

Appendix E
Response to Comments

Re: Response to Public Comments - Comment Period ending March 27, 2004
Wabash River Watershed Total Maximum Daily Load (TMDL), Ohio

Dear Sir/Madam:

Thank you for your recent comments regarding the Draft Wabash River Total Maximum Daily Load (TMDL) document dated February 2004. The U.S. EPA has responded to your comments below. We first address the comments related to designated use and then address all remaining comments.

In 1999, Ohio EPA completed a thorough examination of habitat and biological and chemical conditions in the Wabash River watershed. Ohio EPA found that Wabash River watershed's Warmwater Habitat use designation was still appropriate. Consequently, we used the nutrient and sediment targets associated with the Warmwater Habitat use designation in this TMDL.¹

Comments from: Ohio Department of Agriculture

Comment: Page 23, the first sentence is a repeat of the last sentence at the bottom of page 22.

Response: This typo does not exist in the PDF version of the report that was made available on U. S. EPA's Web page.

Comment: Page 23, the footnote "plans" should be "plants"

Response: Comment addressed.

¹The State expects to propose Water Quality Standards (WQS) rules changes based on the 1999 work study later this year. Their rule-making process includes an opportunity for public comment. The use designations and the 1999 study results for the areas upstream of the state line provide useful information that should be taken into consideration when recommending implementation strategies to restore the watershed.

Comment: Page 25, the footnote at the bottom of table 7-1 should be "from " instead of "form"

Response: Comment addressed.

Comment: I counted 20 additional communities on the map on page 4, Figure 2-1, but failed to see how they were included in the impact or TMDL plan to improve the Wabash.

Response: We included loads from these communities, in terms of wastewater disposal and stormwater runoff, in the development of the TMDL. Although loads from these communities are not as significant as loads from other sources, efforts should still be focused on improving treatment of stormwater and wastewater to help meet water quality standards. It is our understanding that the Watershed Coordinator, Lance Schwarzkopf of the Wabash Watershed Alliance, has already explored several options for addressing urban issues.

Comment: The Wabash in Ohio is probably one of the most heavily agricultural and intensively drained for crop production in the state. Many of the tributaries and even the main stem are under Petition Drainage Law projects requiring maintenance. Warm Water Habitat designation is not appropriate or achievable. If any watershed/stream in the state deserves a Modified Warm Water Designation it would be the Wabash River Watershed.

Response: OEPA conducted a thorough review of habitat and biological conditions in the Wabash River watershed several years ago and determined that Warm Water Habitat is the appropriate use designation. The TMDL was therefore developed based on the premise that the Warm Water Habitat use designation must be met. Any potential use designation change is not a part of this study and would be an issue on which OEPA would comment.

Comment: Table 3-3 on page 8, the values for total phosphorus targets on MWH designations do not appear to be correct in following the comparable levels for WWH and EWH.

Response: We confirmed that these values are the ones published in Table 2 of:

OEPA (Ohio Environmental Protection Agency). 1999. Association Between Nutrients, Habitat and the Aquatic Biota in Ohio Rivers and Streams. Technical Bulletin MAS/1999 1-1. Ohio Environmental Protection Agency, Division of Surface Water, Columbus, OH.

Comment: The use of data with a gap of over 20 years is a very questionable scientific practice.

Response: We used the older data in Section 3 of the report to provide background information on the Wabash River watershed because there exists limited data on the watershed. The seasonal patterns in the older and recent data are similar and so it was considered appropriate to display them together. We only used the recent data in making impairment determinations and developing the TMDL.

Comment: Page 17, 4.2 Critical Conditions indicates conditions for nutrient impairments occurring during late summer related to desorption of phosphorus from sediments and high temperatures and low flows. Studies done by Heidelberg Water Quality lab indicate that loadings from low flow sources such as Wastewater plants and discharging septic systems contribute more of the impairment than sediment.

Response: The effects of constant sources of phosphorus such as Wastewater Treatment Plants (WWTPs) and discharging septic systems are certainly more pronounced during summer low flow conditions. This is especially true in AU -030, which contains both the Celina and Coldwater wastewater treatment plants.

Comment: We have an updated list of the permitted large CAFO facilities that we will provide you in another attachment to utilize in Appendix A.

Response: Appendix A can be replaced if the updated list is received prior to the TMDL report being finalized.

Comments from: Ohio Farm Bureau

Comment: It is disappointing to see that the Wabash River TMDL document lacks any discussion regarding model inputs and the assumptions made by the contract modeler Tetra Tech. It is extremely unprofessional to assume that the public is not interested in reviewing and providing comments on this information. How does U.S. EPA expect the public to conduct a comprehensive document review when the most important and critical information is not provided?

Response: In Appendix C of the TMDL report, we provide a detailed discussion of the SWAT modeling that was conducted for the Wabash River watershed. We discussed model inputs and assumptions regarding land use, curve numbers, the Universal Soil Loss Equation (USLE) factors, climate data, reservoir characteristics, manure application, tillage practices, and calibration parameters. The model is at <http://www3.baylor.edu/cagsr/swat/>. A CD with the Wabash data used for this model is also enclosed with this response for those who requested the data.

Comment: The Wabash River TMDL states that the 2002 Section 303(d) Report identifies the cause of the aquatic life impairment in the Wabash River basin as habitat alteration. It goes on to state that the measure of attainment of water quality standards will be based on numeric biocriteria because Ohio does not have numeric nutrient and sediment criteria as part of the formal water quality standards. Why has this report focused on nutrients and suspended sediment when habitat has been identified as the cause of impairment?

Response: As specified in the Clean Water Act and consistent with U.S. EPA guidance and regulations, TMDLs are to be developed for pollutants that have loads associated with them such as, but not limited to, sediments, nutrients, and metals. Although habitat alterations are

recognized as contributing to the impairment, one cannot truly develop a habitat TMDL. Consequently, we developed TMDLs for the pollutants contributing to the impairments (i.e., sediment and nutrients) and focused on, among other things, improving habitat conditions in the implementation strategy. We recognize that there is a link between pollutant and habitat conditions, such as assimilative capacity of an altered stream diminishing its ability to utilize some of the nutrient load. But again, for the purposes of this TMDL, we are concentrating on load-based impairments.

Comment: A review of the field data from the 1999 detailed Ohio EPA assessment of the Wabash River basin reveals that only 2 out of 62 habitat assessment scores (QHEI) are at or above 60, the value accepted as being conducive to supporting warmwater faunas. In fact, 48 of the 62 QHEI scores are below 45, the value accepted as an indication that the stream will not be able to support a warmwater fauna. These data raise serious questions regarding the likelihood that the aquatic life will be restored to meet a warmwater aquatic life biological target. Why hasn't a more appropriate aquatic life use designation, such as modified warmwater habitat (MWH), been assigned and used as the target for the TMDL?

Response: We recognize that habitat conditions in the Wabash River watershed are poor. However, we developed the TMDL based on the premise that the Warm Water Habitat use designation must be met. OEPA conducted a thorough review of habitat and biological conditions in the Wabash River watershed several years ago and determined that Warm Water Habitat is the appropriate use designation. The TMDL was therefore developed based on the premise that the Warm Water Habitat use designation must be met. Any potential use designation change is not a part of this study and would be an issue on which OEPA would comment.

Comment: The QHEI is a multimetric tool used to evaluate the quality of a stream's habitat. Six variables evaluating both the stream and the riparian zone are scored and combined to obtain a numeric value for the overall health of the stream. Investigation of the scores for each of the individual metrics can be a useful tool to help in the identification of the principal factors limiting habitat quality. The analysis would also lead to the identification of the types of possible remediation actions that could take place. For example, if the riparian/erosion metrics score low, then the proposed remediation actions should focus on stream bank erosion control and riparian buffer establishment. Has such an analysis been conducted for the streams in the Wabash River basin? If so, how have the results of such an analysis been incorporated into the development of the TMDL report for the Wabash River?

Response: We did not conduct a detailed analysis of the QHEI scores for the Wabash River watershed as part of this project because it was not required or necessary for the TMDL process.

Comment: The stated goal of the Wabash River TMDL is the attainment of appropriate aquatic life uses. For the majority of the sampled locations in the basin, stream habitat quality (QHEI scores of less than 60) is the most limiting factor to reaching this goal. The established target

values for nutrients are based on protection of warmwater habitat (WWH) biological criteria. If the stream has a low restorability potential for WWH, a more appropriate aquatic life use designation, such as modified warmwater habitat (MWH), must be assigned. The target values for nutrients in the TMDL calculations need to be adjusted accordingly. How does the assignment of a more appropriate aquatic life habitat designated use factor into the TMDL development process?

Response: We developed the TMDL based on the premise that the Warm Water Habitat use designation must be met. If the MWH use designation is to apply, we would use alternative total phosphorus and nitrate+nitrite targets to determine the necessary load reductions. OEPA conducted a thorough review of habitat and biological conditions in the Wabash River watershed several years ago and determined that Warm Water Habitat is the appropriate use designation. The TMDL was therefore developed based on the premise that the Warm Water Habitat use designation must be met. Any potential use designation change is not a part of this study and would be an issue on which OEPA would comment.

Comment: The TMDL document is silent when it comes to the identification and quantification of existing nutrient sources and loads. How were the nitrogen and phosphorus loads partitioned among the various sources? How were home sewage treatment and disposal systems accounted for? What is the contribution from commercial fertilizer and livestock? How were the model inputs distributed across the 54 subbasins?

Response: We included all of the significant sources in the modeling. These sources included, but were not limited to, failing/illicitly connected: onsite sewage disposal systems, wastewater treatment plants, livestock, manure application, commercial fertilizer application, and stormwater runoff. We made estimates of loads from onsite sewage systems based on the number of systems, literature values for the characteristics of wastewater, and best professional judgment regarding the percentage of failing/illicit systems. The estimated load from these systems is not a very large proportion of the total observed load in the watershed, even when conservatively estimating the percentage of failing systems. The model inputs were distributed across the 54 subbasins based on the best available data regarding the location of each source. For example, we used land use data to estimate the location of agriculture, and Census data to estimate the number of onsite systems in each subbasin. We knew where the wastewater treatment plants were located.

Comment: Total phosphorus and nitrate+nitrite data at State Line Road over the period May 22, 1974 to September 2, 1999 are presented in Figures 3-1 and 3-3 on pages 9 and 11 of the report, respectively. The monitored concentrations of both constituents decrease significantly (4 to 10 fold) over the time period. In fact, there is a 20-year gap in available water chemistry over the time period. Given the disparity between the two data sets from the 1970s and 1990s, how can you justify combining the two and generating monthly summary statistics?

Response: We used the older data in Section 3 of the report to provide background information on the Wabash River watershed as there exists limited recent data on the watershed. The seasonal patterns in the older and recent data are similar and so it was considered appropriate

to display them together. We only used the recent data in making impairment determinations and developing the TMDL.

Comment: The TMDL document states that there are 39 large concentrated animal feeding operations (CAFOs) in the Wabash River watershed. It goes on to state that by 2006 all of the facilities will be operating under a NPDES Permit and manure management plan and at that point in time, the wasteload allocations for these facilities will be zero. The document does not indicate how many of the facilities are currently covered by the NPDES permit program nor does it quantify the amount of the existing load that is due to those facilities not currently under the NPDES program. If the wasteload allocation for the large CAFOs in the Wabash River TMDL will be zero, how much will the existing load be reduced when all of the operations are covered under the NPDES program and operating under a manure management plan. What impact will this have on the model and the projected necessary load reductions?

Response: We did not separately estimate the loads from each individual CAFO facility because of the difficulty in accurately doing so. For example, inadequate information is available regarding the size or location of the applied manure from each facility or the timing and magnitude of runoff from production areas. It is therefore not possible to estimate the impact of the load from these facilities being reduced to zero.

Comments from: Wabash Watershed Alliance

Comment: 2.1 Identification of Waterbody: The first paragraph in this section is a little confusing. Stony Creek divides the 14-digit subwatershed of the lower mainstem of the Wabash River from the upper main stem, located near Fort Recovery.

Response: The sentence was modified to read "For this TMDL, the AUs of interest are 010, 030, and 040" so that AU 010 is not divided.

Comment: It is mentioned, assessment unit 020 and Grand Lake St. Mary's was not a focus of the study. It might be easier to exclude this area from the map in figure 2-1. If the purpose of the figure is to simply show the location of the Wabash River watershed in Ohio all of the 020 drainage unit should be included. However, to avoid confusion it might be easier to note it on the map as not a focus of the study or another label to distinguish it from the study area.

Response: Figure 2-1 was updated so that it does not include AU 020.

Comment: A minor error, the caption on the photo on page 2 is misspelled as Vanderbrush Creek. The correct spelling is Vanderbush Ditch.

Response: Comment addressed.

Comment: Table 2-1 goes along with our earlier comments about Stony Creek. It might be easier to describe the area as headwaters west of S.R. 49 to Beaver Creek or simply headwaters.

The description of 040 is also somewhat confusing. If the intended study area is below the Grand Lake St. Marys spillway then this would be a more appropriate description.

Response: The table entries were changed to be more clear.

Comment: Figure 2-1 should show all of the Wabash Watershed or only the focus area.

Response: Figure 2-1 updated, does not include AU 020.

Comment: 2.3 Pollutant Sources: Table 2-2 should more than likely include the municipal point sources of the Villages of Coldwater and Philothea.

Response: We included the Coldwater wastewater treatment plant in the modeling but mistakenly left it out of the report. The village of Philothea is a new waste water treatment plant, a lagoon system. There is no information in PCS because the facility plans to use land application to dispose of their treated effluent. The village has not yet discharged to the waters of the State.

Comment: 3.0 Description of Water Quality Standards, Numeric Water Quality Targets, and Existing Water Quality: Introduction to 3.2 is easy to understand and the tables are very helpful.

Response: No response necessary.

Comment: Figure 3-1. Is it appropriate to say sampling conducted in 1974 and 1999 covers the entire time period between the two?

Response: No, the figure was re-titled to state, "The first sample was collected May 22, 1974 and the last sample was collected September 2, 1999." Similar changes were made to the other figure captions.

Comment: Sections on nutrients are clear and concise. Tables are helpful.

Response: No response necessary.

Comment: 4.3 Loading Capacity: An understanding of the SWAT modeling system will be important to meeting suggested reductions. It would be helpful for the watershed group to have access to this computer model to test BMP practices for future implementation strategies.

Response: The model is at <http://www3.baylor.edu/cagsr/swat/>. A CD with the Wabash data used for this model is also enclosed with this response for those who requested the data.

Comment: 6.0 Waste Load Allocations: Will the addition of two WWTPs change these allocations?

Response: The wasteload allocations for Coldwater will change the allocations. The village of Philothea is a new waste water treatment plant, a lagoon system. There is no information in PCS because the facility plans to use land application to dispose of their treated effluent. The village has not yet discharged to the waters of the State.

Comment: 11.0 Implementation: Paragraph 2, The Wabash Watershed is not yet eligible for OEPA's Division of Environmental & Financial Assistance (DEFA) linked deposit low interest loan program. This eligibility requires a state endorsed watershed management plan.

Response: We deleted the language from the text.

Comment: Appendix A: Some CAFOs listed are in the 020 drainage area which is not a focus of this study.

Response: The CAFOs in AU 020 were removed from the Appendix.

Comment: The WWA is concerned with the impact Grand Lake St. Mary's has on Beaver Creek and also the section of the Wabash after the confluence of Beaver Creek to the Indiana state line. Improvements in water quality in these areas will be difficult to measure because of the influence from Grand Lake.

Response: Discharge from Grand Lake does have a significant impact on the water quality of Beaver Creek and the Wabash River to the Indiana state line. The 1999 sampling data shows that values of TP and TSS in Beaver Creek below Grand Lake St. Mary's are well above the TMDL targets. We recommend routine sampling along Beaver Creek after its confluence with the Wabash River by either OEPA or other interested groups to allow for an evaluation of the impact of the lake on the Wabash River below Beaver Creek.

Comments from: Mercer Soil and Water Conservation District

Comment: Page 2. In the discussion on the identification of the waterbody, mention is made of 4 AU's. It would be good to identify AU's 030 and 020. It also says that AU 030 was included in the modeling for the TMDL. Does that mean that the TMDL does include AU 030? The section needs to better define exactly what is being covered.

Response: Figure 2-1 updated, does not include AU 020.

Comment: Page 3. Table 2-1 should include AU 030 if it is being included in the modeling. This would reduce confusion.

Response: AU 030 was added to the table.

Comment: Page 4. Figure 2-1 shows only part of AU 020. It also includes the parts of the watershed located in Indiana. If this is to show the entire watershed then the rest of AU 020

should be included. It would also be good to designate that part of the watershed that is being addressed in this TMDL.

Response: Figure 2-1 updated, does not include AU 020.

Comment: Page 5. There is a mention of CAFOs listed in the appendix. Several of these are located in AU 020. If they remain in the report, then the wastewater treatment plants in St. Henry and Montezuma as well as the proposed plant in Chickasaw should be included.

Response: The CAFOs in AU 020 were removed from the Appendix.

Comment: Page 13. In the absence of an appropriate reference stream to compare stream loadings in the Wabash, is it reasonable to use monitoring data from the mid-1970's to help establish the 25th percentile goal?

Response: The use of older data in setting the target (25th percentile goal) is not ideal because of the changes that have occurred in the watershed since the data was collected. However, not enough data was collected during the 1999 sampling effort to establish a statistically robust database. As was stated in the report, the target is subject to modification as new data is generated. Also, we only used the older data in Section 3 of the report to provide background information on the Wabash River watershed. The seasonal patterns in the older and recent data are similar and so it was considered appropriate to display them together. We only used the recent data in making impairment determinations and developing the TMDL.

Comment: Page 16. Paragraph 5 states “model was used to allocate loads to determine what implementation measures may be taken to decrease the input of levels of sediments and nutrients.” It is necessary to know if these implementation measures to achieve the goals are realistic and possible. Nowhere in the report does it mention what these measures are, other than they will be contained in the action plan, which is not written. How can we rely on the unknown to achieve a certain goal?

Response: We discuss, on page 18 of the report, the types of implementation measures that were used to reduce loads (reduced manure application, reduced streambank erosion, reduced sheet/rill erosion, conservation buffers). Implementation of these measures will need to be widespread because of the large load reductions that are necessary to meet the TMDL targets.

Comment: Section 5. Load Allocations. These tables need to be redone if the additional wastewater treatment plants are added.

Response: The tables were updated.

Comment: Sections 9, 10, and 11 refer to various items that local watershed groups will do. Has there been any interaction with the WWA board to explain their responsibilities and actions as outlined in this report?

Response: We anticipate activities in the Wabash River watershed that are similar to activities in other watersheds participating in Ohio's 319-funded watershed coordinator program. The local watershed coordinator, Lance Schwarzkopf of the Wabash Watershed Alliance, will include in the Wabash River Watershed Action Plan (due in late December 2004) a final set of activities and responsibilities best fitted to the unique aspects of the Wabash watershed. The Area Assistance Team, comprised of regional representatives of Ohio EPA, Ohio State University Extension, and ODNR Division of Soil and Water Conservation, will continue to work with local watershed interests throughout the development and implementation of the Watershed Action Plan and the TMDL.

Comment: Appendix A-1. If AU 020 is not considered in this report, the CAFO's in this area should not be included in the report.

Response: The CAFOs in AU 020 were removed from the Appendix.

Comment: Appendix C page 10. There is no longer a 39 foot wide spillway on the lake. It has been replaced with a 500 foot spillway with a 50 foot notch, 11 inches deep. The Wabash Conservancy District also maintains 2 dry dams in addition to the dam at Elora.

Response: The corrected information was inserted into the report.

Comment: If this report is to be used by the people in the watershed, a much more detailed explanation of the technical aspects of the report needs to be made.

Response: Appendix C is intended to describe the modeling process in as much detail as possible given the time and resources available for the project. It is unclear which aspects of the technical analysis require additional explanation. A CD with the data is also enclosed with this response.

Comments from: Grand Lake St. Mary's Lake Improvement Association

Comment: we represent over 600 members of the grand lake st. marys lake improvement association. as a group we have been very active in developing a grass roots organization aimed at restoring this historical lake and its environs. our experience and research shows that 50% of the degradation to our ohio waters has been effectively eliminated through strong legislation and enforcement. the remaining 50% has been left to the general public to solve through organizations (swcd, watershed coordinators, health boards, etc.) relying on cooperation and education. this has been ineffective at best. Agriculture is a very large industry in the wabash watershed. As such it stands to reason that this industry should be regulated just as other industries have been no matter what the size. Currently cafos are not permitted to pollute the waters of the state. This should apply to all afos.

mercer county has the largest concentration of afo's in ohio. with little supervision or oversight manure is allowed to be applied to the ground in amounts that far exceed the recommended rates.

nearly 700,000 tons of manure is generated in the glsm w/s alone. this would require over 80,000 acres of land. there is only 56,000 acres available and not all land owners will permit the application of manure on their land. manure is spread on frozen ground ignoring nracs standard 633.

cafo's are regulated. why would we not regulate all afo's regardless of their size? this only makes sense to those observing the poor use of best management practices.

Response: We have addressed the impact of both AFOs and CAFOs in the Wabash River TMDL report and recommended reducing nutrient loads from manure application. However, the regulation of AFOs is outside the scope of the TMDL study. We concur with the spirit of your comment in that everyone in the watershed should be concerned with implementing the best management practices in compliance with existing standards, and should avoid excessive application or frozen ground application of manure.

Comment: according to the epa 10-30% of all septic systems are failing at any given time. in auglaize and mercer co. septic systems are being installed that will fail in less than 2 years. this is because the soil stability in these counties is not suitable for normal on-site treatment. less than 2% of our soils are suitable for traditional leach systems.

Response: We have addressed the impact of failing and illicitly connected septic systems in the Wabash River TMDL report and made recommendations for reducing nutrient loads from these sources. The local health department is responsible for the proper siting and construction of new systems.

Comment: wastewater from our large county treatment plants provide the most beneficial water introduced into the watershed.

there is a prevailing attitude here that there are good reasons why a landowner should not follow regulations, guidelines, advisories and best management practices. extensive field edge plowing down to and into roadside rights of way, extensive tiling, failure to use tile plugs, over application of manure and the channelizing of streams and removal of stream side riparian buffers creates the opportunity to discharge sediments and nutrients into the water.

There are other sources of non-point pollution, but the overwhelming land use for agriculture dictates that is where we need to concentrate our efforts.

your draft tmdl confirms a major problem exists in the wabash watershed. all indicators point toward continued degradation and full non-use attainment of same.
a national treasure is at stake!

this is the bad news. the good news is that the solutions and funding to solve these problems are at hand, but cannot be implemented on a voluntary basis.

our organization has provided thousands of hours identifying and monitoring the problem and stand ready to help in any effort to restore the lake and environs. we must get past the defensive

attitudes and deal with the facts. we feel that without legislation and enforcement there can be no meaningful improvement in the continual assault on the waters of the wabash watershed.

Response: We have addressed, in the development of the Wabash River watershed TMDL, the impact of both regulated and unregulated activities. Under the Clean Water Act, we cannot create new regulations when developing a TMDL. Consequently, voluntary actions will be needed to achieve many of the recommended load reductions. Any need for new State regulation and enforcement is a legislative issue that local citizens would have to communicate to their representatives.

If you have any further questions, please contact Jean Chruscicki, TMDL specialist in the Watersheds and Wetlands Branch, at 312-353-1435.

Sincerely yours,

Jo Lynn Traub
Director, Water Division

Enclosure

cc:

John C. Fisher, Ohio Farm Bureau
Nicole G. Hawk, Mercer Soil and Water Conservation District
Lance Schwarzkopf, Wabash Watershed Alliance
Bill Ringo, Grand Lake St. Marys Lake Improvement Association
Kevin H. Elder, Ohio Department of Agriculture

