Lake Erie Collaborative Agreement establish a collaborative process
- Acknowledging that a TMDL or other approach allowed by the USEPA to address impaired waters under the CWA will be required unless designated uses are restored first.

## Next Step

- Michigan's current TMDL vision, approved in 2015, identifies TMDL development commitments through 2022.
- Evaluation of whether a TMDL or another option is suitable, as well as the implementation timeline will be determined during the 2022 TMDL vision review process.
- In the meantime, Michigan is strongly committed to reducing phosphorus loadings to the WLEB under Annex 4 and the Collaborative Agreement

## GLWQA Annex 4 and WLEB Collaborative

- The Great Lakes Water Quality Agreement (GLWQA) was updated in 2012 to address water quality issues in Lake Erie
  - Significant nuisance and harmful algal issues in the Western Basin,
  - Low dissolved oxygen in the Central Basin
- The Western Lake Erie Basin Collaborative Agreement was signed in 2015 by Michigan, Ohio, and Ontario to address issues in the Western Basin
  - 20% reduction of phosphorus by 2020
  - 40% reduction of phosphorus by 2025

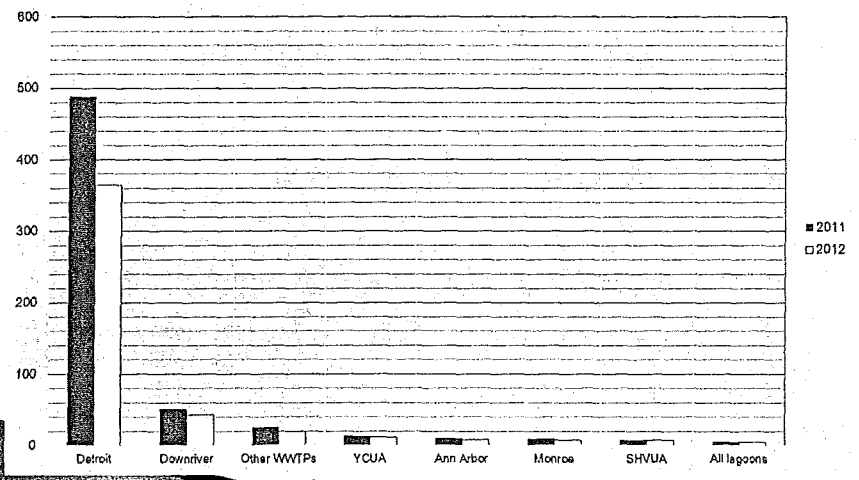
## Domestic Action Plan (DAP)

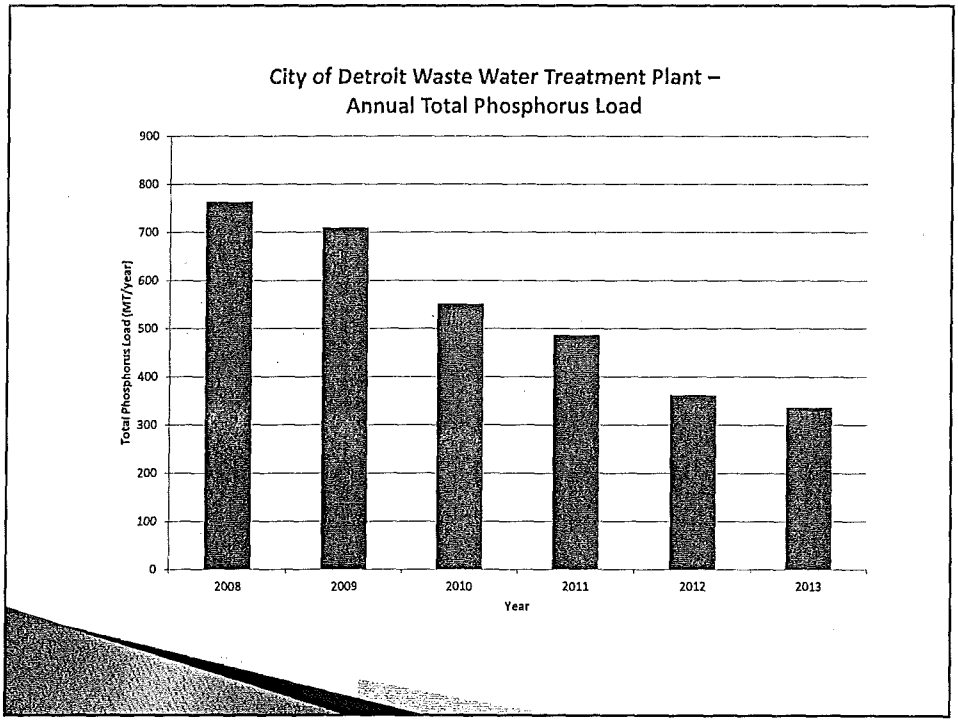
- Plan for MDEQ, MDARD, and MDNR
- Adaptive management approach
- To be successful, collaboration with OH, IN, ON, and Canadian and U.S. federal agencies is critical

## Michigan DAP Focus

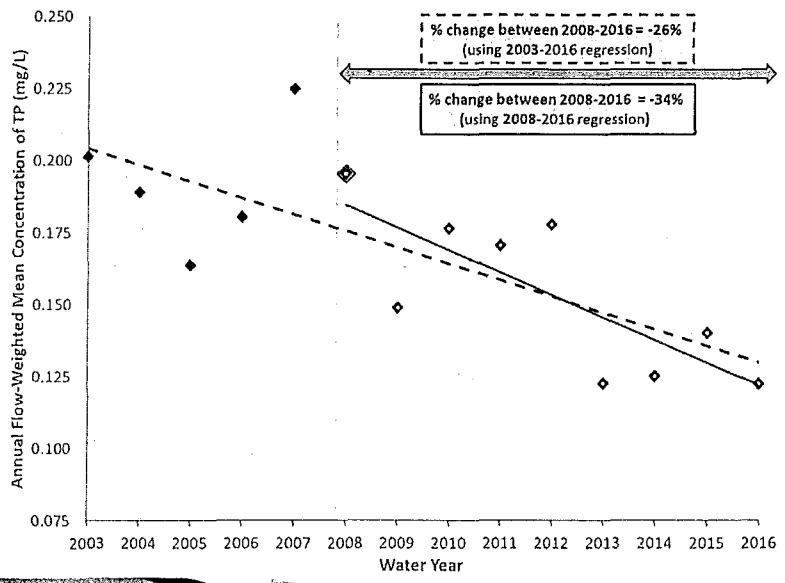
- Detroit River
- River Raisin
- Maumee River (two Michigan watersheds; Bean Creek and St. Joseph River)

# Summary of Point Source Loads from Major Urban Sources (Metric Tons)



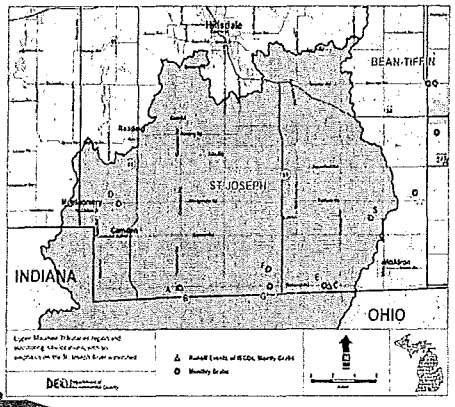



## Recent Trends in River Raisin Total Phosphorus

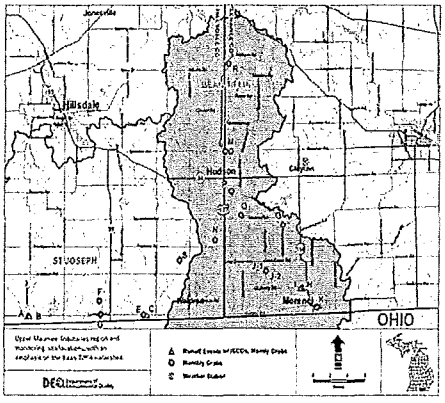



# Upper Maumee River Tributary Monitoring

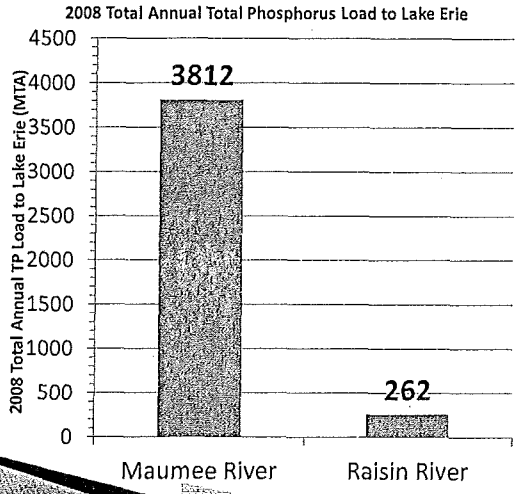
St. Joseph Watershed




Bean-Tiffin Watershed



The graph below shows how the River Raisin compares to the Maumee River (using 2008 loads)




# MDEQ Actions Moving Forward

- Waste Water Treatment Plant reductions
- Better understand River Raisin phosphorus reductions
- Monitoring and implement Maumee River Watershed reductions
- Implement Nonpoint Source reductions throughout Michigan's portion of the basin

## MDEQ Actions Moving Forward
### Support and Invest in Research*

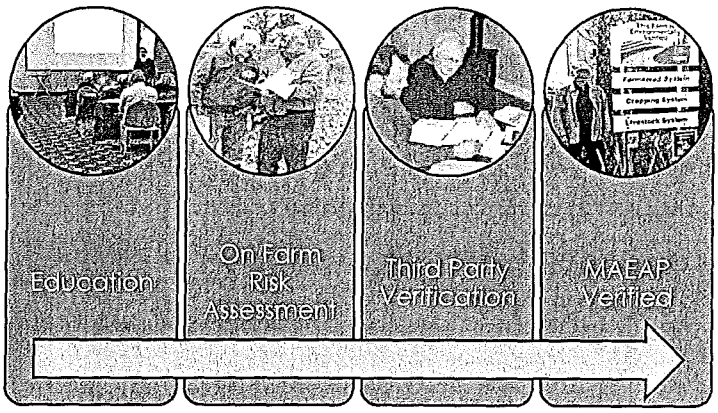
- Harmful algal bloom research priorities
  - Presence, timing, cause, toxin detection in WLEB Michigan waters,
- Soluble Reactive Phosphorus
  - Different analytical methods
  - Cycling conversion and uptake of this form of phosphorus, and
  - Effective source controls and management practices.

*multi-agency task

## MDARD Actions Moving Forward -
### Conservation District Technical Assistance and Partnerships

- Maintain increased Michigan Agriculture Environmental Assurance Program (MAEAP) technicians in the Western Lake Erie Basin to support farmers implementing conservation
- Partner with Ag Industry (Certified Crop Advisors and 4R Program) to promote conservation
- Partner with Natural Resources Conservation Service, MSU Extension Program, etc. to train technicians that also support farmers

## How Does MAEAP Work?




## MDARD Actions Moving Forward - MAEAP Participation/Verifications and Long-Term Practice Installation

- Partner to secure additional funding and cost share opportunities
- Increase MAEAP verifications and cropland acres managed under nutrient management plans
- Maintain a minimum of 85% reverification rate
- MAEAP Technicians identify environmental risks and recommend and prioritize BMP installation
- Track the environmental gains on both verified and non-verified farms

## MDARD Actions Moving Forward – Understand & Demonstrate BMPs, and Monitoring Sediment & Nutrient Sources

- 2016 - New MAEAP Database tracks BMP installation, sediment reductions, and nutrient reductions
- 2017/18 – create and deploy GIS Spatial mapping decision tool on MAEAP Database
- Continue to seek new information through partnerships with research institutions and federal agencies

## MDARD Actions Moving Forward – Outreach to Public and Farmers: Increase Understanding of Conservation BMPs and Stewardship Opportunities

- MAEAP communication committee will target outreach to the public and farmers on actions taking place on the landscape
- Host Field-to-Great Lakes Events to connect farmers to Lake Erie resource
- Implement On-farm Field days, educational events to encourage farmer enrollment

## MDNR Actions Moving Forward

- Implement wetland restoration on state managed lands
- Partner with other organizations and landowners to pursue implementation of strategic conservation easements in key wetland areas
- Review of DNR owned lands and facilities for potential P contributions

## Evaluation and Adaptive Management

Two levels of adaptive management: Basin and State

- Lake Erie Basin level collaboration
- State level review and evaluation of progress
  - State, federal, universities, NGOs, industry
  - Incorporate scientific understanding
  - Guide tactical actions and adjustments
  - Track progress

## Measuring Progress & Reporting

- QOL agencies - online presence to track performance against the 20 percent and 40 percent reduction goals.
- Will continue to track the Detroit River and Raisin River progress on nutrient reductions.
- Michigan will also develop a long term monitoring strategy for the Maumee River tributaries (i.e., Bean Creek and St. Joseph River) as most appropriate for its contribution to overall P loads.
- Will continue work in Federal Annex 4 process.

## Questions?

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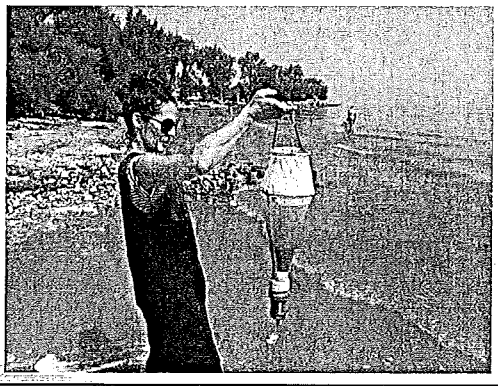
goodwink@Michigan.gov



Great Lakes Water Quality Conference, University of Toledo College of Law 11/03/2017
Summary information related to Michigan's 2016 Lake Erie impairment listing.

*Excerpts from*
WATER QUALITY AND POLLUTION CONTROL IN MICHIGAN
2016 SECTIONS 303(d), 305(b), AND 314
INTEGRATED REPORT
http://www.michigan.gov/documents/deq/wrd-swas-ir2016-report_541402_7.pdf

The federal Water Pollution Control Act (PL 92-500), also known as the Clean Water Act (CWA), requires states to provide the United States Environmental Protection Agency (USEPA) with an assessment of the quality of their waters [Section 305(b)], a list of waters that do not support their designated uses or attain Water Quality Standards (WQS) and require the development of Total Maximum Daily Loads (TMDLs) [Section 303(d)], and an assessment of status and trends of publicly owned lakes (Section 314).

A primary objective of this Integrated Report (IR) is to describe attainment status of Michigan's surface waters relative to the designated uses specified in Michigan's WQS. Michigan's Part 4 Rules, WQS, are promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). Michigan's WQS are consistent with the Great Lakes Initiative, establish minimum water quality requirements by which the waters of the state are to be managed, and provide the primary regulatory framework that guides the MDEQ's water quality monitoring/assessment and water protection activities. To describe the attainment status of surface waters, each water body is placed in at least one of five reporting categories (see Section 4.11 of Michigan's 2016 Integrated Report) based upon the amount of information known about the water body's water quality status, the degree of designated use support, and the type of impairment preventing designated use support.

Michigan's assessment methodology (Chapter 4 in Michigan's 2016 Integrated Report) describes the data and information used to determine designated use support, explains how these data and information are used to determine designated use support for surface waters of the state, and describes how surface water resources are reported using five categories (fully supporting, partially supporting, not supporting, insufficient information, or not assessed, described in more detail in Section 4.11 of Michigan's 2016 Integrated Report). Ultimately, this methodology describes the process used to develop several of the appendices and summary tables included in this IR to satisfy the requirements of Sections 305(b) and 303(d) of the federal CWA.

Each dataset for a water body is evaluated to determine if the data are representative of existing conditions and of adequate quality to make designated use support decisions. Data may not be representative of existing conditions if land use, point sources, or hydrologic conditions were substantially changed since the point of last data collection. Data may not be of adequate quality if field or laboratory methods changed to address quality concerns subsequent to data collection. In addition, the quantity of data; duration, frequency, magnitude, and timing of WQS exceedances; analytical method sensitivity; and contextual information (e.g., naturally occurring, weather, and flow conditions, etc.) are considered to ensure the data are representative of critical conditions.

At a minimum, all surface waters of the state are designated and protected for all of the following designated uses: agriculture, navigation, industrial water supply, warmwater fishery, other indigenous aquatic life and wildlife, partial body contact recreation, and fish consumption

(R 323.1100[1][a]-[g] of the Part 4 rules). In addition, all surface waters of the state are designated and protected for total body contact recreation from May 1 to October 1 (R 323.1100[2]). Specific rivers and inland lakes as well as all Great Lakes and specific Great Lakes connecting waters are designated and protected for coldwater fisheries (R 323.1100[4]-[7]). Several specific segments or areas of inland waters, Great Lakes, Great Lakes bays, and connecting channels are designated and protected as public water supply sources (R 323.1100[8]). The Part 4 rules form the basis for this assessment methodology.

Most designated uses have one or more types of assessment that may be used to determine support. The assessment types include biological, habitat, physical/chemical, toxicological, and pathogen indicators, among others. For example, to determine support for the other indigenous aquatic life or wildlife designated use, biological or physical/chemical assessment types (e.g., rapid bioassessment of the macroinvertebrate community or chemical analysis of water samples) may be used. In addition, a variety of parameters may be considered for the same assessment type. For example, physical/chemical assessments to determine fish consumption designated use support may include analysis of mercury or PCB concentrations in the water column.

Michigan uses the principle of independent applicability when making a support determination for each designated use for each water body. If data for more than one parameter are available that are used to determine support for the same designated use, then each data type is evaluated independently to determine support for the designated use. If any one type of data indicates that the designated use is not supported, then generally, the water body is listed as not supporting that designated use. In some instances, data require reevaluation to resolve discrepancies. Some particular data types or situations may require consideration of multiple data types in combination. If no data are available for any assessment methods, then a water body is considered not assessed.

A single parameter may be used to make support determinations for more than one designated use. For example, appropriate data for a water body may reveal that water column mercury concentrations exceed the wildlife value and human noncancer value (HNV) (nondrinking water) (R 323.1057); therefore, both the other indigenous aquatic life and wildlife, and fish consumption designated uses are not supported. The inclusion of a parameter under a specific designated use in this assessment methodology does not preclude the use of that parameter to make support determinations for a different designated use.

***(from: Chapter 4. Assessment Methodology)***

## 4.6 Designated Use: Other Indigenous Aquatic Life and Wildlife

### *4.6.2 Assessment Type: Biological*

*4.6.2.2 Bacteria, Algae, Macrophytes, and Fungi*

Site-specific visual observation of bacteria, algae, macrophytes, and fungi may be used to make a support determination for the other indigenous aquatic life and wildlife designated use. In addition, water column nutrient concentrations may also be used to support this determination (see Section 4.6.1.2 of Michigan's 2016 Integrated Report).

A determination of not supporting will be made if excessive/nuisance growths of algae (particularly, *Cladophora*, *Rhizoclonium*, and cyanobacteria) or aquatic macrophytes are present. Although the determination of excessive, nuisance conditions is generally made using best professional judgement in accordance with narrative WQS, P51 offers the following guidance to make these determinations for streams:

- *Cladophora* and/or *Rhizoclonium* greater than 10-inches long covering greater than 25% of a riffle.
- Rooted macrophytes present at densities that impair the designated uses of the water body.
- Presence of bacterial slimes.

For inland lakes and impoundments, chlorophyll *a* (used as a surrogate for algal biomass) is a component of the TSI calculation and is used quantitatively to determine the trophic state (see Section 4.6.1.2 of Michigan's 2016 Integrated Report).

***(from: Chapter 5. Assessment Results)***

## 5.7 Designated Use Support Summary

- The western basin of Lake Erie has been experiencing widespread and persistent cyanobacteria blooms over the past ten or more years; some reaching historic record sizes (International Joint Commission, 2014). The narrative nutrient criteria under Rule 323.1060(2) of the Part 4 Rules states: "In addition to the protection provided under subrule (1) of this rule, nutrients shall be limited to the extent necessary to prevent stimulation of growths of aquatic rooted, attached, suspended, and floating plants, fungi or bacteria which are or may become injurious to the designated uses of the surface waters of the state."
  Rule 1060(2) may be assessed to support of the other indigenous aquatic life and wildlife designated use, among other ways, by using nutrient expression by biological indicators. Following Section 4.6.2.2., a determination of not supporting will be made if excessive/nuisance growths of algae (particularly, Cladophora, Rhizoclonium, and cyanobacteria) or aquatic macrophytes are present.

  The repeated, persistent, and extensive cyanobacteria blooms impacting the western basin of Lake Erie have been determined to be excessive/nuisance conditions leading to ecological imbalance. Both internal and external information were reviewed, leading to the assessment of the other indigenous aquatic life and wildlife designated use as not supported. The routine observation of visible blooms at seven monitored Michigan beaches typically starting in early July through September from 2012 to 2015 confirmed the shoreline extent that cyanobacteria blooms and associated surface scums may affect. Additionally, the confirmation of widespread, persistent blooms often throughout much of Michigan's Lake Erie waters during the same period were demonstrated by satellite imagery processed by the NOAA (www.glerl.noaa.gov/res/HABs_and_Hypoxia/lakeErieHABArchive/). The data from both sources lend support to adding to the entirety of Michigan's Lake Erie waters a designation of not supporting for the other indigenous aquatic life and wildlife designated use based on excessive and nuisance cyanobacteria conditions. Michigan's Lake Erie jurisdiction is already listed as not supporting for the fish consumption designated use based on extensive fish tissue data from multiple species for bioaccumulative chemicals.

The significance of the cyanobacteria bloom issue in Lake Erie is further evidenced by the Great Lakes Water Quality Agreement Annex 4 (Nutrients) workgroup, including representatives from the State of Michigan, focusing first and foremost on the Lake Erie issues of algal community imbalance, cyanotoxins, hypoxia, and maintenance of trophic conditions. There is broad agreement that excessive nutrients are the primary cause, from a pollutant perspective, of these changes to Lake Erie's ecosystem. As such, total phosphorus has been identified as the target nutrient for necessary reductions, with the acknowledgement that other relevant nutrients (particularly bioavailable phosphorus forms and nitrogen sources) will also be reduced concomitantly.

The Annex 4 Objectives and Targets Task Team was charged with identifying target reductions to achieve a level of algal growth that supports a healthy and productive Lake Erie, acknowledging that the complete elimination of algae is not in keeping with a healthy aquatic ecosystem. Load reductions were set using the 2004 and 2012 cyanobacteria blooms as the targets at, or below which, future blooms should be maintained 90% of the time. Similarly, it is anticipated that success at eliminating nuisance cyanobacteria bloom conditions will be demonstrated within Michigan waters of Lake Erie based on evaluation of future conditions aligning with the goals identified by the Task Team.

The Annex 4 Objectives and Targets Task Team Final Report (May 11, 2015) went through a significant deliberative process to identify sources and loading estimates of total phosphorus to Lake Erie. Data from extensive monitoring data sets as well as NPDES discharge monitoring reports were used to develop load estimates by major tributary with particular focus on the Detroit River and the Maumee River watershed, widely acknowledged the two primary sources of total phosphorus. Based on the above goals, the subcommittee set the load targets of 40 percent reductions in total phosphorus entering the western basin, including, and of particular relevance for Michigan, a 40 percent reduction in spring total and soluble reactive phosphorus (SRP) from the River Raisin, and a 40 percent reduction in spring SRP from the Maumee River, some headwaters to which are in Michigan. Other specific tributaries were targeted as well, but are not in Michigan and so are not discussed in the context of this listing.

The 40 percent reduction of total phosphorus loads to Lake Erie are expected to be met by 2025, with an interim goal of 20 percent reduction by 2020, as stated in the Western Basin of Lake Erie Collaborative Agreement signed in June 2015 by Michigan's Governor Rick Snyder with Premier Kathleen Wynne of the Province of Ontario and Lieutenant Governor Mary Taylor of Ohio.

Michigan's Implementation Plan, developed under the Collaborative Agreement, spells out the Department's commitment to track progress on reductions using discharge monitoring data for the Detroit Water and Sewerage Department (Detroit River), Wayne County Downriver Wastewater Treatment Plant (Detroit River), and Monroe Publicly-Owned Treatment Works (River Raisin) NPDES permits as well as using USGS gauging station data (River Raisin). A monitoring strategy will be developed for the Maumee River tributaries to enable tracking effectiveness. Michigan will report annually on the status of total phosphorus reductions relative to the 2008 baseline loading year for the Detroit River, River Raisin, and Michigan's portion of the Maumee River watershed.

The Michigan Departments of Agriculture and Rural Development and of Natural Resources are actively working alongside the MDEQ to address the algae blooms and nutrient loading to the western Lake Erie basin. Plans from the three state agencies will be merged into a draft Domestic Action Plan early in 2017 as part of the Annex 4 process and using the Collaborative Agreement as a primary building block. When combined with Domestic Action Plans from other states and Canada we will have established a road map for addressing this problem.

Similarly, other jurisdictions are developing Domestic Action Plans under Annex 4 to achieve target nutrient reductions using approaches that are most sensible under their programs, rules, and other guidance. Differences in how various jurisdictions define their water quality criteria, gather data, and assess their designated uses leads to potential differences in how they define and address water quality concerns. The Collaborative Agreement and Annex 4 process allows for these variations, while collectively acknowledging current problems in western Lake Erie and establishing a common goal toward which all jurisdictions are working.

Because of the complexity of the cyanobacteria bloom problem Michigan 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 Western Basin of Lake Erie Collaborative Agreement as they afford a holistic, multi-jurisdictional perspective that does not exist in a traditional TMDL process. Nonetheless, if the current collaborative processes fail to restore designated use support we recognize that a TMDL or other approach allowed by the USEPA to address impaired waters under the CWA will be required.

Michigan's TMDL schedule is aligned with the TMDL vision process described in Section 9.3.3 of Michigan's 2016 Integrated Report and Michigan's 2015 TMDL vision identifies TMDL expectations through 2022. The TMDL vision process will continue in 2022 by establishing the next series of priorities for Michigan's TMDL program; part of this next prioritization will be the evaluation of progress under the collaborative agreements related to the western Lake Erie basin. Michigan is strongly committed to reducing phosphorus loadings to western Lake Erie as outlined in the Implementation Strategy noted above.

**THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF OHIO**

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ENVIRONMENTAL LAW AND POLICY CENTER
35 East Wacker Drive, Suite 1600
Chicago, IL 60601

Case No. _____

ADVOCATES FOR A CLEAN LAKE ERIE

Judge _____

MICHAEL S. FERNER

SUSAN M. MATZ

Plaintiffs,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N.W.
Mail Code: 1101A
Washington, D.C. 20460

SCOTT PRUITT, in his official capacity as Administrator of the United States Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N.W.
Mail Code: 1101A
Washington, D.C. 20460

ROBERT KAPLAN, in his official capacity as
Acting Regional Administrator of United States
Environmental Protection Agency, Region 5,
77 West Jackson Boulevard
Mail Code: R-19J
Chicago, Illinois 60604-3507

Defendants. /

**THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF OHIO**

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**PETITION FOR JUDICIAL REVIEW**

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Plaintiffs Environmental Law & Policy Center ("ELPC"), Advocates for a Clean Lake Erie ("ACLE"), Michael Ferner, and Susan Matz, who bring this action on behalf of themselves and ELPC's and ACLE's members, allege the following:

## NATURE OF THE ACTION

1. Plaintiffs are seeking judicial review of the Defendants United States Environmental Protection Agency's ("U.S. EPA"), U.S. EPA Administrator Scott Pruitt's, and U.S. EPA Acting Regional Administrator Robert Kaplan's approval on May 19, 2017 of the list of impaired waters submitted by Ohio Environmental Protection Agency ("Ohio EPA"), pursuant to Section 303(d) of the Clean Water Act ("CWA"), 33 U.S.C. § 1313(d). The CWA requires a state to assess and identify all waters within its boundaries that fail to meet the state's water quality standards, submitted as a biennial "impaired waters list" under U.S. EPA's implementing regulations. Yet Ohio failed to include the open waters of Lake Erie on its impaired waters list, and even refused to evaluate whether the open waters are meeting Ohio water quality standards, despite the fact that toxic algae blooms have occurred and are reasonably likely to continue occurring on those waters. By contrast, on February 2, 2017, U.S. EPA issued its approval of the Michigan Department of Environmental Quality's impaired waters list, which *did* include the open waters of Lake Erie within Michigan's jurisdiction, where toxic algae blooms have occurred and are reasonably likely to continue occurring. The Defendants' approval of the

impaired waters list submitted by Ohio EPA accordingly violated the Administrative Procedure Act, 5 U.S.C. § 706(2)(A), because U.S. EPA's decision was arbitrary, capricious, and not in accordance with the law under CWA section 303(d) and 40 C.F.R. § 130.7.

2. U.S. EPA's approval of Ohio's 2016 impaired waters list was a final agency action subject to judicial review pursuant to the Administrative Procedure Act, 5 U.S.C. § 704, and the Clean Water Act, 33 U.S.C. § 1313(d).

3. Lake Erie is facing a water quality crisis. For years, it has been, and continues to be, plagued by pollution, especially phosphorus pollution from "non-point" sources such as fertilizer and manure runoff. This phosphorus pollution decreases the lake's water quality and leads to serious adverse conditions that make Lake Erie unsafe for recreation and as a source of drinking water, among other uses.

4. One of these adverse conditions is the growth of algal blooms. Algal blooms produce toxins such as microcystin that can make people and pets seriously ill, and also sicken or even kill aquatic life. Even when algal blooms do not produce harmful levels of toxins, they can lower the levels of oxygen in the water and block sunlight, causing aquatic "dead zones" that adversely affect fish and other aquatic life.

5. Such algal blooms have been increasingly occurring on Lake Erie, including on the open waters of the lake, making these waters unenjoyable—and indeed unsafe—for recreational activities such as swimming, boating, jet-skiing, and fishing. The algal blooms also threaten local businesses that rely on a lake that supports these recreational uses, and are harmful to aquatic life in the open waters of Lake Erie. These same algal blooms, when they form near or drift toward drinking water intakes, can contaminate the water and render it undrinkable without treatment, imposing continuing risks and costs for public drinking water supplies.

6. In 2015, the algal blooms in the western basin of Lake Erie lasted over 40 days. These algal blooms were deemed "the most severe this century," with "dense scum cover[ing] up to 300 square miles of the western basin." National Oceanic and Atmospheric Administration, EXPERIMENTAL LAKE ERIE HARMFUL ALGAL BLOOM BULLETIN 27 at 1 (Nov. 10, 2015), *available at* www.glerl.noaa.gov/res/HABs_and_Hypoxia/lakeErieHABArchive/bulletin_2015-027.pdf. Sizeable algal blooms were also recorded in 2011 and 2013. In 2014, an algal bloom that extended far into Lake Erie's open waters enveloped Toledo's drinking water intake. As a result, 500,000 people were deprived of potable drinking water for three days. Tom Henry, *Toledo Seeks Return to Normalcy After Do Not Drink Water Advisory Lifted*, TOLEDO BLADE, Aug. 5, 2014, *available at* http://www.toledoblade.com/local/2014/08/05/Toledo-seeks-return-to-normalcy-after-do-not-drink-water-advisory-lifted.html.

7. Section 303(d) of the Clean Water Act, 33 U.S.C. § 1313(d), requires each state to address water quality problems such as these by periodically assessing whether any pollutant is preventing waters within its boundaries from meeting the state's water quality standards even with existing pollution controls.

8. If any pollutant is preventing waters within a state's boundaries from meeting the state's water quality standards, then the state must list the relevant waters as "impaired" by that pollutant.

9. Listing waters as impaired is an important first step in addressing pollution because the listing triggers procedures to develop a "Total Maximum Daily Load" ("TMDL"), a comprehensive plan to restore the waters of an impaired waterbody. 33 U.S.C. § 1313(d).

10. Under U.S. EPA's regulations implementing the impaired waters listing requirement, a state must "assemble and evaluate all existing and readily available water quality-

related data and information." 40 C.F.R. § 130.7(b)(5).

11. Ohio EPA is well aware that harmful algal blooms driven by phosphorus pollution have impaired the quality of Lake Erie's waters. When Ohio EPA was evaluating the condition of its waters in preparing its 2016 list of impaired waters under CWA section 303(d), it categorized all water within 100 meters of the shoreline of Lake Erie, as well as all water surrounding Lake Erie public drinking water intakes, as impaired by the effects of harmful algal blooms. OHIO ENVIRONMENTAL PROTECTION AGENCY, OHIO 2016 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT D-2, J-16 (Oct. 2016) ("2016 Integrated Report") (attached hereto as Exhibit A).

12. At the same time, Ohio EPA chose not to designate the same waters, suffering the same harmful algal blooms, as impaired beyond these limited and artificial boundaries.

13. This decision rested on two violations of CWA section 303(d) and 40 C.F.R. § 130.7: first, Ohio EPA failed to assemble and evaluate all existing and readily available water quality-related data and information regarding the adverse conditions on the open waters of Lake Erie that result from harmful algal blooms; and second, Ohio EPA refused to decide whether even the data and information that it had collected showed that the water quality of the open waters of Lake Erie is impaired.

14. Meanwhile, the State of Michigan did conduct the required assembly and evaluation of data regarding the contiguous portion of Lake Erie within its boundaries, and in 2016 designated its entire portion of Lake Erie as impaired under CWA section 303(d), based on "persistent significant algal blooms mid-late summer in western Lake Erie" causing "nuisance conditions related to nutrient expression." MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, WATER RESOURCES DIVISION, WATER QUALITY AND POLLUTION CONTROL IN

MICHIGAN: 2016 SECTIONS 303(d), 305(b), AND 314: INTEGRATED REPORT (Rev'd Jan. 2017) (attached hereto as Exhibit B).

15. U.S. EPA reviewed Michigan's impaired waters list as required under the CWA and approved it on February 2, 2017, specifically agreeing with the state's "assessment showing that the Michigan portion of Lake Erie is impaired by nutrients." U.S. EPA, DECISION DOCUMENT FOR THE APPROVAL OF MICHIGAN'S 2016 CLEAN WATER ACT SECTION 303(d) LIST (CATEGORY 5) 22 (Feb. 2, 2017) (attached hereto as Exhibit C).

16. Under such circumstances, U.S. EPA was obligated by CWA section 303(d) and its own regulations to disapprove of Ohio's list of impaired waterbodies and either remand the list for further consideration or itself declare the open waters of Lake Erie as impaired.

17. In this case, however, U.S. EPA did none of these things. Instead, U.S. EPA simply rubber-stamped Ohio's list in an approval issued on May 19, 2017, stating that "EPA is deferring to the State's judgment not to assess these waters for the 2016 list." U.S. 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) 9 (May 19, 2017) ("U.S. EPA Approval") (attached hereto as Exhibit D).

18. Accordingly, U.S. EPA failed to ensure that Plaintiffs and the general public have crucial information concerning Lake Erie's water quality, and failed to ensure that the required process for restoring the lake's water quality could begin.

19. Plaintiffs therefore initiate this action against Defendants U.S. EPA, Administrator Scott Pruitt, and Acting Regional Administrator Robert Kaplan, regarding U.S. EPA's approval of the impaired waters list submitted by Ohio EPA on October 20, 2016 pursuant to CWA section 303(d), 33 U.S.C. § 1313(d), and 40 C.F.R. § 130.7.

20. U.S. EPA's approval of this list violated the Administrative Procedure Act, 5 U.S.C. § 706(2)(A), because U.S. EPA's decision was arbitrary, capricious, and not in accordance with the law under CWA section 303(d) and 40 C.F.R. § 130.7.

21. Plaintiffs seek declaratory and injunctive relief requiring U.S. EPA to partially disapprove Ohio's impaired waters list and to add the open waters of Lake Erie to this list.

**JURISDICTION AND VENUE**

22. On May 19, 2017, U.S. EPA approved the impaired waters list that the State of Ohio had submitted on October 20, 2016.

23. U.S. EPA's approval of Ohio's 2016 impaired waters list was a final agency action subject to judicial review pursuant to 5 U.S.C. § 704. This approval: (1) was the consummation of U.S. EPA's decisionmaking process for this Ohio list; and (2) determined rights and obligations of the parties or caused legal consequences.

24. Plaintiffs bring this petition for judicial review of U.S. EPA's approval of Ohio's impaired waters list pursuant to 5 U.S.C. §§ 701 *et seq*. U.S. EPA's action was unlawful and should be set aside because it was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law" under 5 U.S.C. § 706(2)(A).

25. This court also has jurisdiction pursuant to 28 U.S.C. § 1331 because this is a civil action arising under laws of the United States.

26. U.S. EPA's failure to require that pollution in the open waters of Lake Erie be addressed through the development of a TMDL creates a continuing controversy that is actual and substantial.

27. A substantial part of the events or omissions giving rise to the claim occurred on or near Lake Erie, which is located in the Northern District of Ohio, Eastern Division, making

venue proper under 28 U.S.C. § 1391(e). Alternatively, venue is proper in this Northern District of Ohio because Plaintiffs Michael Ferner and Susan Matz are residents of this district.

**PARTIES**

28. Plaintiff ELPC is a Midwest-based not-for-profit public interest environmental legal and economic development advocacy organization focused on improving environmental quality, including clean water and healthy clean air, and protecting the Midwest's natural resources, including the Great Lakes. ELPC's headquarters is in Chicago and ELPC has additional staff and offices in Illinois, Indiana, Iowa, Michigan, North Dakota, Ohio, Wisconsin and Washington D.C. ELPC members live, work, and play in and near Lake Erie and other Great Lakes. They use clean water from Lake Erie as a source of drinking water, and they use and enjoy Lake Erie for aesthetic and recreational values.

29. Plaintiff ACLE is an environmental grassroots organization founded in Toledo, Ohio to protect the Western Lake Erie Basin and the communities that depend on it after a toxic algae bloom poisoned the drinking water for Toledo's more than 400,000 residents in August 2014. Part of ACLE's mission is to pressure government officials to get an impairment designation for the Western Lake Erie basin, which would produce an enforceable action plan to greatly reduce the harmful runoff that fuels toxic blooms of microcystin-producing cyanobacteria. ACLE's ultimate goal is to keep Lake Erie drinkable, fishable, and swimmable. ACLE is run by its members, who live and recreate near Lake Erie and depend on clean water from Lake Erie as a source of drinking water and aesthetic enjoyment, as well as a recreational resource.

30. Plaintiff Michael Ferner is a member of ELPC and a resident of Toledo, Ohio. Mr. Ferner serves as a coordinator for ACLE.

31. Plaintiff Susan Matz is a member of ELPC and a resident of Toledo, Ohio. She serves as a coordinator for ACLE.

32. Defendant U.S. EPA is an agency within the United States government that is responsible for implementing the CWA and approving or disapproving each state's impaired waters list.

33. Defendant Scott Pruitt is the Administrator of U.S. EPA and is being sued in his official capacity. The U.S. EPA Administrator is responsible for overseeing the agency, which in part includes overseeing its implementation of the CWA. This level of oversight extends to U.S. EPA's decisions about whether to approve or disapprove states' impaired waters lists, which includes the October 20, 2016 list submitted by Ohio EPA.

34. Defendant Robert Kaplan is the Acting Regional Administrator of U.S. EPA Region 5 and is being sued in his official capacity. He is responsible for overseeing Region 5 of the agency, which in part includes overseeing the Region's implementation of the CWA. The State of Ohio falls within the jurisdiction of Region 5. Mr. Kaplan's level of oversight extends to decisions about whether to approve or disapprove states' impaired waters lists within the jurisdiction of Region 5, which includes the October 20, 2016 impaired waters list submitted by Ohio EPA.

**STANDING**

35. Plaintiffs file this action on behalf of Susan Matz, Michael Ferner, and ELPC and ACLE and their members.

36. ELPC's and ACLE's members regularly use the open waters of Lake Erie under Ohio's jurisdiction for recreation, aesthetic enjoyment, observation, and water supplies, and will continue to do so in the future. These uses are directly impaired by algae blooms and other

phosphorus-related pollution. Such pollution harms water quality, reduces and damages fish populations, impedes the ability of boats to use the water, degrades aesthetic beauty, and threatens the safety of drinking water supplies.

37. ELPC and ACLE members own real and/or personal property in and around the open waters of Lake Erie under Ohio's jurisdiction that is adversely affected by algae blooms and other phosphorus-related pollution. Such adverse effects include lowering the value of such property and interfering with the use and enjoyment of the property.

38. The injuries in this case are directly traceable to U.S. EPA's unlawful approval of Ohio's deficient impaired waters list. The open waters of Lake Erie under Ohio's jurisdiction do not meet state water quality standards, yet Ohio EPA refused to identify such waters as impaired. U.S. EPA was therefore required to disapprove Ohio's list and identify such waters as impaired itself. 33 U.S.C. § 1313(d).

39. This identification is key to the process of actually restoring the water quality of the lake. Pursuant to CWA section 303(d)(1)(C), 33 U.S.C. § 1313(d)(1)(C), after a water is added to a state's impaired waters list, the state must then begin the process of establishing a cap on the amount of pollution contributing to the waters' impairment by creating a TMDL, and allocating that total cap to limit pollution loads from particular sources.

40. Thus, once the open waters of Lake Erie are on Ohio's impaired waters list, Ohio must create a TMDL that would cap the amount of phosphorus pollution from Ohio that enters the open waters of Lake Erie within Ohio's jurisdiction and allocate that cap to limit phosphorus loads from sources in the Lake Erie watershed. That cap might be more stringent than one aimed solely at addressing impairment along the shoreline of Lake Erie, or the source allocation might be different.

41. Some of the phosphorus pollution in Lake Erie comes from "point sources" that are directly subject to permit requirements and other regulations under the CWA. However, the primary contributor to phosphorus pollution in Lake Erie is "non-point sources" such as fertilizer and manure runoff. While such non-point sources are not directly regulated under the CWA, Ohio would have to provide U.S. EPA with "reasonable assurances" that it would be able to sufficiently reduce phosphorus pollution from such sources as part of its TMDL documentation. A TMDL is therefore the first step toward reducing pollution from point sources and non-point sources alike.

42. It is within U.S. EPA's control—and is indeed U.S. EPA's legal responsibility—to trigger the process that leads to the development of a phosphorus TMDL for all impaired Lake Erie waters within U.S. jurisdiction, which would cap the amount of pollution loaded into those waters.

43. A phosphorus loading cap will begin the process of restoring water quality and decreasing the threat posed by algae blooms, especially toxic algae blooms, on the open waters of Lake Erie.

44. However, in this case, as a result of U.S. EPA's unlawful approval of Ohio's impaired waters list, no comprehensive TMDL will be set for algae blooms and other phosphorus-related pollution that includes the open waters of Lake Erie, and no "reasonable assurances" will be made regarding contributions of phosphorus to the open waters of Lake Erie by non-point sources of pollution. Thus, phosphorus and other pollution will continue to harm Plaintiffs and their members.

45. U.S. EPA's unlawful approval of Ohio EPA's deficient impaired waters list inhibits the protection of water quality and thwarts important pollution regulation that would

have reduced and abated the injuries to Plaintiffs and their members.

46. Plaintiffs and their members are also suffering procedural and informational injuries resulting from U.S. EPA's unlawful approval of Ohio's deficient impaired waters list. The list is an important informational tool for the general public, providing the public with crucial information concerning the safety and health of certain water bodies. By allowing Ohio EPA to illegally omit the open waters of Lake Erie from its impaired waters list, U.S. EPA has obscured the potential harm of algal blooms and other phosphorus-related pollution from ELPC, its members, and the public.

47. In essence, U.S. EPA has allowed Ohio to falsely indicate through its omission that such waters are free from violations of its water-quality standards related to algae blooms and other phosphorus-related pollution. Plaintiffs and their members, and the general public, may therefore take fewer precautions regarding entering such waters and may be exposed to harm that they might otherwise have avoided with the proper information. ELPC and ACLE may also have to expend more organizational resources on educating potential members and the general public about the problem of algal blooms on Lake Erie.

48. The injuries to Plaintiffs and their members can be redressed by the declaratory and injunctive relief sought herein.

49. An order compelling U.S. EPA to disapprove of Ohio EPA's impaired waters list and to add the open waters of Lake Erie to that list will immediately provide Plaintiffs, their members, and the general public with crucial information regarding the health and safety of such waters—information that will help them avoid harm.

50. In addition, such an order will trigger a duty for Ohio EPA or U.S. EPA to develop a comprehensive TMDL for the open waters of Lake Erie within Ohio's boundaries.

Such a TMDL must be set at the levels necessary to attain the applicable water quality standards specifically in the open waters as well as other impaired portions of Lake Erie and will be incorporated into water management plans. Thus, a TMDL in this case will help prevent, extinguish, manage, and/or reduce the injuries alleged herein by beginning the process of ensuring that the water meets all applicable water quality standards.

51. The listing of the open waters of Lake Erie will also likely result in greater monitoring and management of these waters and better education regarding the causes and dangers of algae blooms and other phosphorus-related pollution.

52. Thus, the declaratory and injunctive relief sought herein will help prevent injuries both now and in the future.

## STATEMENT OF THE CASE

### Factual Background

53. The chemical phosphorus is a plant nutrient that can drive the excessive growth of algae in waterbodies. This includes excessive growth of cyanobacteria, commonly known as blue-green algae, which can produce toxins such as microcystin that harm human and animal health by affecting the skin, liver, or nervous system. 2016 Integrated Report at C-28. Excessive algae growth in a waterbody can also lead to depleted dissolved oxygen levels, fish kills, unpleasant odors, and other adverse effects. *Id.* These excessive growths are generally known as "harmful algal blooms" ("HABs").

54. Wind or water currents can result in movement of such algal blooms across a waterbody such as Lake Erie.

55. U.S. EPA recognizes that highly potent toxins from HABs are a significant hazard for human health and ecosystem viability.

56. Lake Erie, including the portion within Ohio's boundaries, has experienced significant harmful algal blooms over the last several years. For example, a significant toxic algae bloom in the western basin of Lake Erie on August 3, 2014 enveloped Toledo's drinking water intake with the result that public officials warned approximately 500,000 people in the Toledo area not to consume the affected tap water for three days due to toxic contamination. *Toledo Seeks Return to Normalcy After Do Not Drink Water Advisory Lifted*, TOLEDO BLADE, Aug. 5, 2014.

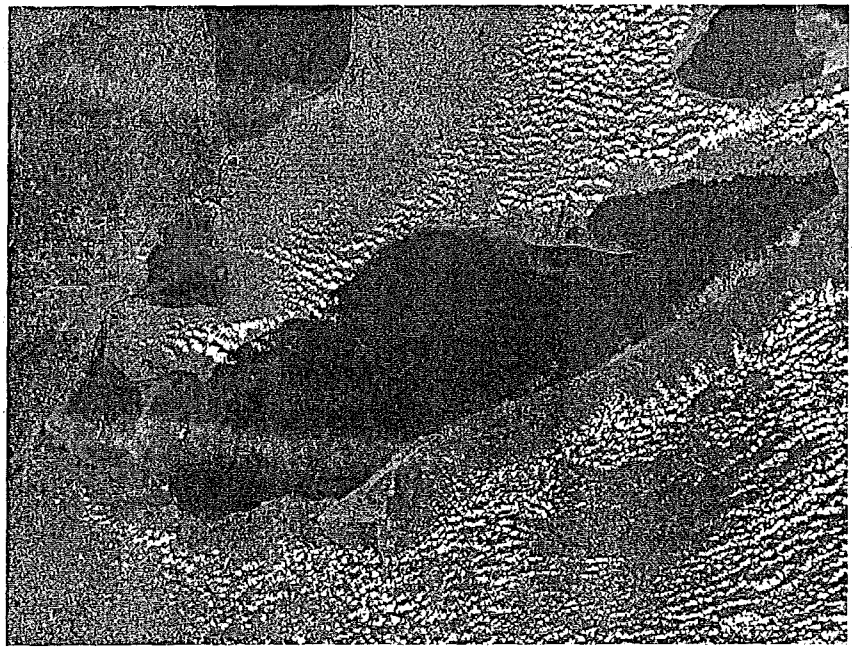
57. Sizeable harmful algal blooms developed on Lake Erie, including the open waters of the lake, in 2011, 2013, 2014, and 2015, as depicted in National Aeronautics and Space Administration ("NASA") Moderate Resolution Imaging Spectroradiometer ("MODIS") satellite imagery[1]:

2011 Harmful Algal Bloom

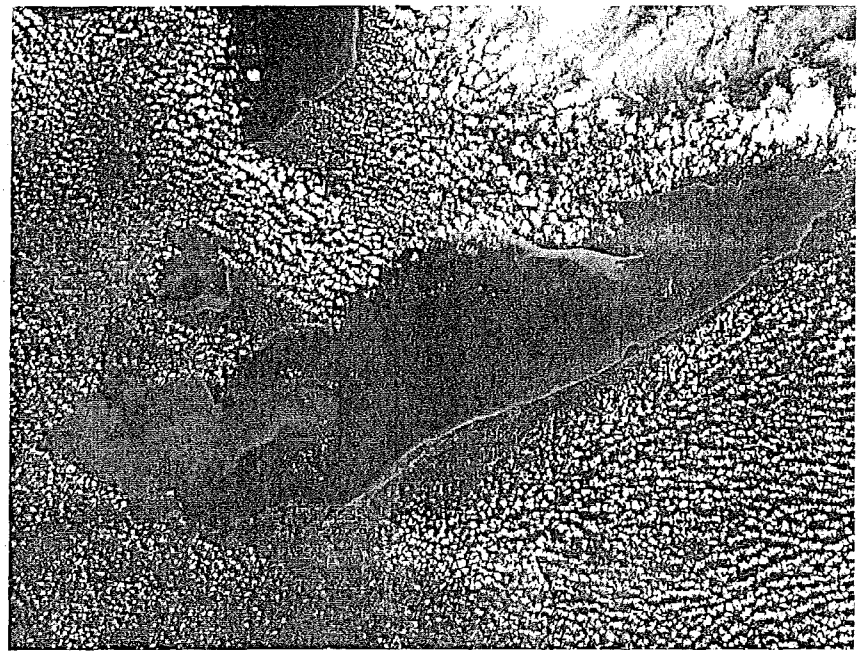
[1] These and other MODIS satellite images of HABs on Lake Erie are provided by the National Oceanic and Atmospheric Administration's Great Lakes Environmental Research Laboratory at the following website: https://www.flickr.com/photos/noaa_glerl/sets/72157639592150973.

2013 Harmful Algal Bloom

2014 Harmful Algal Bloom



2015 Harmful Algal Bloom



58. Scientists from the National Oceanic and Atmospheric Administration and other organizations have projected that significant algal blooms will occur on Lake Erie in 2017. NOAA, PARTNERS PREDICT SIGNIFICANT SUMMER HARMFUL ALGAL BLOOM FOR WESTERN LAKE ERIE (July 13, 2017), *available at* http://www.noaa.gov/media-release/noaa-partners-predict-significant-summer-harmful-algal-bloom-for-western-lake-erie.

59. There are numerous "point" sources of phosphorus pollution in Lake Erie. Such sources include, but are not limited to, wastewater treatment plants.

60. However, the primary contributors to phosphorus pollution in Lake Erie are "non-point" sources. OHIO EPA, OHIO LAKE ERIE PHOSPHORUS TASK FORCE FINAL REPORT 17 (Apr. 2010), *available at* http://epa.ohio.gov/portals/35/lakeerie/ptaskforce/Task_Force_Final_Report_April_2010.pdf.

These non-point sources are mostly agricultural facilities in the Lake Erie watershed that use manure and/or fertilizer, both of which contain significant amounts of phosphorus. This manure and fertilizer can be washed off fields during precipitation events, eventually ending up in the waters of Lake Erie.

## Legal Background

### Procedural Framework

61. The Clean Water Act serves "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA § 101(a), 33 U.S.C. § 1251(a).

62. Under the CWA, states must develop water quality standards that "shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses." CWA § 303(c)(2)(A), 33 U.S.C. § 1313(c)(2)(A).

63. The CWA requires states to determine whether any body of water within states' respective boundaries does not meet its designated uses. CWA § 303(d)(1)(A), 33 U.S.C. § 1313(d)(1)(A). States must do so by evaluating whether existing pollution controls "are not stringent enough to implement any water quality standard applicable to such waters." *Id.* States must develop a comprehensive list of all waterbodies identified during this evaluation, referred to herein as an "impaired waters list."

64. The CWA mandates that states submit their proposed impaired waters lists to U.S. EPA for its approval. 33 U.S.C. § 1313(d)(2). U.S. EPA must approve or disapprove states' proposed impaired waters lists before they may go into effect. *Id.*

65. If U.S. EPA was to disapprove of the omission of a waterbody from an impaired waters list, that waterbody would be added to the impaired waters list. 33 U.S.C. § 1313(d)(2).

66. After an impaired waters list has been approved, states must establish TMDLs for

waters included on the list. 33 U.S.C § 1313(d)(1)(c). As a part of the TMDL process, states must establish pollutant limits to ensure that waters on an impaired waters list can meet all applicable water quality standards. *Id.*

Code of Federal Regulations

67. U.S. EPA has codified its rules for implementation of the impaired waters listing process under CWA section 303(d) at 40 C.F.R. § 130.7.

68. For purposes of listing impaired waters under § 130.7(b), applicable water quality standards are the same as those established pursuant to section 303(d) of the CWA, which in part includes waters' designated uses and both the numeric and non-numeric "narrative" criteria for such waters based upon those uses. 40 C.F.R. § 130.7(b)(3).

69. Echoing CWA section 303(d), 40 C.F.R. § 130.7(b)(1) provides that a state "shall identify those water quality-limited segments still requiring TMDLs" because existing pollution controls "are not stringent enough to implement any water quality standards (WQS) applicable to such waters." According to 40 C.F.R. § 131.3(h), "Water quality limited segment means any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards."

70. In order to identify water quality-limited segments, otherwise known as impaired waters, states at a minimum must "assemble and evaluate all existing and readily available water quality-related data and information" for certain categories of waters that include, but are not limited to, "those for which water quality problems have been reported by local, state, or federal agencies; members of the public; or academic institutions. These organizations and groups should be actively solicited for research they may be conducting or reporting. For example, university researchers, the United States Department of Agriculture, the National Oceanic and

Atmospheric Administration, the United States Geological Survey, and the United States Fish and Wildlife Service are good sources of field data . . . ." 40 C.F.R § 130.7(b)(5), (b)(5)(iii).

71. After creating its impaired waters list, a state "shall provide documentation to the Regional Administrator to support the [its] determination to list or not to list its waters as required by §§ 130.7(b)(1) . . . ." 40 C.F.R § 130.7(b)(6). Information prepared pursuant to 40 C.F.R. § 130.7(b)(6) may be incorporated into a state's "Integrated Report," a biennial water quality report accounting for a state's submission requirements to U.S. EPA under CWA sections 303(d), 305(b), and 314.

72. "The Regional Administrator shall approve a list developed under § 130.7(b) . . . only if it meets the requirements of § 130.7(b)." 40 C.F.R § 130.7(d)(2).

73. After a waterway is added to an impaired waters list, states must prepare TMDLs for these waters. TMDLs can incorporate pollutant limits both for point sources, which are "discernable, confined and discrete conveyance[s]," CWA § 502(14), and for non-point sources. 40 C.F.R. § 130.2(g)-(i).

74. A state must submit an updated impaired waters list to U.S. EPA every two years. 40 C.F.R. § 130.7(d)(1).

U.S. EPA Guidance on Impaired Waters Lists

75. According to U.S. EPA, "303(d) lists are highly visible ways of communicating about the health of the nation's waters." U.S. EPA, 2002 Integrated Water Quality Monitoring and Assessment Report Guidance 5 (Nov. 19, 2001), *available at* www.epa.gov/sites/production/files/2015-10/documents/2002_02_13_tmdl_2002wqma.pdf.

76. U.S. EPA guidance states that an assessment unit, otherwise known as an "AU," is a waterbody whose attainment status is reported in a state's Integrated Report. *Id.* at 4. U.S.

EPA recommends states place AUs into "five unique assessment categories." *Id.* at 5. The categories are: (1) Attaining the water quality standard and no use is threatened; (2) Attaining some of the designated uses; no use is threatened; and insufficient or no data and information is available to determine if the remaining uses are attained or threatened; (3) Insufficient or no data and information to determine if any designated use is attained; (4) Impaired or threatened for one or more designated uses but does not require the development of a TMDL; and (5) The water quality standard is not attained. *Id.* at 5-7. The AU is impaired or threatened for one or more designated uses by a pollutant(s), and requires a TMDL. *Id.* at 5-6. U.S. EPA does not include a category for waters that the state has refused to assess for attainment.

77. U.S. EPA "strongly encourages States to evaluate the status of their waters with respect to nutrient pollution" by incorporating waterbodies that fail to meet water quality standards or support designated uses, including waters that either numeric or non-numeric narrative criteria into their §303(d) lists. U.S. EPA, Information Concerning 2014 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions 12 (Sept. 3, 2013), *available at* www.epa.gov/sites/production/files/2015-10/documents/final_2014_memo_document.pdf.

78. Under U.S. EPA guidelines, states are permitted to "determine whether a waterbody is attaining its applicable narrative nutrient . . . criteria . . . by using results of visual assessments." *Id.* at 8. Visual assessments include "field observations of excessive algal growth, macrophyte proliferation, adverse impacts on native vegetation . . . presence or duration of harmful algal blooms, unsightly green slimes or water column cover, and/or objectionable odors." *Id.* "Documentation of fish kills . . . and beach closures, or outbreaks of waterborne illnesses among swimmers" may also be used as non-numeric evidence of violations of narrative

criteria. *Id.*

79. U.S. EPA guidance provides that states sharing waters "should make every effort to coordinate with each other" when preparing individual Integrated Reports, and "collect, assemble, solicit, and assess all readily available data and information relevant to the shared waters." U.S. EPA, Guidance for 2006 Assessment, listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act 42 (July 29, 2005), *available at* www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf.

80. U.S. EPA guidance further states that "Assessments for waters that are shared by neighboring states should be as consistent as possible. This is particularly important for segments listed in Category 5." *Id.*

81. When a state establishes pollutant limits for non-point sources as part of a TMDL, "there must be reasonable assurances that non-point source reduction will in fact be achieved." U.S. EPA, Guidance for Water Quality-Based Decisions: The TMDL Process 7 (Apr. 1991), *available at* https://www.regulations.gov/document?D=EPA-HQ-OW-2007-0784-0001.

Ohio Water Quality Standards

82. As contemplated in the CWA, Ohio "[w]ater quality standards contain two distinct elements: designated uses; and numerical or narrative criteria designed to protect and measure attainment of the uses." OHIO ADMIN. CODE 3745-1-07(A). These designated "beneficial" uses include various levels of support for recreation, aquatic life, and public drinking water supply. OHIO ADMIN. CODE 3745-1-07(B).

83. Pursuant to the Ohio Administrative Code, "Statewide water quality criteria designed to protect beneficial uses are in rule[] O.A.C. 3745-1-04," among others. OHIO ADMIN.

CODE 3745-1-07, Comment. The state must achieve these statewide narrative water quality criteria in order to meet its water quality standards.

84. One such criterion is that "all surface waters of Ohio . . . [t]o every extent practical and possible . . . [be] [f]ree from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae." OHIO ADMIN. CODE 3745-1-04(E).

85. The standard delineated in Ohio Admin. Code 3745-1-04(E) is further implemented by Ohio Admin. Code 3745-1-37, which states that "[t]otal phosphorus as P shall be limited to the extent necessary to prevent nuisance growths of algae, weeds, and slimes that result in a violation of the water quality criteria set forth in paragraph (E) of rule 3745-1-04 of the Administrative Code or, for public water supplies, that result in taste or odor problems."

86. Additionally, in order for any surface water of the state to meet its water quality standards, it must also be "[f]ree from substances entering the waters as a result of human activity in concentrations that are toxic or harmful to human, animal or aquatic life" and "[f]ree from materials entering the waters as a result of human activity producing color, odor or other conditions in such a degree as to create a nuisance" to every extent practical and possible. OHIO ADMIN. CODE 3745-1-04(D).

87. The State of Ohio has assigned several beneficial use designations to Lake Erie that the lake must support in order to meet its water quality standards. Specifically, Lake Erie must be able to provide "exceptional warmwater habitat, superior high quality water, public water supply, agricultural water supply, industrial water supply and bathing waters..." OHIO ADMIN. CODE 3745-1-31(A).

88. Water designated as exceptional warmwater habitat must be "capable of supporting and maintaining an exceptional or unusual community of warmwater aquatic organisms having a species composition, diversity, and functional organization comparable to the seventy-fifth percentile of the identified reference sites on a statewide basis." OHIO ADMIN. CODE 3745-1-7(B)(1)(c).

89. "Bathing waters" are "waters that, during recreation season, are heavily used for swimming." OHIO ADMIN. CODE 3745-1-7(B)(3)(a). Under the Ohio Administrative Code, the recreation season lasts from May first through October thirty-first. OHIO ADMIN. CODE 3745-1-7(B)(3).

90. Ohio also requires that all waters in the Lake Erie basin comply with human health criteria and values that "provide protection of humans from unacceptable exposure to toxicants through consumption of contaminated fish and drinking water and from ingesting water as a result of participation in water-oriented recreational activities." OHIO ADMIN. CODE 3745-1-42.

91. Ohio has promulgated certain numerical standards for algae-related toxins in conjunction with the narrative standards and beneficial use designations described above.

92. Since 2014, Ohio EPA has applied a numeric limit of 1 microgram per liter for microcystin as a criterion for impairment of the public drinking water supply use by algae, based on a "do not drink" threshold adopted in Ohio EPA's 2012 "Public Water System Harmful Algal Bloom Response Strategy." OHIO EPA, PUBLIC WATER SYSTEM HARMFUL ALGAL BLOOM RESPONSE STRATEGY 9 (May 2012), *available at* http://www.epa.ohio.gov/Portals/28/documents/PWS_HAB_Response_Strategy_5-30-12.pdf.

That document also includes a "do not use" limit of 20 micrograms/liter based on Ohio's recreation "No Contact Advisory" thresholds. *Id.*

93. Additionally, Ohio Admin. Code 3745-1-35 sets a dissolved oxygen minimum of at least 5.0 milligrams per liter and a minimum daily average of 6.0 milligrams per liter for "exceptional warmwater habitat" such as Lake Erie under Ohio Admin. Code 3745-1-35.

94. According to Ohio EPA, the dissolved oxygen criterion for state waters "is one of the most important parameters in the protection and management of aquatic ecosystems since all of the higher life forms (*i.e.*, vertebrates, macroinvertebrates [including Unionidae]) are dependent on minimum levels of oxygen not only for survival, but critical life cycle functions such as growth, maintenance, and reproduction." Ohio EPA, Justification and Rationale for Revisions to the Dissolved Oxygen Criteria in the Ohio Water Quality Standards, OEPA Technical Bulletin MAS/1995-12-5 (Jan. 31, 1996), *available at* http://www.epa.ohio.gov/portals/35/documents/ewhdojus.pdf.

**History of Impairment Determinations Regarding Lake Erie**

Ohio's 2014 Impairment Assessment

95. On March 25, 2014, Ohio issued its 2014 Integrated Water Quality Monitoring and Assessment Report ("2014 Integrated Report"), including its biennial impaired waters list pursuant to CWA section 303(d). Ohio EPA, Ohio 2014 Integrated Water Quality Monitoring and Assessment Report (Mar. 25, 2014), *available at* http://www.epa.ohio.gov/dsw/tmdl/OhioIntegratedReport.aspx#123143421-2014. The 2014 Integrated Report addressed the emerging HAB problem in Lake Erie, naming HABs as "arguably the most serious issue in Lake Erie at this time." *Id.* at I-31.

96. The 2014 Integrated Report designated portions of the shoreline of Lake Erie as

impaired, but did not address the impairment status of areas beyond the shoreline, including areas that serve as public drinking water supplies.

97. In the 2014 Integrated Report, Ohio EPA proposed that in future impairment assessments it would change its methodology for Lake Erie to divide existing assessment units into smaller parts and "to expand coverage to all of the Lake Erie waters in Ohio, including shoreline, nearshore and offshore waters." *Id.* at I-32.

98. Ohio EPA identified a number of sources of data that could be used in future integrated reports to determine the impairment status of those assessment units, such as an intensive survey of Lake Erie planned by U.S. EPA in 2014 using its research vessel *Lake Guardian*. *Id.* at I-34.

99. The 2014 Integrated Report also stated that "[e]xpanding Lake Erie assessment from the coastal shallow waters to all of Ohio's nearshore and offshore waters compels Ohio EPA to collect representative samples to characterize each Lake Erie assessment unit (LEAU) and to work with others to ensure that high-level credible data are available." *Id.* at D-35.

100. The 2014 Integrated Report also offered an example of how Ohio EPA would apply such data to determine the impairment status of the assessment units, using numeric targets for phosphorus and chlorophyll a (a measure of the amount of plant life that can be correlated with low oxygen levels as the decomposition of dead plant cells consumes oxygen) contained in a 2011 document developed by U.S. EPA in cooperation with Canada pursuant to the Great Lakes Water Quality Agreement. *Id.* at I-31.

101. U.S. EPA approved the 2014 Integrated Report in a decision document dated August 7, 2015, but deferred any approval decision on Ohio EPA's omission of the assessment of waters beyond the shoreline "due to proposed additions to Ohio's Lake Erie AUs that would

expand coverage to all drinking water intakes in the WLEB [western Lake Erie basin] for the next listing cycle. EPA is only deferring action on assessment determinations related to microcystin impacts to the PDWS [public drinking water sources] use for the open waters of the WLEB." U.S. EPA, DECISION DOCUMENT FOR THE PARTIAL APPROVAL OF OHIO'S SUBMISSION OF THE STATE'S INTEGRATED REPORT WITH RESPECT TO SECTION 303(d) OF THE CLEAN WATER ACT (CATEGORY 5 WATERS) 3 (Aug. 7, 2015) (attached hereto as Exhibit E).

102. U.S. EPA also stated that "EPA will coordinate with Ohio EPA and expects Ohio EPA to fully assess the ten AUs [assessment units] for Lake Erie and to assemble and evaluate all existing and readily available data, including EPA data, for the 2016 integrated report and listing cycle." *Id.* at 15.

103. U.S. EPA also observed that Ohio had not assessed Lake Erie with respect to the narrative criteria prohibiting nuisance growths of algae under Ohio Admin. Code 3745-01-04(E), but noted that Ohio EPA had indicated in a May 28, 2014 letter to U.S. EPA that the state would consider methods for doing so. *Id.* at 16.

104. Finally U.S. EPA specifically requested that "in its future assessment of the new Lake Erie AUs, . . . Ohio consider the impacts of HABs and nuisance algal growth on aquatic life use, in addition to the impacts on recreational use." *Id.*

Ohio's 2016 Impairment Assessment

105. On July 29 2016, Ohio issued a draft of its 2016 Integrated Water Quality Monitoring and Assessment Report, including its impaired waters list. OHIO ENVIRONMENTAL PROTECTION AGENCY, OHIO 2016 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT (DRAFT REPORT) (July 2016) ("Draft 2016 Integrated Report") (attached hereto as Exhibit F).

106. Despite its own earlier recognition of the importance of HABs, Ohio's Draft 2016 Integrated Report failed to assemble and evaluate the relevant data on HABs and related toxins for the open waters of Lake Erie.

107. The Draft 2016 Integrated Report proposed a different assessment methodology for Lake Erie than that outlined in the 2014 Integrated Report. Draft 2016 Integrated Report at D-6.

108. In its Draft 2016 Integrated Report, Ohio EPA proposed designating assessment units for three shoreline areas of the lake: the western shoreline, central shoreline, and the shoreline of the Lake Erie islands. *Id.* at D-2. These assessment units include the waters extending 100 meters from the shore, as well as any nearby public drinking water intakes along with a 500-yard radius around those intakes. *Id.*

109. Ohio EPA proposed designating each of the shoreline assessment units (including the public drinking water intakes) as impaired by phosphorus pollution for aquatic life use and public drinking water supply use. The proposed impairment assessment for the aquatic life use was based on the narrative description of the aquatic community associated with the "exceptional warmwater habitat" use tier, and found "significant impairment of sites due primarily to tributary loadings of nutrients and sediment, exacerbated by continued trophic disruptions caused by," among other things, algal blooms. *Id.* at G-11.

110. The proposed impairment determination for the public drinking water supply applied the microcystin limits adopted in the methodology for the 2014 Integrated Report as a "core indicator" of algae impairment based on "the aesthetic narrative criteria for algae described in OAC rule 3745-1-07." *Id.* at H-4.

111. By contrast, Ohio EPA refused to address the impairment status of the open

waters of Lake Erie with respect to either the aquatic life or public drinking water supply uses, nor did Ohio EPA address whether the open waters were impaired for the "bathing waters" recreational use. *Id.* at D-5 to D-6.

112. Ohio EPA also failed to evaluate the impairment status of the open waters with respect to the statewide standard calling for all waters to be "[f]ree from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae." Ohio Admin. Code 3745-1-04(E).

113. Ohio EPA offered no justification for this decision not to assess the impairment status of the open waters of Lake Erie based on any lack of data.

114. Instead, Ohio EPA stated that it "does not intend to pursue development of the open water assessment units and methods" because a process under Annex 4 of the Great Lakes Water Quality Agreement ("GLWQA") (described more fully below) had failed to provide final, numeric nutrient targets for Lake Erie. Draft 2016 Integrated Report at D-6. Ohio EPA also asserted that "assessment and listing of the open waters under the CWA should be led by U.S. EPA in consultation with the states." *Id.*

115. Plaintiff ELPC submitted comments on this draft report jointly with other environmental organizations. *See* Comment letter from Jessica Dexter, Staff Attorney, ELPC *et al.*, to Ohio EPA (Aug. 29, 2016) (attached hereto as Exhibit G).

116. These comments pointed out that "[e]xisting data supports an impairment designation of the open waters of Lake Erie," particularly based on violations of the narrative water quality standard for nuisance algae. *Id.* at 3. The comments offered examples of such data, including National Aeronautics and Space Administration satellite images of toxic algae blooms in October 2011 and August 2014, data available from U.S. EPA's Great Lakes National

Program Office demonstrating the prevalence of nuisance HABs in the open waters of Lake Erie, and images and testimony from recreationalists and state park employees. *Id.*

117. Accordingly, these comments urged Ohio EPA to fulfill its statutory duty to determine whether "Lake Erie's open waters provide designated uses and meet narrative water quality criteria." *Id.* at 4.

118. The comments highlighted the importance of this impairment designation, and a resulting TMDL, as a regulatory backstop to address phosphorus pollution should action plans to be implemented under the Great Lakes Water Quality Agreement fail to make sufficient progress toward meeting goals for reduction in phosphorus loads to Lake Erie. *Id.* at 4-7.

119. In October 2016, Ohio EPA finalized its 2016 Integrated Report, along with its impaired waters list.

120. Despite the comments of Plaintiffs and other stakeholders in support of an impairment assessment for the open waters of Lake Erie, the 2016 Integrated Report stated that "Ohio does not intend to pursue development of the open water assessment units and methods at this time." 2016 Integrated Report at D-6. Ohio EPA reiterated its explanation that in 2014 it had anticipated that the GLWQA Annex 4 process "would produce nutrient concentration targets or criteria for the open waters" but that instead the "Annex 4 efforts so far have resulted in load reduction targets rather than in-lake nutrient concentration targets or criteria." *Id.*

121. Ohio EPA further reiterated that it "believes that assessment and listing of the open waters under the CWA should be led by U.S. EPA in consultation with the states." *Id.*

122. Therefore, Ohio EPA did not apply the requisite narrative and numeric standards to assess the impairment status of the open waters of Lake Erie, as it had for the shoreline assessment units.

123. There was substantial information available to Ohio EPA at the time it prepared the 2016 Integrated Report that would support an impairment assessment and determination for the open waters of Lake Erie.

124. This information includes, but is not limited to:

1) Water sampling data showing microcystin in Lake Erie at toxic levels;
2) Water sampling data showing dissolved oxygen at levels below Ohio's minimum numeric thresholds;
3) Water sampling data showing chlorophyll a and total phosphorus levels indicative of the presence of harmful algal blooms;
4) Satellite and other images showing the presence of harmful algal blooms; and
5) Scientific literature analyzing water quality data for Lake Erie and describing the presence of harmful algal blooms, as well as impacts to recreation, aquatic life, and drinking water uses caused by those algal blooms.

125. Ohio EPA submitted the 2016 Integrated Report to U.S. EPA on October 20, 2016. On May 19, 2017, U.S. EPA issued an approval of the 2016 Integrated Report. The decision document supporting the approval recognized that Ohio EPA did not assess the open waters of Lake Erie for impairment, but stated that "EPA is deferring to the State's judgment not to assess these waters for the 2016 list." U.S. EPA Approval at 9.

U.S. EPA's Inconsistent Application of the CWA

126. At the same time that U.S. EPA approved Ohio's deficient impaired waters list, it approved the impaired waters list of Michigan, which *does* recognize the problem of HABs in the open waters of Lake Erie.

127. The State of Michigan has a portion of Lake Erie within its boundaries that is

contiguous with Ohio's portion of Lake Erie.

128. On November 10, 2016, Michigan submitted its 2016 integrated report to U.S. EPA, along with its 2016 impaired waters list.

129. Unlike Ohio, Michigan assembled and evaluated relevant data regarding the open waters of Lake Erie.

130. Not surprisingly, it came to a very different conclusion regarding the impairment of the lake. Michigan designated the entire portion of Lake Erie within its boundaries as impaired, based on "persistent significant algal blooms mid-late summer in western Lake Erie" causing "nuisance conditions related to nutrient expression." U.S. EPA, DECISION DOCUMENT FOR THE APPROVAL OF MICHIGAN'S 2016 CLEAN WATER ACT SECTION 303(D) LIST (CATEGORY 5) 22 (Feb. 2, 2017).

131. A large portion of the data and information that influenced Michigan's decision to list the part of Lake Erie within its own jurisdiction was publicly available and applicable to the open waters of Lake Erie within Ohio's boundaries.

132. For example, Michigan based its decision in part on bulletins developed by the National Oceanic and Atmospheric Administration that depict harmful algal blooms covering Lake Erie's Western Basin. *Id.* at 65. Michigan also highlighted the Annex 4 workgroup as an influential factor in its determination that all of Lake Erie within its jurisdiction was impaired. *Id.* Furthermore, Michigan used a publicly-available report on phosphorus pollution by the International Joint Commission when deliberating on Lake Erie's impairment status. *Id.* at 64.

133. Ohio EPA's refusal to consider the open waters of Lake Erie as one of its assessment units means that it never addressed whether any such information included in Michigan's Integrated Report warranted an impairment determination for Ohio's portion of the

open waters of Lake Erie.

134. U.S. EPA approved Michigan's 303(d) list in a decision document dated February 2, 2017, specifically agreeing with the state's "assessment showing that the Michigan portion of Lake Erie is impaired by nutrients." U.S. EPA, DECISION DOCUMENT FOR THE APPROVAL OF MICHIGAN'S 2016 CLEAN WATER ACT SECTION 303(D) LIST (CATEGORY 5) 22 (Feb. 2, 2017).

**The Great Lakes Water Quality Agreement**

135. The GLWQA further highlights the critical importance of HABs in Lake Erie.

136. As noted above, the GLWQA influenced Michigan to determine that the portion of Lake Erie within its jurisdiction was impaired under the CWA.

137. While it highlights the problem of HABs, the GLWQA does not supplant domestic law, nor does it affect the responsibilities of U.S. EPA and Ohio EPA under the CWA. The GLWQA is an Executive Agreement, which is not self-executing and does not have the force of domestic law.

138. The GLWQA is an agreement between the United States and Canada that provides a "framework for binational consultation and cooperative action to restore, protect and enhance the water quality of the Great Lakes to promote the ecological health of the Great Lakes basin." UNITED STATES AND CANADA, GREAT LAKES WATER QUALITY AGREEMENT 1 (Sept. 7, 2012), *available at* https://binational.net//wp-content/uploads/2014/05/1094_Canada-USA-GLWQA-_e.pdf. In 2012, the parties added Annex 4 to the GLWQA with the purpose of addressing phosphorus pollution in the Great Lakes.

139. Annex 4 sets forth a number of objectives, including "minimize the extent of hypoxic [oxygen-deprived] zones in the Waters of the Great Lakes associated with excessive phosphorus loading, with particular emphasis on Lake Erie"; "maintain the levels of algal

biomass below the level constituting a nuisance condition"; and "maintain cyanobacteria biomass at levels that do not produce concentrations of toxins that pose a threat to human or ecosystem health in the Waters of the Great Lakes." *Id.* at 31.

140. To achieve these objectives, Annex 4 commits the parties to developing phosphorus concentration targets for the open waters and nearshore areas of each Great Lake, and sets interim phosphorus concentration targets including a 15 micrograms/liter spring mean for the western basin of Lake Erie and a 10 micrograms/liter spring mean for the central basin of Lake Erie. *Id.* at 32. Annex 4 also sets interim targets for total phosphorus loading into the Great Lakes, and provides that the parties will establish permanent numeric phosphorus concentration and loading targets within three years. *Id.* at 33.

141. In 2015, a subcommittee formed under Annex 4 to recommend permanent phosphorus targets for Lake Erie issued a report recommending numeric targets (in metric tons) for the reduction of phosphorus loading into Lake Erie.

142. However, the subcommittee decided not to recommend phosphorus concentration objectives on the rationale that such concentrations vary considerably over space and time, making them difficult to meaningfully monitor. Great Lakes Water Quality Agreement Nutrients Annex Subcommittee, Recommended Binational Phosphorus Targets to Combat Lake Erie Algal Blooms (June 2015), *available at* http://www.epaarchive.cc/sites/production/files/2015-06/documents/recommended-binational-phosphorus-targets-20150625-8pp.pdf.

143. The subcommittee did indicate that it expected that achieving the recommended phosphorus load reduction targets would result in spring mean phosphorus concentrations of 12 micrograms/liter in the western basin of Lake Erie and 6 micrograms/liter for the central basin of Lake Erie. *Id.*

144. In 2016, the United States and Canada adopted phosphorus load reduction targets for Lake Erie based on the report of the Annex 4 subcommittee. United States and Canada 2012 Progress Report of the Parties 34-35 (2016), *available at* https://binational.net/wp-content/uploads/2016/09/PRP-160927-EN.pdf. They did not adopt phosphorus concentration targets. *Id.*

145. Work is ongoing to develop allocations of the overall phosphorus load reduction targets between the United States and Canada and among various watersheds that discharge to Lake Erie.

146. Pursuant to Annex 4, Ohio and other states that contribute pollution to Lake Erie are supposed to develop "Domestic Action Plans" by April 2018 to meet these final targets. Nutrients (Annex 4) (last visited July 17, 2017), https://binational.net/annexes/a4.

147. The GLWQA does not contain any timeframe for achievement of the Annex 4 targets or penalties for failing to achieve those targets.

148. By its terms, the GLWQA does not affect the responsibilities of either U.S. EPA or Ohio under the CWA.

## GROUNDS FOR RELIEF SOUGHT

149. Plaintiffs re-allege and incorporate by reference all the allegations set forth above.

150. Under its own CWA regulations, U.S. EPA "*shall* approve [a 303(d) list] ... *only if* it meets the requirements of 130.7(b)." 40 C.F.R. § 130.7(d)(2) (emphases added). One of those requirements is that states "assemble and evaluate *all* existing and readily available water quality-related data and information...." 40 C.F.R. § 130.7(b)(5) (emphasis added).

151. In this case, Ohio abdicated its role under the CWA when it refused to assess the open waters of Lake Erie. Ohio EPA both refused to assemble all readily available data regarding

the open waters of Lake Erie, and refused to evaluate the data it did have on hand. Even as the Michigan, Canadian, and U.S. governments have all at least acknowledged the information showing that harmful algal blooms are compromising the recreational, aquatic life, and other uses of the open waters of Lake Erie, Ohio has chosen to ignore it.

152. Under such circumstances, U.S. EPA was required by law to disapprove Ohio EPA's impaired waters list. The fact that U.S. EPA approved the list was therefore arbitrary, capricious, and not in accordance with the law under CWA section 303(d) and 40 C.F.R. § 130.7.

153. Even if Ohio had assembled and evaluated the data (which it didn't), U.S. EPA's approval would still have been arbitrary, capricious, and not in accordance with law. The key substantive requirement under CWA Section 303(d) is that a state "shall identify those water quality-limited segments still requiring TMDLs" because existing pollution controls "are not stringent enough to implement any water quality standards (WQS) applicable to such waters." 40 C.F.R. § 130.7(b)(1). Again, U.S. EPA may approve a 303(d) list *only if* it meets this requirement.

154. In this case, the data and information show that the open waters of Lake Erie are woefully impaired by algal blooms and related pollution.

155. Dangerous algal blooms have been recorded numerous times in recent years, and they threaten hundreds of thousands of people who use and rely on the lake, not to mention the aquatic species that live there.

156. This is why Michigan determined that harmful algal blooms were causing nuisance conditions on the open waters of Lake Erie within its boundaries, and why U.S. EPA approved that decision.

157. The same conditions afflict the open waters of Lake Erie within Ohio's

boundaries, and prevent the attainment of Ohio's similar water quality standards.

158. Thus, when Ohio EPA excluded the contiguous waters of Lake Erie beyond certain artificial boundaries from its impaired waters list, U.S. EPA was required by law to disapprove that list. The fact that U.S. EPA approved the list was therefore arbitrary, capricious, and not in accordance with the law under CWA section 303(d) and 40 C.F.R. § 130.7.

159. Plaintiffs therefore seek relief from U.S. EPA's arbitrary, capricious, and illegal action under 5 U.S.C. § 706(2)(A).

**RELIEF REQUESTED**

WHEREFORE, Plaintiffs respectfully request that the Court grant the following relief:

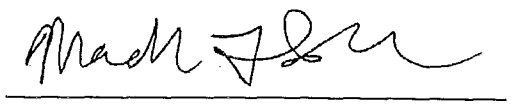
A. A declaration that U.S. EPA violated the CWA and acted in a manner that is arbitrary, capricious, or otherwise not in accordance with law when it unlawfully approved Ohio's deficient list of impaired waters under Section 303(d) of the Clean Water Act;

B. An order compelling U.S. EPA to disapprove of Ohio's list of impaired waters and identify the open waters of Lake Erie as impaired within 30 days of the disapproval, as required by Section 303(d) of the Clean Water Act or, in the alternative, an order vacating and remanding the approval to U.S. EPA for a new determination that complies with the requirements of the Clean Water Act by a date certain;

D. An award to Plaintiffs of attorneys' fees and costs for bringing this action pursuant to 28 U.S.C § 2412; and

E. Such other relief as this Court deems just and proper.

Respectfully submitted,



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