

## **Appendix E: Public Comment Response Summary**



The draft Beaver Creek and Grand Lake St. Marys Watershed Total Maximum Daily Load report was available for public comment from June 12 through July 16, 2007. This appendix contains the comments received and responses to those comments. Please note that reference to report content from the draft document may not correspond to the same page numbers in the final report.

The numbered comments and responses are grouped by commenter, as follows:

- Thomas R. Rampe, Lake Improvement Association (LIA)
- Anonymous commenters
- Mike Broering, Maria Stein Grain
- Larry Antosch, Ohio Farm Bureau Federation (OFBF)

Ohio EPA received a letter from the Lake Improvement Association (LIA) dated March 13, 2007. The LIA has requested that this letter be considered its comments on the draft TMDL report. Ohio EPA received a second set of comments from the LIA on July 30, 2007 that have been incorporated and addressed in this appendix. Those comments begin with LIA #15.

Ohio EPA notes that there is no regulatory authority to act on some LIA comments, but would support any legislation or local ordinances that are in the spirit of the LIA's letter to accomplish water quality improvements.

#### **LIA #1**

*A ban on winter application of all nutrients (manure) should be imposed in the watersheds. Continuing research by the OEPA clearly indicates the winter application of manure is probably the major contributor of the nutrients in the Beaver Creek. Several states have already banned the winter application of manure.*

#### Response

Ohio EPA notes the comment. However, Ohio EPA has no direct regulatory authority over agricultural farming methods such as the timing of application of manure for small and medium operations. Large operations that have an NPDES permit are now very restricted in when and where they can land apply during the winter. Ohio EPA does plan to continue to gather data to support future decisions on this issue.

#### **LIA #2**

*Until a ban on the winter application of manure is implemented, all animal feeding operations in the watersheds must be required to follow the best management practices in NRCS Standard #633 when spreading manure, regardless of number of animals in the operation.*

#### Response

Ohio EPA agrees with the comment and has recommended that NRCS Standard #633 be adhered to throughout the watershed. Ohio EPA does not have jurisdiction over its adherence by facilities not required to obtain an NPDES permit.

#### **LIA #3**

*All animal feeding operations in the watersheds must be required to follow the best management practices detailed in NRCS Standard #590 when applying manure and must certify the availability of 2 acres/animal unit for manure application.*

Response

Ohio EPA agrees that all animal feeding operations should follow best management practices when applying manure, but as indicated Ohio EPA does not have regulatory authority overall operations. To the extent possible, Ohio EPA will continue to support and recommend compliance with NRCS Standards 590 and 633, including making sure that adequate land is available for proper application. At this time, Ohio EPA does not have clear legal authority or technical justification for requiring even all large operations to certify the availability of two acres/animal unit for manure application. For CAFOs permitted by Ohio EPA, management plans are being reviewed and Ohio EPA is trying to ensure that the CAFOs have adequate land available for proper application.

**LIA #4**

*Any spreading of liquid manure or other nutrients on tiled fields in the watershed must be accompanied by the use of inspection boxes or appropriate tile plugs until the danger of flow has ceased.*

Response

Management techniques such as those in this comment have been suggested in the draft TMDL report. Ohio EPA's NPDES permits for CAFOs will include those requirements, but Ohio EPA has no authority to enforce their use at most small or medium operations. The suggestion will be retained in the final report.

**LIA #5**

*A moratorium should be implemented in the watershed on any new or increases of animals at existing dairy or animal feeding operations in the watershed until the Beaver Creek meets its TMDL goals.*

Response

Ohio EPA notes the comment; however, the Agency has no authority to implement a moratorium on increases in the number of animals at animal feeding operations. That decision must be made at the legislative level.

**LIA #6**

*All dairy and animal feeding operations should be permitted and required to meet the environmental standards imposed by the ODA upon the CAFF's now permitted.*

Response

Ohio EPA notes the comment. However, Ohio EPA has no regulatory authority to permit all animal feeding operations. Some discussion about this topic is available in Section 8.1.1 of the TMDL report.

**LIA #7**

*Minimum set backs from streams and road side ditches should be imposed on all adjoining lands. Appropriate officials should ensure that all easements on state, county and township roads are enforced to protect roadside ditches from direct field runoff.*

Response

Ohio EPA agrees that minimum set backs from streams can have positive effects on the water quality of those streams. Ohio EPA recommends working through local ordinances, zoning and other voluntary local effort to instate set back requirements in the watershed.

**LIA #8**

*The implementation of a variety of other best management practices such as the use of winter cover crops and conservation tillage would result in improvement of the waters in the streams.*

Response

Ohio EPA agrees with the comment and has suggested these best management practices (BMPs) in the TMDL report.

**LIA #9**

*Permanent measures to reduce stream bank erosion and vegetative cover for the streams would result in significant improvements in the streams' water quality and their habitat value.*

Response

Ohio EPA agrees that water quality improvements can occur with the reduction of stream bank erosion and an increase of vegetative cover. Ohio EPA suggests the use of conservation easements wherever feasible to preserve riparian areas that will reduce stream bank erosion and increase vegetative cover for the streams. Permanent conservation easements would increase the likelihood of longer-term improvements in water quality.

**LIA #10**

*A ban should be imposed in Darke, Mercer and Auglaize Counties on use of phosphorus on lawns unless soil samples dictate its application or a new lawn is being established. I note that the state of Minnesota, as well as counties in many Midwestern states have prohibited the sale of lawn fertilizers containing phosphorus. Studies have shown that established lawns rarely need it.*

Response

A well-publicized meeting sponsored by the Grand Lake Wabash Watershed Alliance was held for residents of the watershed on July 19, 2007 to discuss lawn care and fertilization. Ohio EPA recommends encouraging participants to become involved in ongoing education about lawn fertilization.

**LIA #11**

*A requirement should be established for all septic systems in the Beaver Creek watersheds to be inspected every two years by a competent party. Systems not functioning properly would have to be repaired. An annual fee for the inspection would be established to cover the cost of administering the inspection program. The health departments should be required to establish and maintain accurate data bases on septic systems. The soils in the watersheds generally are not appropriate for septic systems and many fail within a short time period. Also, the majority of septic systems in the watersheds are more than 30 years old – the expected operational life of a septic system.*

Response

Ohio EPA agrees that some of the proposals in this comment might help to reduce stream contamination from malfunctioning home sewage treatment systems. Statewide rules effective January 1, 2007 would have provided basic requirements to be followed by each local health district to address many of these concerns. However, these rules have been rescinded, so residents can coordinate with local health departments to adopt local rules until state rules come into effect. Again, this is an area where Ohio EPA's jurisdiction is limited to discharging systems; however, Ohio EPA does plan to continue to work with other agencies to improve standards and requirements.

**LIA #12**

*Contractors and property owners should be required to implement required silt and runoff protection and construction sites.*

Response

Construction activities disturbing one or more acres are required to obtain coverage under the NPDES construction storm water general permit (CGP) from Ohio EPA. This also applies to smaller sites that are

part of a larger, common plan of development or sale that is greater than one acre in size. The CGP requires the operator of the site to develop a Storm Water Pollution Prevention Plan (SWP3) for the site. The SWP3 identifies the sediment and erosion controls that will be implemented and maintained as well as post-construction best management practices (BMPs) that will be installed. More information about Ohio EPA's Construction Storm Water Program can be viewed at the following Web site:  
[http://www.epa.state.oh.us/dsw/storm/construction\\_index.html](http://www.epa.state.oh.us/dsw/storm/construction_index.html)

On November 1, 2006, the City of Celina was designated as a regulated Small Municipal Separate Storm Sewer System (MS4). Celina was designated due to satisfying Small MS4 designation criteria found in Ohio Administrative Code 3745-39-03(F)(1)(a). This designation required Celina to apply for and obtain NPDES Small MS4 general permit coverage. The NPDES permit coverage will require the development and implementation of a Storm Water Management Program (SWMP) to reduce pollutant discharges from Celina's MS4s. Two aspects of the SWMP will be to develop, implement and enforce a construction and post-construction program for construction activities disturbing one or more acres. More information about Ohio EPA's Small MS4 Program can be viewed at the following Web site:  
[http://www.epa.state.oh.us/dsw/storm/ms4\\_index.html](http://www.epa.state.oh.us/dsw/storm/ms4_index.html)

### **LIA #13**

*Wastewater treatment plants in the watershed not meeting existing standards should be brought into compliance.*

#### Response

The draft TMDL report suggests that several wastewater treatment plants be required to update their systems to meet today's standards. The Division of Surface Water district staff is responsible for monitoring compliance with NPDES permits. Regular inspections of permitted facilities are conducted. As compliance is evaluated and NPDES permits are renewed or drafted, compliance schedules can be added to the permits. These schedules would require that the facility attain compliance with its final effluent limits. If entities permit limits are not met, escalated enforcement action can be recommended.

### **LIA #14**

*Legislative support for a bill that would create incentives to encourage the brokering of manure from the watershed has significant potential. The incentive would provide a credit to those accepting the manure. The need for the incentive can be supported since the watershed is a "nutrient surplus area."*

#### Response

Ohio EPA agrees that legislation such as that described above might reduce the overall load of nutrients remaining within the watershed. However, Ohio EPA will not introduce such legislation, and suggests that any such legislation be introduced through local efforts.

### **LIA #15**

*Table 1 in Section 6.0 and the accompanying text on page 51 indicate that target conditions for the Lake cannot be met with the proposed TMDL reductions. I feel there should be some discussion in the section about what actions would be required to meet the target conditions and why these actions are not possible if the public is to accept that the target conditions cannot be met.*

#### Response

Ohio EPA recommends an "adaptive management approach" to restoring water quality. Simply stated, this means that reasonable common-sense actions that are supported by existing knowledge are undertaken now. As the actions are implemented, additional data are collected to reveal more about the situation and to guide future action. The approach allows for changes in the management strategy if environmental indicators suggest that the current strategy is inadequate or ineffective. Ohio EPA believes

that action must be taken in the watershed before the effects in the lake are fully seen or understood. There are insufficient data to predict what actions may enable eventual attainment of water quality standards, but we can predict some good first steps to be taken now.

**LIA #16**

*The second full paragraph on page 53 acknowledges the local frustration with a lack of regulatory authority needed to clean up the Lake. It is LIA opinion that there are adequate regulatory authority in the Clean Water Act and other laws if they are aggressively pursued. But the LIA recognizes that the political will and funding are not available to allow government employees to aggressively enforce the existing laws in the watershed.*

Response

There are many regulatory agencies in the State of Ohio that have a variety of roles and authority to take action. Local effort and involvement will continue to be crucial to the success of any improvement in the watershed. Regardless of regulatory authority, the value of voluntary action based on appreciation of the water resource itself cannot be overstated. Ohio EPA looks forward to working with the LIA and other local and state stakeholders toward watershed improvement in the future.

**LIA #17**

*Section 8.0 should be revised to address the sources of pollution in the watershed to reflect their contribution to the water quality problems. Agriculture is by far the largest source of all of the pollutants and should be addressed first in each subsection.*

Response

Ohio EPA staff feels that appropriate emphasis has been given to the various sources of pollution in the watershed, though the organization of the report may differ from the above comment. A reorganization of the report at this late date is not feasible.

**LIA #18**

*Section 8.0 discusses CAFOs in depth. It needs to indicate that the mid and small size dairies and AFOs are a far larger source of pollutants and are not adequately controlled.*

Response

Ohio EPA recognizes that regardless of the size of an animal feeding operation (AFO), manure management issues are very similar. This office is cognizant of the pollutant contribution to waters of the state relating to manure management at small and medium sized AFOs (facilities that are not otherwise regulated by state or federal permits). Ohio EPA, along with Ohio Department of Natural Resources and Ohio Department of Agriculture, has taken many proactive steps to better account for pollution from small and medium AFOs. These efforts, which include cooperative educational outreach to agricultural stakeholder organizations and livestock producers along with developing a set procedures for bringing problem small and medium sized AFOs under regulatory permitting systems, must continue to evolve in order to ensure long-term success for watershed protection.

**LIA #19**

*Section 8.0 should indicate that the extensive tiling of the watershed with few control structures is a major source of the nutrients in the Lake and Beaver Creek.*

Response

Agricultural tile drainage is discussed briefly in Sections 8.1.2 and 8.1.3 in the context of the lack of natural habitats in the watershed and livestock operations. Ohio EPA feels that this is sufficient

discussion of the effects of subsurface tile drainage, which is one of multiple routes through which nonpoint source runoff reaches streams.

**LIA #20**

*Section 8.1.3 should indicate that point sources are a relative small cause of the nutrient loading in the watershed and that revising permit levels will do little toward achieving the goals of the TMDL.*

Response

Ohio EPA acknowledges the comment; however, the relative contributions of point and nonpoint sources of pollutant loads are discussed in sufficient detail in Chapter 4, TMDL results.

**LIA #21**

*The fifth paragraph in Section 8.1.3 should indicate that wider buffer strips in the lowest areas' streams, ditches and other surface drainage areas should be encouraged to reduce excessive nutrient loading into these surface drainage features.*

Response

The intent of the paragraph is not to explore all the details of buffer strips, but rather to mention general principles and to encourage landowners, farm operators and conservation agency staff to work together to solve problems.

**LIA #22**

*On page 62, the last full paragraph should indicate that the lack of enforcement of existing laws at construction sites has resulted in excessive sedimentation in the watershed in the vicinity of the construction sites. The LIA is aware of several construction sites where the contractors have ignored the sediment control requirements of the law with impunity and without penalty to date.*

Response

Construction activities disturbing one or more acres are required to obtain coverage under the NPDES construction storm water general permit (CGP) from Ohio EPA. This also applies to smaller sites that are part of a larger, common plan of development or sale that is greater than one acre in size. The CGP requires the operator of the site to develop a Storm Water Pollution Prevention Plan (SWP3) for the site. The SWP3 identifies the sediment and erosion controls that will be implemented and maintained as well as post-construction best management practices (BMPs) that will be installed. More information about Ohio EPA's Construction Storm Water Program can be viewed at the following website:

[http://www.epa.state.oh.us/dsw/storm/construction\\_index.html](http://www.epa.state.oh.us/dsw/storm/construction_index.html)

However, Ohio EPA's inspectors cannot observe all activities at construction sites. Ohio EPA encourages local citizens to notify their regional Ohio EPA office to report activities that they suspect are not conforming to the construction storm water permits. Ohio EPA has several enforcement tools, including Notices of Violation, Director's Final Findings and Orders with penalties, and Judicial Consent Orders. The tool used is based on many factors including such as the severity of the violation, impact to receiving stream, and recalcitrance. Ohio EPA has issued Notices of Violation to sites within the watershed. Additionally, counties have the authority to pass and enforce their own sediment and erosion control program on construction sites, which the Agency encourages.

**LIA #23**

*In Table 8.2 in the nutrient and sediment sections, include protection of ditches from row crop encroachment. The LIA has documented numerous instances in the watershed where producers are ignoring road easements and are plant up to the ditch edge.*

Response

While Ohio EPA agrees that planting to the edge of ditches is probably detrimental to water quality, the Agency is not aware that it is illegal. Ohio EPA encourages the LIA to work with local conservation agencies to ensure that best practices are employed in all circumstances. Ohio EPA also suggests that LIA work with local zoning and/or elected officials to decide if a local ordinance is appropriate.

**LIA #24**

*Erosion of the shoreline is a major source of sediment loading in the Lake and should be discussed in the TMDL.*

Response

While some analysis of the lake was completed for the report, a TMDL was not completed for the lake. There are insufficient data available to draw conclusions about pollutant loads, sources and causes in the lake. Through improvement actions upstream, some improvement of erosion may be seen in the lake. Measuring shoreline erosion is a good example of data collection that should occur as part of an adaptive management approach to restoring the lake's quality (see response to LIA#15).

**Anonymous #1**

*The fines for pollution need to be increased to the point of if they don't obey the law it won't be profitable to farm.*

Response

Ohio EPA acknowledges the comment. The commenter does not provide enough information to indicate what type of farming he/she refers to. Ohio EPA does work within its regulatory authority and with the Ohio Department of Natural Resources and the Ohio Department of Agriculture to minimize pollution from animal operations.

**Anonymous #2**

*So as not to put all the blame on the farmers, is it possible the new sewer system could be leaking into the lake? It happened once before from a channel in the Montezuma area.*

Response

Ohio EPA is not aware of any untreated sewage overflows to the lake from the county sanitary sewer system. Maintenance personnel are available to respond promptly to emergency situations and have sufficient equipment to make necessary repairs. The pump stations are checked regularly throughout the day.

**Anonymous #3**

*I have been told our soil in this area really doesn't need phosphorus. Why not just ban the use of phosphorus?*

Response

Please see the response to LIA Comment #10.

**Anonymous #4**

*If we get to full attainment status within the watershed, do we know how long it would take for the lake to heal itself?*

Response

Ohio EPA cannot determine how long it will take for the lake and surrounding streams to reach full attainment of water quality standards. Watersheds such as the Beaver Creek and Grand Lake St. Marys

are complex systems with many variables, and their improvement and attainment are difficult to project. Internal nutrient loading and recycling within Grand Lake may be so high that some additional in-lake actions (e.g., nutrient sequestration) may be necessary to completely restore the lake's beneficial uses. There are many techniques available to improve water quality. Attaining water quality goals is largely up to local initiative, which increases uncertainty.

**Anonymous #5**

*What is on the horizon for lake dredging? Where can more funding be found? A good analogy was outlined...If the watershed is the human body and the lake is the heart....if we stop putting all the bad stuff into the body now, the heart is still damaged from all the previous bad stuff. Dredging is the medicine for healing the heart (ie. lake).*

Response

Dredging the lake is largely up to local initiative. Since Grand Lake has a state park and is generally considered a state park lake, the Ohio Department of Natural Resources may become involved with dredging activities if the quality of the lake declines to the point where recreational boating and other water recreation activities are hampered. At this time, Ohio EPA would not recommend dredging, based on scientific evidence, until the sources of impairment (i.e., inputs from the streams) are significantly reduced. See the previous comment for other lake concerns besides excessive sedimentation.

**Anonymous #6**

*A comment was made about holding back water from developed areas via retention/detention ponds prior to entering waters of the state.*

Response

Ohio EPA's NPDES construction storm water general permit (CGP), applicable to construction activities disturbing one or more acres, includes requirements for post-construction best management practices (BMPs). The intent of the CGP's post-construction BMPs is to assure that storm water runoff from developed land does not negatively impact the physical, chemical or biological characteristics of the receiving streams. Thus, traditional storm water controls, which simply address the peak rate of storm water discharge from flood-producing storm events, are not adequate. As land is developed, it becomes more impervious. Vegetation in open fields and forests is replaced with paved surfaces and rooftops. This results in more rainfall becoming storm water runoff. In addition, conveyance systems are installed to drain the site more efficiently, resulting in storm water runoff with more energy than the runoff from undeveloped land. These hydrologic impacts, coupled with the increased concentration of pollutants contained in storm water runoff from developed land use, result in degradation of the water resource to which the storm water is discharged. The smaller the receiving stream the greater the importance of controlling the hydrologic and subsequent pollution impacts of the construction project.

**Mike Broering #1**

*Meet with all the agronomists and nutritionists in the watershed who make recommendations to our farmers. Ask them to help share in solving the phosphorus problem. We need to stop using phosphorus where it is already plentiful. We need to stop old habits that add to the problem.*

Response

Ohio EPA acknowledges the comment and agrees that local involvement and ownership is crucial to the successful implementation of TMDL recommendations.

**Mike Broering #2**

*We need a weekly article in the newspaper to keep the public thinking about correcting the problem. Use the press as an ali to educate the people of new approaches to reduce the problem.*

Response

Ohio EPA acknowledges the comment and agrees that public education and involvement are crucial to the successful implementation of TMDL recommendations.

**Mike Broering #3.**

*Technology. We need to look for technology that stores, shrinks, removes, or makes salable products of the problem.*

Response

Technology can be a useful tool to deal with many problems in a watershed, including manure. There are services in the watershed with emerging techniques (e.g., animal bedding and methane gas) to manage and process manure.

**Mike Broering #4**

*Meet with agribusiness like equipment dealers and ask them to be on the lookout for equipment that can reduce the manure problem. What is going on around the world to solve the manure issues.*

Response

Ohio EPA acknowledges the comment and agrees that local involvement is crucial to the successful implementation of TMDL recommendations.

**OFBF #1**

*Appendix D: Table D-2 presents an excerpt from the unpublished 2002 Ohio EPA Wabash River Biological and Water Quality Report (BWQR). For the evaluated water bodies in the TMDL study area, the existing WWH aquatic life use designation was considered inappropriate by the Ohio EPA experts. In the BWQR study, the Ohio EPA aquatic biologists proposed that the aquatic life use designations be changed from WWH to either MWH or LRW. These recommendations were not incorporated into the development of the nutrient TMDLs discussed in this report as evidenced by the target values presented in Table 2-5 on page 9 of the document. Why were the recommendations of Ohio EPA's experts to assign the correct aquatic life use designations not factored into the TMDL study?*

Response

TMDLs must be calculated for the water quality standards that currently exist. After the 2002 study, Ohio EPA decided to reevaluate stream potential in agricultural (and mining) areas. The rationale was explained in documents distributed to the public during the rule review process in 2005-06.

“This set of draft rules represents a significant shift in public policy in regards to two issues: 1) how impacts from abandoned mine lands are considered in UAAs [use attainability analyses]; and 2) how impacts of ditch maintenance practices are considered in UAAs...

The second policy change is a decision to defer the completion of UAAs on waters that have physical, chemical and biological impacts from significant channel maintenance work associated with agricultural drainage and flood control. The Agency completed studies in several watersheds where those impacts were pervasive and recommendations to consider less than CWA goals uses were made in those reports. However, there is growing evidence that in some locations the “classic” ditch maintenance practices are not necessary or cost effective from an agricultural engineering cost/benefit perspective. Alternatives ranging from an engineered “two stage” channel design to simply letting the “water run its own course” may, *in some locations*, provide adequate drainage and flood protection at lower costs and result in improved water

chemistry and better biological conditions. Until those issues are sorted out the Agency has decided to postpone completion of the UAAs for those waters.”

#### **OFBF #2**

*Table 2-5, page 9: The table presents the target values used to develop the nutrient TMDLs for the Beaver Creek and Grand Lake St. Marys watershed. These values are inappropriate based on the recommended aquatic life use designations in the Ohio EPA BWQR study (MWH or LRW not WWH). Review of tables 1 and 2 in the 1999 Ohio EPA Association Between Nutrients, Habitat, and the Aquatic Biota in Ohio Rivers and Streams report reveals that the target values used for total phosphorus TMDLs are from 1.5 to 4 times too low and the target values for nitrate nitrogen TMDLs are 1.6 times too low. What is the justification for basing the nutrient TMDL targets on aquatic life use designations that are deemed inappropriate by Ohio EPA experts?*

#### Response

Please see the response to OFBF Comment #1. Future adjustments in TMDL calculations would be appropriate at such times as the adoption of a change in the aquatic life use designation or the adoption of numeric nutrient criteria as required under U.S. EPA program guidance.

#### **OFBF #3**

*Table 3-2, page 13: Station 605020 Beaver Creek at Meyer Road is located downstream of the uncontrolled outlet from Grand Lake St. Marys. It is not clear how the discharge volume and the nutrient load from Grand Lake St. Marys was incorporated into the development of the load duration curve and TMDL for this location. Please provide an explanation and insert the discussion into the document.*

#### Response

Flow and nutrient loads from Grand Lake St. Marys were incorporated into the load duration curve analysis as follows:

- Flow volumes: Historical lake level information and a stage-discharge relationship for the spillway of Grand Lake St. Marys were received from the Ohio Department of Natural Resources and used to estimate flows into Beaver Creek. Nine years of discharge data were used to determine average monthly flows from the lake and these flow estimates were then added to the stream flow values for Beaver Creek station 605020 (see Section 4.2.1 of report).
- Nutrient loads: The 605020 sampling station is located downstream of the Grand Lake St. Marys spillway. Therefore all samples obtained by Ohio EPA at this station and used for the load duration curve analysis already include the impact of nutrient loads from the lake.

#### **OFBF #4**

*Page 12, paragraph 3: This section of the report discusses the weaknesses of using the load duration curve approach to develop TMDLs. As discussed, specific nonpoint sources of nutrients and pathogens could not be identified and source reductions quantified. With that being said, it is curious that the water quality improvement strategy presented in Section 8.0 of the document contains impairment cause/source specific details. It is clear that Ohio EPA has predetermined the causes, sources and solutions to the water quality impairments by the tone of the writing of Section 8 of the document. How can the improvement strategy (written by Ohio EPA) pinpoint specific causes and sources of impairment when the TMDL development process (conducted by Tetra Tech) could not? Please explain this apparent discrepancy.*

#### Response

Through the aquatic life use evaluation, Ohio EPA understands some source locations and causes, but may not have enough information to quantify specific loads. However, there is sufficient information to speculate about causes and sources so that some action toward improvement may be taken. Ohio EPA

utilizes an adaptive management approach to all implementation that allows for new information to change the approach and actions being taken.

Although the load duration analysis itself does not provide information on the specific sources of pollutants, other supporting evidence can be used to make informed estimates. As noted in the public meeting held on February 21, 2007, more than 80 percent of the watershed is devoted to agricultural land use (row crops- 73%, pasture/hay- 8%). As such, nutrient and bacteria loading rates from non-agricultural land uses would have to be much higher than agricultural loading rates to be considered the more significant sources. However, typical loading rates for agricultural and urban areas are comparable, with rates from forested areas much less. Additionally, the significant livestock population within the watershed (estimated by the Watershed Management Plan at more than four million animals) would suggest that loading rates from agricultural lands in the watershed are likely greater than average. Finally, the results of the load duration analysis clearly indicate that the majority of the loading occurs during wet weather events (snow melt and rainfall) when sources such as wastewater treatment plants and failing septic systems would be expected to have a less significant impact.

#### **OFBF #5**

*Section 8.1.1, page 56, paragraph 1: The tone of the discussion regarding livestock production is opinionated and biased. The author of this section implies that all of the existing livestock operations are managed incorrectly and are pollutant sources. They go on to say that it will not be until each and everyone is issued a permit that a water quality improvement will be realized. These statements are condescending, argumentative and disrespectful to the very successful non-regulatory programs being conducted by ODNR-Division of Soil and Water Conservation, the local SWCDs and NRCS. Drop the last 3 sentences in paragraph 1 and all of paragraph 2 on page 56 from the document.*

#### Response

Ohio EPA thanks the OFBF for its comment. Ohio EPA recognizes that some livestock operations are managed correctly within the watershed. Ohio EPA has noted through field observations that many of the Ohio Department of Natural Resources-Division of Soil and Water Conservation, local soil and water conservation district, and National Resource Conservation Service programs have not been implemented broadly in the watershed. Additional methods may be required to see more significant improvements in water quality over time. Language regarding livestock operations permits has been modified as follows (page 56, paragraph 1):

Any new CAFO permits would be issued with the expectation to reduce nutrient loading and bacteria in waterways since both the production area and land application activities will be more closely regulated. In addition, CAFO permit holders will be required to attend training related to water quality and manure handling as a condition of their permit.

#### **OFBF #6**

*Section 8.1.2, page 57, paragraph 5: The author of this section presents a bias against agricultural drainage. Agricultural drainage and stream channelization was established in the TMDL study area for the purpose of removing excess water to allow agricultural fields to drain, increasing field accessibility and improving crop growth and yield. Arbitrarily placing water quality (habitat) constraints on a drainage system designed and maintained to address the efficient transportation of excess water (a.k.a. the enemy of the state) is unrealistic. Delete the second sentence of this paragraph.*

#### Response

Ohio EPA appreciates the need to adequately drain farmland through sub-surface tiles and the accompanying ditch systems that provide outlets and conveyance. By virtue of their connection to natural streams, agricultural ditches are a part of the overall drainage network and are considered waters of the State.

The intent of the language in question is not to express a bias against agricultural drainage but rather acknowledge that this use of the drainage network is not compatible with some other uses and water quality goals. Acknowledging these contrasting viewpoints opens the discussion for alternative approaches to traditional drainage that may yield a compromise. Ohio EPA is interested in alternatives that accomplish efficient agricultural drainage and maintain aquatic habitat and improved nutrient assimilative capacity in the streams. Some alternatives are discussed in the text immediately following this transitional paragraph. Language in the referenced paragraph was revised to lessen the perception of bias and to emphasize the goal of good drainage and improved water quality.

Also, Ohio EPA has other water quality concerns about channelized drainage ditches. The scientific literature shows that entrenched channels with little sinuosity or other natural stream features (e.g., riffles) have a low capacity to assimilate pollutants typically associated with agriculture. Sediment, nutrients, and pesticides are efficiently transported to downstream receiving waters (i.e., natural streams) through channelized ditches. Evidence suggests that alternative channel form (i.e., two-stage configuration) leads to better pollutant assimilation and therefore leads to improved water quality in downstream segments of the watershed network. The paragraph in question has been changed as follows (page 57, paragraph 5):

Channelization enhances the drainage of agricultural land, which increases field accessibility and improves and/or protects crop growth (OSU, 1998 Bulletin 871-98 <http://ohioline.osu.edu/b871/index.html>). These practices are sanctioned through Ohio's drainage laws (ORC 6131 and OAC 1511) for valid socio-economic reasons. However, these laws and the commonly employed drainage improvement practices were created long before current state and federal water quality laws and, more significantly, before today's understanding of water quality sciences. A challenge is to carry out actions that improve water quality while maintaining adequate drainage for profitable agriculture.

#### **OFBF #7**

*Section 8.1.3, page 61 paragraph 1: The author of this section states in no undeniable terms that the nutrient and sediment loads to Beaver Creek and Grand Lake St. Marys tributaries are caused by specific identifiable pollutant sources. Sources that could not be specified during TMDL development. How can this be? If the pollutant sources are suspected sources the document should state that fact. Do not imply certainty when none exists.*

#### Response

Please see the response to OFBF Comment #4.

#### **OFBF #8**

*Section 8.1.3, page 62, paragraph 2: Once again, in the third sentence, a specific pollutant source is identified. If data are not available to specify pollutant sources during TMDL development, how can this statement be made? The sentence should be deleted from the document because data are not available to support this claim.*

#### Response

Please see the response to OFBF Comment #4.

#### **OFBF #9**

*Appendix B: Bathtub Model, section 1.1.2, page 6: In this section of the document, Tetra Tech acknowledges that an insufficient amount of total phosphorus data exists to adequately develop a total phosphorus load into Grand Lake St. Marys. To overcome this limitation, the total phosphorus load was estimated using phosphate values that were higher than the total phosphorus values, raising questions regarding the credibility of the modeling results. It is curious that Tetra Tech was able to develop a total*

*phosphorus load duration TMDL for the same station locations that apparently did not have adequate data to develop a total phosphorus load in the Bathtub Model analysis. This raises many questions regarding the validity of the total phosphorus TMDL as well as the Bathtub Model results. Please explain this apparent contradiction in the utility of the available data.*

Response

This section of the report acknowledges the potential uncertainty associated with the estimates of the total phosphorus loads using the data collected by the city of Celina but does not state that an insufficient amount of data exists to estimate a total phosphorus load into Grand Lake St. Marys. After speaking to the city and the laboratory during development of the TMDL, the data collected by the city were considered reliable and were used in combination with data collected by Ohio EPA for both the load duration analysis and for estimated loads to Grand Lake St. Marys. As noted in Section 3.2 of Appendix B, the calibration factor that was used in BATHTUB actually indicates that the total phosphorus loads into the lake might be *under*-estimated. Furthermore, the magnitude of the total phosphorus TMDL load reductions in Assessment Unit 20, where the city of Celina data were available, is very comparable to the reductions identified in Assessment Unit 30, where only Ohio EPA total phosphorus data were available.