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To: Ohio EPA March 8, 2023

From: Sandy Bihn Lake Erie Waterkeeper

Re. Comments on December 2022 Draft TMDL

Lake Erie Waterkeeper background including TMDL

Lake Erie Waterkeeper advocates for fishable, swimmable waters in the Lake Erie watershed. Lake Erie Waterkeeper has commented on Ohio's 303d program regarding Lake Erie for over ten years. Initially in the 303d list Ohio water assessment, Lake Erie was not included in the 303d list. Fortunately, after comments and attendance at meetings over several two year reporting cycles, Ohio is now assessing Lake Erie water quality under the Clean Water Act in the 303 d list. It was a battle to get Western Lake Erie declared impaired in the 303d list, first portions of the watershed and later the entire Ohio Lake Erie western basin. Most significant in the impairment is the Maumee Lake Erie Watershed which the Great Lakes Water Quality Agreement (GLWQA) calls out for targeted total and dissolved reactive phosphorus reductions.

This TMDL fails to meet the reasonable assurances required in the Clean Water Act impairment, assessment, and what will be the implementation process by having too small a safety zone, failing to address DRP separate for Total Phosphorus and fails to assess Livestock untreated land application of manure and other manure fail to provide reasonable assurances that the Western Lake Erie phosphorus reductions will be achieved. Lake Erie Waterkeeper is committed to making sure there is a Western Lake Erie Clean Water Act TMDL process that will achieve the targeted total and dissolved phosphorus reduction goals in the GLWQA Annex 4 targeted for 2025.

There seems to be no urgency to getting the Lake Erie harmful algae reduced but rather let the waters of Lake Erie continue to be green with toxins and government will pay sources to reduce and for manure no monitoring of runoff from the fields – it is supposed to be zero discharge which is false. And the fall of 2022 had the longest lasting algae with a new strain of toxin lasting into early November – a growing concern.

# Maumee Watershed Nutrient Draft Total Maximum Daily Load Sandy Bihn Lake Erie Waterkeeper Comments

Ohio EPA Technical Report AMS/2020-MWN-5 Division of Surface Water Assessment and Modeling Section Draft December 2022

## 1. Public Involvement Comment

The TMDL public meetings were simply stated awful. The last one both in person and virtual were particularly bad. At all public meetings/hearings I have attended there is always a brief overview of what is proposed and a summary of the dates etc. of the process. The February 23 meetings put up a slide and said speak. These meetings were a necessary, apparently unwanted part of the process, with the messaged underlying goals of more controls and less information provided the better. Not the message government should be sending to its constituents.

The virtual meetings became less and less interactive. While initial meetings showed participants, latter ones did not. Initial meetings allowed that and questions latter ones did not. Initial meetings allowed the commenter to make the comments rather than typing them in which is what was required at the end. Ohio needs to adopt policies for user friendly virtual meeting/public hearings in the future. I could not get the link to work on my computer, iphone or cell phone to provide the comments I had at

the February 23 meeting. So, I emailed and others who were attending the meeting helped to get the emailed comments into the record. I know there were others who would have commented had they been able to get the link to work. In summary, the public involvement and input process was one of the worst ever. So bad to not get input because of the system failures and process.

## 2. TMDL Draft ORC 6111.52

(A)(1) The director of environmental protection shall provide notice of and opportunity for input from potentially affected dischargers, county soil and water conservation districts, and other stakeholders during the development of a TMDL after March 24, 2015, at each of the following stages of development of a TMDL and plans and actions necessary for TMDL implementation:

## Comment

Wastewater plants were notified about the 'General Permit' etc. were CAFO's notified? If not then OEPA is saying they are not potential dischargers when they are??

3. Phosphorus reduction targets are based on the Great Lakes Water Quality Agreement's Annex 4 load reduction recommendations to achieve desired Lake Erie ecosystem objectives regarding impacts from HABs. This TMDL's allocations are enumerated for the total phosphorus parameter. The Annex 4 recommendations also specifically call for the dissolved reactive portion of total phosphorus to be reduced. Dissolved reactive phosphorus is part of the total phosphorus load. To address this, this portion of the total phosphorus is specifically considered throughout the report.

## Comment

The math does not work. You either have to increase total phosphorus reduction to get the needed 40% DRP reductions or you have to specifically target DRP. Not doing this means the TMDL recommendations will fail to get the needed 40% DRP reductions to reduce Lake Erie harmful algae.

4. The TMDL report contains a comprehensive review of the sources of phosphorus in both the particulate and dissolved forms. This includes all point and nonpoint sources. Ohio EPA regulates point sources, and contributions are discussed relative to the agency's permitting programs.

## Comment

No the TMDL does not have a comprehensive view of the sources of TP and DRP. The TMDL discusses 76 permitted CAFO's but does not list them as it does wastewater plants. when reports from EWG show that 80-90% of the CAFO's are not permitted. This proposed TMDL assumes that estimates of phosphorus applied and estimates of phosphorus in the manure and estimates of the amount of acreage the manure is applied and estimates of amount of farmland receiving phosphorus can determine percentage of total phosphorus (and maybe dissolved phosphors) runoff. There is evidence from water monitoring stations that as CAFO's increase(more manure to fields) DRP increases from each CAFO added(Raff Myers). This TMDL does not consider that research and evidence. Therefore the source estimates for manure lack credibility.

5. The TMDL employs a mass balance method to allocate phosphorus loads to different sources. This data-driven approach leverages the wealth of monitoring from the National Center for Water Quality Research at Heidelberg University's long-term monitoring station in Waterville, Ohio. This reduces calculation uncertainty because it is directly tied to this

robust measurement of load. ..... TMDLs are planning tools that are used to better organize and affect pollutant reductions from nonpoint sources. TMDLs are not policy tools that contemplate the impact of changing regulations on managing pollutant loads. This TMDL's implementation plan shows how nonpoint source programs will be used to meet its goals. The nonpoint source implementation efforts include managing agricultural stormwater loads. Manure application that follows a manure management plan, including manure from confined animal feeding operations (CAFOs) that inadvertently enters streams due to precipitation, is considered agricultural stormwater. This source is incorporated within the TMDL's nonpoint source allocations.

## Comment

Explain how the above takes into account large numbers of tank trucks spreading liquid cow manure in a field tiled fields where no cover crops are planted in Wood County in the fall of 2022 along the banks of the Portage River followed by rain and snow melt in early 2022 causing the banks of the river to flow into the area where the manure is applied? Pictures attached.

And explain how manure is factored into this mass balance when there is a CAFO in Indiana applying its manure to fields in Ohio and Michigan. Records in Indiana show that an 8000 cow facility planned on taking the manure to Edon, Ohio and Temerance, Michigan, letters attached.

6. While CAFOs are defined as point sources, unless they are designed to discharge non-agricultural stormwater, they are not compelled to seek NPDES permit coverage. No CAFOs in the Ohio portion of the Maumee watershed discharge wastes that require NPDES permit coverage. No CAFOs in the Maumee watershed have NPDES permits allowing discharges of treated wastewater. Therefore, the TMDL provides no CAFO point source allocations. Because TMDLs do not institute policy change, existing requirements regarding the management of CAFOs continue.

## Comment

The above is an outrageous statement with no evidence that the statement is true. Just because the CAFO says that there is zero discharge does not make it true. There is growing evidence and research that liquid manure goes to field tiles and into streams(Petition to USEPA attached). Why not say that here and say it is a problem that needs to be addressed rather than making these carta blanch nothing gets offsite statements.

7. Because this TMDL includes pollutant allocations to both point and nonpoint sources, it must also contain a consideration of reasonable assurances. This report's reasonable assurances demonstrate that the nonpoint source reductions to meet water quality standards are feasible. It explains that allocations in the TMDL are not based on excessive projections of nonpoint source pollutant reductions. Reasonable assurances are provided by detailing the commitments, planned and ongoing activities, and programmatic support to realize phosphorus reductions. These assurances are reinforced with accountability and oversight from Ohio EPA and federal and binational efforts.

## Comment

The above statement is simply false. There are no reasonable assurances in this TMDL to assure that if followed nonpoint sources will be reduce TP and DRP by 40%.

8. HABs remerged in the early 2000s, with a particularly large bloom in 2003 and persistent blooms ever since (Annex 4, 2015). In 2014 a HAB caused the city of Toledo to shut down its water supply due to microcystin toxin (from the HAB) in the treated water from the Collins Road water treatment facility. Some of the largest blooms occurred in 2015 and 2017, which were very wet years. Conversely, smaller blooms occurred in 2004 and 2012, which were very dry years. Research shows that the proportion of total phosphorus load that is in the dissolved form has significantly increased since the late 1990s (Rowland et al., 2021); this increase has been related to the modern proliferation of HABs. Dissolved reactive phosphorus (DRP) is the parameter most commonly used to monitor this dissolved form of phosphorus.

## Comment

The blooms in Western Lake Erie began in the mid to late 1990's. I live on the shores of Lake Erie Maumee Bay and personally experienced the blooms in the late 1990's. The blooms resulted in us putting in a swimming pool in 1999 and selling our wave runners because the algae clogged the intakes.

This report does not tie the increase in DRP and algae to the CAFO's that came to the Western Lake Erie basin in the late 1990's. When the cows and liquid manure came, the algae came.

9. In addition to the extensive surface drainage network in the Maumee watershed, extensive subsurface tile drainage is also present. Sugg (2007) estimated that subsurface drains underlie more than 50–80 percent of agricultural lands in the Maumee watershed. Though artificial drainage has increased agricultural productivity, it also affects the ecology and hydrology of streams. Artificial drainage has been shown to impact the flow regime by intensifying different flow events. Sloan et al. (2017) saw an increase in low flows and a decrease in intermediate flows in streams impacted by subsurface drainage systems.

## Comment

This should also discuss the Black Swamp and the thousands of miles of ditches in the watershed. The Maumee/Western Lake Erie watershed is the most ditched in the US. This section should also include a statement on the number, said to be in the thousands, of abandoned oil and gas wells in the watershed that are not properly capped or closed.

10. Average annual temperature in the Maumee watershed is 11.3 degrees Celsius (°C), or 52.5 degrees Fahrenheit (°F), with February (-6 °C, 21 °F) and July (23.6 °C, 74.6 °F) as the coldest and warmest months, respectively (NOAA, 2021). The annual rainfall for 2021 was 1,062 millimeters (mm) (NOAA, 2021). A 2012–2015 study found the average annual rainfall in the Maumee watershed ranged from 833 mm to 1,135 mm (Pease et al., 2018).

## Comment

There is more recent data on rainfall and temperature. And the amount of rain is increasing. The fields were so wet in the spring of 2019 that about 50% of the crops were unable to be planted. This resulted in about a 50% reduction in commercial phosphorus applied to the fields. Yet, 2019 had a very large bloom. If 50% of commercial P did not result in a small bloom, then something else was the source. Manure lagoons overflowed and the manure still had to be applied. But ODA decided then that the source was not manure but legacy phosphorus.

11. TMDLs are required when a water body fails to meet water quality standards. Every state must adopt water quality standards to protect, maintain, and improve the quality of the nation's surface waters. Water quality standards represent a level of water quality that will support the Clean Water Act goal of swimmable and fishable waters.

Ohio's water quality standards, set forth in Chapter 3745-1 of the Ohio Administrative Code (OAC), include three major components: beneficial use designations, numeric and narrative criteria, and antidegradation provisions. Where numeric criteria have not been developed, the State can develop project-specific targets. Beneficial use designations describe the existing or potential uses of a water body, such as public water supply; protection and propagation of aquatic life; and recreation in and on the water. Ohio EPA assigns beneficial use designations to each water body in the state. Use designations are defined in paragraph (B) of rule 3745-1-07 of the OAC and are assigned in rules 3745-1-08 to 3745-1-32. Attainment of uses is based on specific numeric and narrative criteria. Numeric criteria are estimations of the chemical concentrations, degree of aquatic life toxicity, and physical conditions allowable in a water body without adversely impacting its beneficial uses. Narrative criteria, located in rule 3745-1-04 of the OAC, describe general water quality goals that apply to all surface waters. These criteria state that all waters shall be free from sludge, floating debris, oil, and scum; color and odor-producing materials; substances that are harmful to human, animal or aquatic life; and nutrients in concentrations that create nuisance growths of aquatic weeds and algae.

## Comment

I have attended Ohio EPA 303 d list meeting for several decades. The criteria for water quality determination is changed regularly and makes it difficult if not impossible to track a particular watershed over time. I attended Maumee AOC meetings in the 1990's and recall asking about TMDL's and algae. I was told TMDL's were too expensive and would be too complicated for the Maumee River. Later when I asked about nutrients I was told that nutrients are not a category for impairment consideration even though the river was getting greener and greener. I was told the Maumee did not have recreational use – it does. People take personal watercraft in it. There was a raw sewage problem in the Maumee River which eventually got a lot better when there was containment for the sewage overflows. We got rid of a lot of the sewage only to get more algae. The reasons for the algae were never part of the water quality/impairment assessment. I also tried to find out how Maumee Bay was being assessed. Originally Maumee Bay was in the AOC but somehow got taken out of the AOC and was later put back in because there was no assessment for attainment. Again, I was told that Maumee Bay could not be considered for nutrient impairment because it was not a consideration in the aquatic life etc. categories. I note that the table below does not include the Maumee River watershed where algae is not considered an impairment. Supposedly the Lake Erie Western Shoreline does include Maumee Bay.

Table 1. Summary of impairments addressed by the Maumee Watershed Nutrient TMDL.

Lake Erie assessment unit	Narrative description	Causes of impairment (Beneficial use in parentheses)
041202000201	Lake Erie Western Shoreline (≤3 meters depth)	Algae (Recreation use) Algae: Cyanotoxins (Public drinking water use) Nutrients (Aquatic life use)
041202000301	Lake Erie Western Basin Open Water (>3 meters depth)	Algae (Recreation use) Algae: Cyanotoxins (Public drinking water use)
041202000101	Lake Erie Islands Shoreline (≤3 meters depth)	Algae (Recreation use) Algae: Cyanotoxins (Public drinking water use) Nutrients (Aquatic life use)

12. The 2020 cyanobacterial bloom in the Western Lake Erie Basin experienced three 10-day frames exceeding 30 percent coverage of greater than 20,000 cells/mL during the May-October period. That year's bloom started in early July and ended in early October. The 2021 bloom had four 10-day frames exceeding the benchmark. The 2021 bloom started later in July but persisted until late October. The greatest aerial extent of the two new years presented in this report, with 76 percent of the assessment unit covered, occurred during two consecutive 10-day windows centered on September 3, 2021, and September 13, 2021. Based on the current results, this assessment unit could not attain the recreation use until after the 2026 bloom season. For that to happen, there must be fewer than three 10-day frames exceeding the 30 percent area coverage of algae at the outlined density each year from 2022–2026.

## Comment

This is clear evidence that the algal blooms are not decreasing and that the BMP 's etc. are not reducing the blooms.

13. The public drinking water supply use is applied to surface waters from which water is sourced to be treated for public use as drinking water. Assessment methodology for algal toxins in drinking water sources is described in detail in the 2022 Integrated Report.

## Comment

This report fails to assess the actual sources of the drinking water impairments. Threats to Drinking Water from algal toxins could be addressed under the Safe Drinking Water Act but Ohio EPA has determined that assessment for the Toledo intake algae sources is limited to Lucas County and that no upstream sources outside Lucas County could be considered under the Safe Drinking Water Act. Using the Safe Drinking Water Act for source reduction of the drinking water impairment could lead to real source reduction and is recommended for inclusion in this TMDL.

14. The Annex 4 targets document outlines that the phosphorus load from the Maumee watershed "during the spring period of 1 March to 31 July each year was the best predictor of cyanobacteria bloom severity...". It explains total phosphorus and DRP load targets for the Maumee River to the Waterville, Ohio, monitoring point of 860 and 186 metric tons (MT), respectively, for this spring loading period. As noted above, these target loads are expected to result in acceptable bloom sizes. These loading targets were proposed to be met in nine out of 10 years.

## Comment

It is doubtful that this benchmark for addressing drinking water impairments will work. The 2014 algal bloom was not that big. It was the wind that collected and blew the algae over the intake and then the wind stopped for three days. This criteria for drinking water should be revisited to address the algae in 2014 etc.

15. This Maumee Watershed Nutrient TMDL is focused on addressing the three impaired Lake Erie assessment units outlined above in this document. Therefore, this project is focused on the phosphorus load exclusively from the Maumee watershed and does not include other priority tributaries in Ohio. The map in Figure 5 shows the assessment units and affected watershed. Table 5 lists the eight-digit hydrologic unit code (HUC), or HUC-8, subwatersheds that are included in this TMDL's allocations.

#### Comment:

The Auglaize and Blanchard Rivers need to be included in this section along with the lower Maumee. Delphos is having a nitrate drinking water issue that should have a TMDL but Ohio EPA has stalled doing it since 2014 where major sources of the nitrate impairment is manure. And the Bowling Green water reservoir had exceedingly high levels of microcystin some years ago that resulted in algal toxin treatment. The lower Maumee and the Auglaize/Blanchard should be included in this TMD.

16. Table 6 summarizes the targets that will be used for TMDL development. Only total phosphorus will be used to develop allocations; additional discussion on this TMDL management decision follows in Section 3.5.1. Allocations in the TMDL will be determined for the complete Maumee watershed using the 914.4 MT value. The target at the Waterville station will continue to be used as the primary tracking tool of TMDL implementation nutrient reduction success.

#### Comment

Using modeling etc. to create this allocation to reduce the needed amounts in other areas of the basin is simply wrong. The reality is that the seiche effect, not discussed can put nutrients in the Maumee from Maumee Bay, the Detroit River, Raisin etc. It would be better to set reductions for the Auglaize/Blanchard than this questionable almost impossible to figure out convoluted mish mash reduction that is nearly impossible to figure out and attain.

## 17. Aquatic Life targets

## Comment

Aquatic life targets should use the aquatic food chain numbers and include aquatic organ reductions of toxins as the measurement. Using recreation targets is wrong.

## 18. Total phosphorus as the modeled parameter

Only total phosphorus will be used to develop allocations. The science clearly shows that the DRP portion of total phosphorus needs to be reduced to meet the designated uses this TMDL addresses. However, using total phosphorus for TMDL allocations is necessary, given the constraints required of a TMDL. Part of this necessity is that it is more feasible to account for total phosphorus as it moves through the watershed compared to DRP. Ohio EPA considered options to complete a DRP TMDL and found limitations for determining allocations in all cases. Accounting for the nonconservative nature of DRP when modeling a watershed the size of the Maumee requires modeling of intricate kinetics. Many water quality models can represent these kinetics through complex equations that use many reaction rates. There is a wide range of acceptable values for these rates. Since several rates can work together to develop a satisfactory calibrated model, multiple ways of arriving at the same solution exist (Yuan and Koropeckyj-Cox, 2022). Given this and the fact that a TMDL must have finite allocations, DRP TMDL allocations would result in an unacceptable amount of uncertainty that could not be controlled. This influenced Ohio EPA's decision to use the approach of allocating only to total phosphorus. Using high-quality monitoring data in modeling the total phosphorus minimizes error. Further, total phosphorus and DRP are related, as DRP represents a portion of total phosphorus. Various biological and chemical processes dynamically affect that proportion as DRP moves from its sources to Lake Erie. Those shifting processes result in DRP load reductions at

## times. At other times, particulate phosphorus releases DRP— adding to its load.

## Comment

This is a fatal flaw in this TMDL. What is not considered here is the fact that Maumee Bay and the far western basing of Lake Erie is very shallow and turbulent – almost always in constant motion. Therefore there is rarely a dead zone in the western basin. The waters of the western basin/Maumee Bay turn over every 3-5 days. It takes a dead zone to release the phosphorus in the sediments which is what happens in the Central basin. Because of this, this TMDL must use DRP to get the reductions needed because it is truly DRP creating the blooms. For more information on phosphorus release in sediments see Maumee Bay work by University of Toledo Professor Tom Bridgeman.

19. Robust tributary and edge-of-field water quality monitoring in the region supports overall nutrient-reduction efforts by providing detailed information from loading sources and from loadings near the watershed outlet at the Waterville gaging station. This monitoring effort includes over 25 tributary monitoring stations throughout the Maumee watershed, most of which have a period of record of at least 10 years. With such abundant high-quality data available, the need for a process-based watershed model to quantify watershed loading is minimal. Mass balance methods are sufficiently effective at characterizing total phosphorus loading patterns and identifying needed source reductions.

## Comment

Edge of field studies are not done where soil phosphorus levels are high and few are done where any manure is applied which makes the assumptions for the validity of mass balance incorrect. Also there is no information on edge of field studies where liquid vs. 'solid' manure are applied.

20. Source assessment is used in a TMDL project to identify and characterize pollutant sources by type, magnitude, and location (U.S. EPA, 1999a). This TMDL's source assessment leverages an extensive amount of water quality observations and studies that have taken place in the Maumee watershed. It is intended to be a very robust examination that provides a strong basis for pollutant-reduction implementation recommendations.

## Comment

The streams etc. are not the source of the total or dissolved phosphorus. The waters transport the phosphorus.

21. Organic fertilizers consist of manure, composts, and biosolids. The use of manure is by far the leading organic fertilizer in the Maumee watershed. Therefore, manure is the focus of organic fertilizer use in this source assessment. The rate of phosphorus fertilizer applied to fields in the Maumee watershed is generally determined by the Tri- State Recommendations (Culman et al., 2020. The critical level for phosphorus is 20 parts per million (ppm) with the maintenance limit of 40 ppm (30 ppm and 50 ppm, respectively, if wheat is in the rotation).

## Comment

This fails to discuss the differences between liquid and solid manure phosphorus.

## 22. Oversight of manure application and commercial fertilizer is provided by the Ohio Department of Agriculture (ODA).

## Comment

This section looks like fill in to look like CAFO's and manure are addressed in this TMDL when the assessment etc. is woefully inadequate. There should be a listing of the permitted CAFO's in western Lake Erie along with the number if animals, amount of manure, acres applied, and estimated amount of phosphorus and nitrogen. This TMDL gives lots of information on wastewater treatment plants and home sewage but fails to give any analysis of CAFO's and manure.

Regurgitating ODA CAFO rules fails to disclose so much. When there were fish kills in the Maumee watershed from manure runoff, no fines were issued by ODA or OEPA. There was no investigation of water quality impacts etc. There were some minor fines for fish kills. Enforcement for CAFO's/manure is by complaint and when there are inspections. This report should provide a list of enforcement actions for CAFO's and manure over the last five years. And this report should include the fact that off site land application of untreated manure has no reporting etc. (this is the bulk of how manure is managed) And this TMDL fails to discuss the huge number of unpermitted CAFO's/manure and the impacts along with determining runoff from liquid vs/solid manure.

23. Legacy phosphorus. The voluntary implementation of agricultural soil conservation has produced great environmental successes over the years. Tri-state fertilizer standards have been updated recently. Practices exist to reduce legacy phosphorus, such as targeted soil phosphorus draw-down and edge-of-field phosphorus filters. These actions should be considered for TMDL implementation recommendations addressing both agricultural fertilizer (often thought of as "live") and soil ("legacy") sources of phosphorus export.

## Comment

There is much discussion on legacy phosphorus. But legacy phosphorus has always existed and yet Lake Erie recovered and had little algae. This TMDL does not look at what changed in the late 1990's that triggered to massive increases in algae. Yes it is getting warmer, yes we are getting more rain but these have been occurring gradually over time. There was little algae in Lake Erie until the late 1990's when CAFO's and liquid manure came. This TMDL should be looking at liquid and solid CAFO manure and determining runoff and contribution from data not modeling and assumptions. The major change in the Western Lake Erie watershed in the last 25 years is CAFO's and manure. Yet government wants to assess anything but the largest nutrient increase which is continuing – manure, especially liquid in a watershed with the most field tiles and ditches anywhere in the US. And now the watershed is getting JBS cattle which is moving from Texas and Kansas(according to them) to our watershed. We need to track and assess the existing manure impacts along with the growing manure impact. Does Lake Erie have to 'catch fire' have people/animals die or get sick before CAFO's and manure are addressed?

24. The Clean Water Act defines CAFOs as point sources. However, this TMDL provides no wasteload allocations to CAFO livestock operations. There are currently no CAFOs in the watershed that discharge or propose to discharge non-ag stormwater under an NPDES permit. CAFOs do contribute to the nonpoint source phosphorus load via agricultural stormwater from the land application of manure. This load is considered part of the load allocation for nonpoint sources discussed in Section 5.3.6.

## Comment

OEPA simply cannot verify that there are no CAFO's that discharge or propose to discharge. This is absurd.

## 25. BMP's DAP's etc.

## Comment

All the reports and policies and money spent to manage phosphorus once in the system will never get the needed DRP source reductions for Lake Erie. No one told wastewater plants to install wetlands to capture the sewage moving to the river etc. Why is source reduction from commercial fertilizer and manure – the main drivers not the focus of this TMDL? Lake Erie algae was pretty much gone until the CAFO's/manure came. Treat the manure as they do in China for ecoli, limit the number of animals/manure in a watershed as they do in China. Why is Smithfield and now JBS having so many operations here? Because manure is cheap to land apply here. What does China care of we degrade Lake Erie?? It is about 50% cheaper to raise a hog in the US when compared to China. Why? Cheaper beans and corn and lax environmental regulations. Lake Erie is the manure sacrificial lamb – it needs to stop.