

Olentangy River Watershed TMDLs

Appendix D: Response to Public Comments

The draft Olentangy River Watershed Total Maximum Daily Load report was available for public comment from October 17 through December 1, 2006. 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 list of acronyms and abbreviations in the front of the report may be helpful in understanding some of the comments.

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

- Friends of the Lower Olentangy Watershed (FLOW)
- City of Columbus
- City of Delaware
- Central Ohio Sierra Club Group

1. FLOW

The listing of locations of HSTS that need attention is a useful tool, and we believe that the Delaware General Health District has already made impressive strides in dealing with this issue. Currently, we are not as familiar with progress in Franklin County, and we noticed that the TMDL made no mention of an HSTS plan in Franklin County. To close our knowledge gap, we have set up a meeting for December 12 with Paul Rosile, Environmental Health Director, to learn more about what is being done, what still needs to be done, and how FLOW can support that work. We encourage Ohio EPA to include more specific information or recommendations for Franklin County, as HSTS is one of the major sources of impairment for our tributaries.

Response: Ohio EPA is working with the Franklin and Delaware County Sanitary Engineers to provide sewer service to problematic unsewered areas in portions of the Olentangy watershed. Mount Air, an area with failing systems on small lots and poor soils in close proximity to the river, is currently being evaluated for sewer service through the City of Columbus. Both the Franklin County Health Department and the Delaware General Health District will be working with Ohio EPA to address issues in Mount Air and other areas.

Certain new or replacement off-lot systems will be covered under an NPDES permit, which requires additional maintenance and effluent monitoring to demonstrate compliance with discharge limits (as long as on-lot soil dissipation is not feasible). The general permit for select new or replacement off-lot HSTS became effective on January 1, 2007. A permit for existing off-lot discharges is under consideration.

2. FLOW

Regarding the reference on page 86 to the Fifth Avenue Dam, it is FLOW's understanding that the dam may actually be modified rather than removed in its entirety, depending on the results of the Army Corps of Engineers feasibility study. Therefore, to avoid confusion, we suggest that the report could read "...for the express purpose of restoring the upstream portion of the river following removal or modification of the Fifth Avenue dam. Dam removal or modification is

anticipated to occur by the close of 2007". We would also recommend re-checking the timeline for the removal of the Panhandle Dam, as the dates mentioned on page 86 may not be accurate.

Response: The suggested changes have been made to the report to clarify that both removal of or modifications to the Fifth Ave dam are possibilities. The projected timeframe under which the Panhandle Rd dam is to potentially be removed was updated in the report to reflect more current information.

3. FLOW

In Section 9.3.1, Reasonable Assurances, Stormwater Program (page 89), the TMDL states that "Ohio EPA will ensure that the stormwater permit related recommendations of this TMDL are applied, including development of special general stormwater permit for construction activities in a specified area of the Olentangy watershed." To help clarify, we suggest that Ohio EPA identify here the specific stormwater-related recommendations that would be addressed by such a permit.

Response: More specific recommendations for the alternative storm water permit for construction activities are included in the final TMDL. The following language has been added to section 9.2 of the report in the appropriate sub-sections and referenced in the section that's been suggested:

It is recommended that the NPDES General Permit for Storm Water Associated with Construction Activity Located within Portions of the Olentangy River Watershed include additional requirements, beyond the current statewide construction storm water general permit. The additional requirements should include requiring submittal of the storm water pollution prevention (SWP3), riparian setback requirements and more stringent sediment and erosion controls which include performance standards

4. FLOW

Because sections of the Olentangy are exceptional warm water habitat, we strongly support a special general storm water permit that would afford the same level of protection given to other streams such as the Darby. Along those lines, FLOW favors the establishment of target floodplain widths adequate to the protection and preservation of the stream channel, and we view protection of floodplains as essential to the success of the TMDL in maintaining water quality. FLOW encourages the inclusion of protective stream setbacks in stormwater construction permits and in local land use planning and zoning (pages 95-96).

Response: Please see the response to the preceding comment regarding more specific recommendations that are made in the final TMDL report related to an alternative general permit for construction activities. Ohio EPA recognizes FLOW's support for floodplain and riparian protections and encourages involvement in the public process regarding actions taken by Ohio EPA to provide the very protections that FLOW advocates.

5. FLOW

Much of the ultimate success of the TMDL depends on voluntary actions. Unless we make coordination a priority, these efforts by community groups, local governments and other agencies may largely go unmonitored, and we may lose the momentum gained by the publication of the TMDL. Therefore, it is essential to monitor and assess the effectiveness of both regulated and voluntary or community based actions. To that end, FLOW's Watershed Action Plan calls for a quarterly working forum to facilitate communication with the OEPA, OWA,

ravine groups, and other non profits and state and local agencies. Such a forum would be similar to the yearly Olentangy forum, but focused specifically on developing timelines and actions to implement the recommendations of the TMDL and the FLOW and OWA action plans. Given the interest generated by the TMDL, we believe that the time is right to initiate such a forum, and we hope to coordinate with OEPA and others to have a first meeting in early 2007.

Response: Ohio EPA eagerly anticipates working alongside watershed non-governmental organizations (NGOs) and community-based groups like FLOW, OWA and Friends of the Ravines toward a coordination and monitoring of both regulatory and voluntary-community actions.

The Agency plans to form, with assistance of its NGO partners, a TMDL implementation team that will focus upon the coordination, implementation and monitoring of TMDL and TMDL related recommendations. This team may be formalized at the first quarterly meeting as suggested by FLOW.

The state endorsed watershed action plans of both Friends of the Lower Olentangy Watershed (FLOW) and the Olentangy Watershed Alliance (OWA) specify many actions common to the TMDL report's recommendations and provide a community based focus for addressing loading issues.

The Agency is working with FLOW, OWA and the Mid-Ohio Regional Planning Commission to hold "interested party" meetings on a proposed special storm water permit for portions of the watershed. This cooperative effort is part of the Agency's effort to implement TMDL recommendations with optimum watershed community participation, integrating watershed plan objectives and TMDL recommendations.

6. City of Columbus

In section 7.3.4 regarding combined sewer overflows and sanitary sewer overflows in the Lower Olentangy River, the second paragraph describes the two City of Columbus' consent agreements in the following fashion:

The two Cos required the City of Columbus to complete several studies and develop a plan that will eventually result in the elimination of CSOs and SSOs from their collection system.

This language mischaracterizes the decrees in part. While SSOs are to be eliminated, CSOs are to be mitigated pursuant to the standards of the consent decree. The above language should be changed to read:

The two Cos required the City of Columbus to complete . . . in the elimination of SSOs from its collection system and mitigate CSOs to the standards set forth in the consent decrees.

Response: Ohio EPA agrees and the language has been changed to reflect the decrees, specifically: "The two COs required the City of Columbus to complete...in the elimination of SSOs from its collection system and mitigate CSOs to the standards set forth in the consent decrees."

7. City of Columbus

In section 7.3.1 the draft references the City of Columbus as a Phase I Community for NPS pollution in the lower Olentangy River. Table 8.5 provides a percent reduction for total phosphorus (TP) from the MS4. The City has two comments. First, the draft does not provide

any guidance on tools or best management practices that would be implemented in a MS4 permit to achieve these reductions. Without some idea of what Ohio EPA is contemplating in setting out this load reduction, it is difficult to assess the reasonableness of the proposed standard in the TMDL draft.

Second, the City of Columbus' current MS4 permit requires that the City characterize the City's stormwater runoff which is very expensive and not necessarily conducive to achieving TMDL load reductions. MS4 permit writers should include flexibility in permits by allowing permit activities to be structured around TMDL load reductions and allow MS4s to implement monitoring and BMPs in areas that would best meet the load reductions called for in the TMDLs.

Response: Ohio EPA is open to suggestions as to what BMPs Columbus would like to use to reduce phosphorous in storm water discharges from its MS4 as well as how to verify anticipated reductions.

8. City of Columbus

Similar to Columbus' comments on the Big Walnut Creek TMDL, the City is questioning the authority to establish a TMDL for QHEIs.

In section 8.2, Ohio EPA proposes to establish a TMDL for QHEI. While the City understands the importance of protecting habitat, and supports the efforts of watershed groups that are striving to improve water quality, we question Ohio EPA's authority to establish habitat as a TMDL. As noted in the introduction of this draft TMDL, the purpose of a TMDL is to calculate the maximum amount of a pollutant, and then to allocate the load among sources. QHEI is not a pollutant.

We understand that the US EPA TMDL guidance suggests the possibility of establishing control measures for quantifiable non-chemical parameters that prevent attainment of water quality criteria. The guidance document suggests that such control measures would be developed and implemented as a TMDL for such parameters in a manner similar to chemical loads. However, the QHEI components are not analogous to pollutant loads.

Response: U.S. EPA TMDL guidance (1991) states: "EPA [U.S.] recognizes that it is appropriate to use the TMDL process to establish control measures for quantifiable non-chemical parameters that are preventing the attainment of water quality standards. Control measures, in this case, would be developed and implemented to meet a TMDL that addresses these parameters in a manner similar to chemical loads. As methods are developed to address these problems, EPA [U.S.] and the States will incorporate them into the TMDL process."

Ohio EPA agrees that QHEI components are not analogous to pollutant loads; however, the preceding excerpt from U.S. EPA guidance does not state they must be. Guidance states control measures for such parameters are to be developed and implemented in a manner similar to chemical loads. This is in fact the case. Non-point source control measures (for phosphorus as an example) are implemented by establishing a target and recommending management practice to achieve the target. Similarly, habitat TMDLs establish targets, and implementation recommendations are designed to meet them. Ohio EPA believes development of habitat TMDLs is consistent with the intent of U.S. EPA guidance, and therefore respectfully disagrees with the preceding comment. Further, Ohio EPA believes it would be negligent not to include habitat TMDLs in the report. This would place undue focus upon other causes of impairment in a manner analogous to focusing all attention upon point sources of pollution while non-point sources may be of equal or greater significance.

9. City of Columbus

Section 5.1 presents the “potential” target values for phosphorus as well as total suspended solids (TSS). The basis of these target values is founded on the OEPA report entitled *Association between Nutrients, Habitat, and the Aquatic Biota in Ohio Rivers and Streams* (Ohio EPA, 1999). In general terms, the Association document uses a “reference site” approach (which looks at the phosphorus levels observed in pristine, un-impacted reference streams) rather than an “effects based” approach (which would attempt to determine what levels of phosphorus actually cause impairment to the aquatic biological community). Furthermore, the Association document recognizes, but then ignores the fact that Ohio streams can and do achieve full attainment of the applicable biological criteria with the phosphorus levels higher than the reference-site “target” values.

The text in 5.1 also references Ohio Administrative Code 3745-1-04 and states that “waters of the state shall be free from nutrients resulting from human activity in concentrations that create nuisance growths of aquatic weeds and algae”. These two items in section 5.1 appear to be the sole basis for establishing and justifying the application of the target phosphorus value. Section 5.1 further states that there are currently no statewide numeric criteria for either TP or TSS.

The City believes that the referenced-based approach is inconsistent with provisions of the Clean Water Act as well as Ohio EPA’s own guidance document.

- Section 303 of the Clean Water Act requires that the State establish TMDLs “at a level necessary to implement the applicable water quality standards.” There is no current standard for phosphorus or TSS in Ohio.
- Federal regulations at 40 CFR 130.7(c)(1) similarly require TMDLs to be established at levels necessary to attain and maintain applicable “narrative and numeric” water quality standards.
- Ohio EPA guidance on the “Legal and Technical Basis for Nutrient Target Values Used in TMDL Projects (Ohio EPA, 2000) suggests that the state can base a TMDL for Phosphorus on the “target values” from the Association document, even though it recognizes that these are only “suggested guidelines” that are “not codified in regulations.”

Response: This is not an accurate description of what reference sites represent, or how all the data were analyzed. The Associations document shows percentile ranges for both the least impacted (however, not necessarily pristine) reference site population, and percentiles stratified by IBI range for the entire population (the “All” data set). The target ranges for TP presented in Table 2 of the Associations document refer to the ranges from the “All” data set, not the Reference population. Furthermore, Table 2 in the Associations document incorporates results from linear statistical analyses presented in detail in Miltner and Rankin (FW Bio. 40: 145-158).

A careful reading of the Associations document, starting on page 24 for example, shows that it discusses in detail these confounding factors.

The “Legal and Technical Basis” document states that nutrient standards for TMDLs will be created on a case-by-case basis, allowing flexibility in the choice of targets.

10. City of Columbus

The City of Columbus advocates establishing phosphorus limits using an effects-based approach which would identify what level of phosphorus would cause impairment within the stream.

Response: The effects-based study for Ohio is entering its fourth year of data collection. Results to date strongly suggest a cause-and-effect relationship between increasing nutrient concentrations and decreasing biological integrity.

11. City of Columbus

To assist Ohio EPA in employing an effects-based approach, the City of Columbus points the Agency's attention to the following information in the Agency's possession. Per the City's CSO consent order with Ohio EPA, the City has conducted an extensive characterization of the Lower Olentangy Watershed. The Wet Weather Management Plan (WWMP) included all of the data collected in the appendices as well as a summary in section 4 of the report.

In addition, a 2 DVD set of the database (including millions of data points) was provided to Paul Fancher of Ohio EPA in November, 2005. Specifically, the data includes phosphorus samples, biological sampling data, and vast amounts of continuous dissolved oxygen and chlorophyll monitoring data. Several observations can be made about the effects of phosphorus within the Olentangy River.

- Diurnal fluctuations in the dissolved oxygen levels are indicative of algae growth
- Dissolved oxygen continuously met the current water quality standard even with the influence of algae.
- Chlorophyll data also indicated a presence and growth of algae during extended dry periods which implies that sufficient light, nitrogen and phosphorus are present for algae growth.
- Field observations did not identify "nuisance growths of aquatic weeds or algae."
- Biological sampling indicated that the stream is meeting its current habitat designation. This is also consistent with Ohio EPA's biological assessment.

Response: Large diurnal dissolved oxygen (D.O.) fluctuation is a stress. Recent results from Minnesota (<http://www.pca.state.mn.us/publications/reports/biomonitoring-mnriverrelationships.pdf>) and unpublished Ohio EPA data show that wide D.O. fluctuations, even when the minimum D.O. concentration does not fall below WQS, are correlated with declining biological performance.

Periphyton samples collected by Ohio EPA in 2003 documented mean chlorophyll *a* concentrations exceeding 300 mg/m² (i.e., nuisance levels) in the reach upstream from Worthington. Episodic rain events in 2003, however, kept the periphyton mats relatively cropped, so D.O. swings greater than 5 mg/l were not detected in Ohio EPA samples. The presence of dense periphyton mats does suggest that during periods of stable base flow, the Olentangy is likely to experience D.O. swings that fall below 5 mg/l.

The IBI score at the Hyatts Road site (RM 19.4) did not meet the criteria and the IBI score at SR 750 (RM 15.0) is one point away from not meeting the criteria. These relatively low scores are despite the fact that these two sites have the best stream habitat scores in the entire main stem. Mean phosphorus concentrations at these two sites exceeded the TMDL target concentration of 0.16 mg/l TP.

12. City of Columbus

Based on the data in the WWMP as well as the EPA's own assessment, it appears that phosphorus is not limiting the attainment of water quality in the lower Olentangy River. The only impairment along the Olentangy River appears to be the 5th Ave dam. The same analysis for total suspended solids. The current level of solids in the Olentangy River does not appear to be impairing the stream based on two independent sources of data.

Response: The site at Hyatts Road is impaired and the site at SR 750 is near impairment. Again, these sites have the highest quality physical habitat in the entire main stem.

13. City of Columbus

In summary, the City believes that the TP and TSS limits are improperly established and inappropriately based on the available data. The City encourages Ohio EPA to reevaluate the target phosphorus values using an effects-based approach. The City of Columbus is willing to assist this effort by providing and reviewing the current database referenced above with Ohio EPA.

Response: The TP target of 0.16 mg/l for small rivers designated as EWH is, by design, fairly high relative to streams that meet the EWH biocriteria. Based on preliminary analysis, the effects based numbers in development are not likely to be any higher than the existing target values.

14. City of Columbus

The method for allocating load to the CSOs in the lower Olentangy Watershed described in Section 8 of the draft TMDL appears inconsistent with the City's WWMP. The City's Long Term Control Plan component of the WWMP only includes a small amount of storm water redirection from the combined sewer tributary areas within the Olentangy watershed. Nearly every CSO outfall located along the Olentangy River will be mitigated by the construction of CSO storage tanks. These tanks will be designed to eliminate CSO in a typical year (i.e., the CSO will overflow once every other year on average). The CSO volume that is captured will be drained back into the sewer system where it will be later treated by either a biological WWTP or a dedicated high rate CSO treatment facility. In either case, the treatment system will significantly reduce the TSS and TP loads compared to sewer separation.

The City recommends that the CSO allocation not assume separation which increases the loadings from the assumed new storm sewer system while decreasing the load from the CSO system. Instead, the CSO contribution should be zero in a typical year and no increase should be assumed for separation. The remaining available loading may then be allocated to the MS4.

Response: Since CSO excursions are to occur following abatement (roughly every other year) an associated pollutant load will remain and should be accounted for in the TMDL. For that reason a zero waste load allocation to the combined system is inappropriate.

The current WLA to the CSO amounts to about 1% of the WLA to the MS4 and about 0.1% of the TMDL for the lower assessment unit. Ohio EPA considers this load de minimus and finds altering the current allocations unnecessary. The final allocations to both the CSO and MS4 are likely to be only slightly different than the current ones and should bring little to no bearing on the City's management decisions and/or any expectations that are placed on them by the Ohio EPA. Additionally, there are uncertainties surrounding load estimations and the exact way that

the CSOs will be abated (since abatement has not yet happened); therefore, such a small adjustment to the allocation is not very meaningful.

If the City wishes to make changes to the current allocations it can supply the Ohio EPA with the projected (modeled) flows from the CSO following abatement and the appropriate pollutant concentrations in the CSO effluent (e.g., based on the City's pollutant concentration data from the work used in developing the Wet Weather Management Plan). This information and the associated adjustments can be used to revise the final TMDL (pending approval by U.S. EPA).

15. City of Delaware

In the draft report it is recommended that the City of Delaware UOWRC be issued a permit limit for Total Phosphorus of 0.5 MG/L for the summer/fall period and 1.0 MG/L for the winter/spring period. Effective July 1, 2007, the City's NPDES permit from OEPA will require the City to meet a year-round Total Phosphorus limit of 1.0 MG/L. The City has several concerns with the proposed 0.5 MG/L limit, including the added expense of chemicals that could be needed to achieve the proposed limit and possible background interferences that might influence the needed treatment to achieve this proposed TP limit. The City requests that OEPA provide for our review any studies that were performed detailing background concentrations of phosphorus in the Olentangy River prior to the UOWRC discharge into the river.

Response: The City of Delaware will have approximately 10 years to meet the proposed 0.5 mg/L summer/fall limit for phosphorus in accordance with Ohio Administrative Code 3745-33-04(C)(3). This provision provides that any point source constructed to meet all applicable standards of performance shall not be subject to any more stringent standard of performance during a ten year period beginning on the date of completion of such construction. Phosphorus data collected from the Olentangy River upstream of the UOWRC discharge during the TMDL study period can be found in the 2003 Olentangy River TSD (*Biological and Water Quality Study of the Olentangy River, Whetstone Creek and Selected Tributaries*). This study can be accessed from the Ohio EPA web site at: <http://www.epa.state.oh.us/dsw/documents/FinalOlyTSD2003.pdf>.

16. City of Delaware

It is also recommended that the Panhandle Road low-head dam located in the City of Delaware be removed by ODOT for mitigation credits. The City has several concerns with the removal of this dam. The City requests that a study be conducted detailing the impact of this dam removal on the City's water plant intake structures located several miles upstream of the dam and the water levels in the river after the removal of the dam. The City also has a 2-inch waterline across the river at the base of the dam. The City requests that an agreement be reached with ODOT for the needed improvements to this water line prior to its removal.

Response: The recommended removal of the Panhandle Dam should be preceded with appropriate studies and/or due consideration for local municipalities' interests in existing water lines, intake plant structures, post removal water levels or other concerns relevant to water quality, quantity and the public welfare. The water quality benefits associated with dam removal should not preclude due consideration for legitimate interests of the City of Delaware and its residents. How these interests and concerns will be specifically addressed can be the topic of pre-removal discussions between The City of Delaware, the Ohio Environmental Protection Agency and other appropriate parties.

17. City of Delaware

The City of Delaware has contracted with URS Corporation to develop a Storm Water Management Plan for authorization for Small Municipal Separate Storm Sewer Systems to discharge storm water under the National Pollutant Discharge Elimination System Ohio EPA General Permit. The City will be addressing non-point source pollution and best management practices in this plan. It is OEPA intention or the City's obligation for enforcing and implementing the different types of habitat protection that are detailed in this draft report? If it is the City's obligation, we will need to include this information in our Storm Water Management Plan. The City has developed a Comprehensive Planning and Engineering document that includes means and methods for controlling storm water run-off for developing areas within the City of Delaware.

Response: It is Ohio EPA's goal to better integrate TMDL recommendations into storm water permits. The Small MS4 general permit provides flexibility to allow MS4s to develop their storm water management program (SWMP) so that it's tailored to address local problems and concerns. Therefore, TMDLs are an excellent tool for MS4s to use in developing their SWMPs. The recent draft NPDES Alternative Olentangy Construction Storm Water general permit (Olentangy CGP) will be applicable for construction activities located within the City of Delaware. As such, Ohio EPA's expectations will be that the City of Delaware's construction and post-construction requirements be at least as stringent as the criteria set forth in the Olentangy CGP once issued. Please note that the Small MS4 general permit allows MS4s five years to fully develop and be implementing all aspects of the general permit. This allows the SWMP to include a timeframe for developing the necessary ordinance(s) and procedures for implementation.

18. Sierra Club

Maps in Plates A.1-A.4 should be more legible; add major roads and city names so maps would be more useful.

Tables 5.3-5.5: Non-attainment numbers do not show in black and white copy.

Section 6.1.1.1/page 26: The last two sentences seem to need correction. MS4 areas should be in wasteload, while non-MS4 areas should be in the load.

Response: Plates are available in higher resolution for greater legibility. Greater legibility comes at the cost of larger file size, and longer download times. This can be an issue for people with slower internet connections. However, the higher-resolution maps can be made available for download on the Ohio EPA TMDL Web page.

Water-quality statistics exceeding target values in tables 5.3 thru 5.5. are now underlined, rather than italicized, for greater clarity in black and white copies.

The corrections in Section 6.1.1 (page 26) have been made to the report and it now reads:

NPS pollution from MS4 areas contributes to the total watershed *wasteload*. NPS pollution from non-MS4 areas contributes to the total *load*.

19. Sierra Club

Section 6.1.6/Channel Maintenance is too weak on environmental protection. It is unacceptable that county engineers are directly responsible for continuing and ongoing destruction of aquatic habitat.

Response: As discussed in the TMDL report, Ohio EPA recognizes that typical drainage improvement practices often have deleterious effects on water quality and/or aquatic life. However, drainage improvement activities are currently permissible through the Ohio Drainage Laws (i.e., ORC §6131 and ORC §1515), which details a petition process. These laws provide a mechanism for private citizens as well as public entities to accommodate, or better accommodate, desired uses of their land (e.g., crop production) through more efficient drainage. ORC §6131 requires that County Engineers provide technical support and make recommendations regarding the suitability of the project during the petition process. Ultimately the decision on whether or not to go forward with the project rests with the board of County Commissioners. The denial of a petition can be appealed by the petitioner(s) or landowners who would otherwise be affected by the project.

It is also stated in ORC §6131.12 that protections be considered for environmentally significant areas. Environmentally significant areas are defined as those that have retained or re-established their natural character or have scientific or educational significance (e.g., rare or endangered wildlife populations) and because of these qualities, contribute to community's general welfare. Many petition projects are to re-construct man-made channels with relatively small upland watersheds (less than 3 mi²). For this reason, many of these projects do not directly impact environmentally significant areas as defined in ORC §6131.12. However, Ohio EPA believes that drainage improvement efforts, at times, do significantly impact downstream receiving waters of higher quality. Furthermore, the agency has advocated that the majority of drainage projects involving watersheds greater than 3 square miles do need the additional considerations protecting the existing aquatic life use designation.

In terms of the protection of water quality, Ohio EPA has limited jurisdiction on the drainage petition process. Some petition projects require 401 certification by the Ohio EPA, but most do not because they entail removal of sediment (i.e., not filling) and it is usually only incidental sediment deposition that occurs in this process, which is permissible under the Tulloch Rule (<http://www.epa.gov/owow/wetlands/dredgedmat/index.html>). Drainage improvement activities may also require acquisition of a construction storm water permit if the area to be disturbed is one acre or more, but construction permits do not prescribe the configuration of the channel modification, which limits the extent to which the permit protects aquatic habitat.

However, if a 401 certification is required then an antidegradation review is required by rule OAC 3745-1-05. The antidegradation rule provides several important provisions that protect streams. First, the drainage project (or any permitted activity) may not be carried out if it would result in the elimination of an existing use within the context of the Water Quality Standards. Thus, unacceptable impacts are either avoided or mitigated in a fashion that results in no long term impairment in water quality and the recovery of aquatic life to the level associated with the existing use (e.g., Warmwater Habitat or Modified Warmwater Habitat). Second, the public is afforded the opportunity to comment on the project prior to the issuance of the Section 401 water quality certification. Lastly, the Director shall not allow any lowering of water quality unless there is a finding that it is necessary for important social and economic reasons. There is a general assumption that petition ditch projects, if they follow the protocols in Ohio law, are necessary for the public good, but we have the ability to examine that premise on a case by case basis if needed.

The incongruence between current drainage improvement activities and the likelihood of meeting water quality goals throughout the State (i.e., attainment of the State's bio-criteria and nutrient load reductions to Lake Erie and the Ohio River) is recognized in both the private and public sectors. A rural drainage advisory workgroup comprised of diverse stakeholders has

been assembled by the Ohio Department of Natural Resources to work towards solutions to this and other problems associated with agricultural drainage.

Some of the planned outcomes for the efforts of the workgroup include the development of technical standards for alternative drainage improvement practices that do not limit, and perhaps better facilitate, the meeting of water quality goals. Also planned is the development and use of a more rigorous needs assessment that places greater scrutiny on the overall benefits that are assumed to be derived from the proposed drainage improvement project. It is expected that this needs assessment will ultimately reduce the number of drainage improvement projects because projects with questionable and/or marginal benefits will have a lower likelihood of being carried out.

Ohio EPA is participating in these efforts and expects that there will be changes to the current approach to drainage improvements, which will foster improved water quality in the State. One of the first necessary steps in that regard is to ensure that water resources that have attributes indicative of good quality (e.g., warmwater habitat) and higher are protected. Such protections may include overall avoidance, or if necessary, the use of alternative approaches, like natural channel design and/or the two-stage ditch. It is also recognized that having adequate funding mechanisms to offset additional costs to the benefactors of the improved drainage are important and there are efforts underway to explore such possibilities.

20. Sierra Club

Table 7.18: why are Candlewood, Mt Gilead, and Cardington WWTPs not listed as major NPDES sources? Table 7.16 implies that they are while they are not listed in Table B.2 as minor WWTP loads.

Response: The term “major” as it relates to municipal facilities in the NPDES permit program includes facilities with a design average flow of 1 MGD or greater with an approved pretreatment program. There are no “major” point source dischargers in the Whetstone Creek watershed. The term, as used in Table 7.16, identifies those facilities with significant point source loading impacts in the watershed.

21. Sierra Club

8.1.2/Method of Allocation: page 54 has a typo in section on Point Source Discharges. The following sentences are very confusing: “No permit changes are necessary for TSS or FC; therefore, the wasteload allocations for TSS and TP equal the estimated existing loads. Several permit changes are recommended regarding TP...” *It appears that the second TP should be FC.*

But that does not clear up general confusion on why problematic WWTPs are getting a pass on TSS and FC. The text and previous charts have made clear that some WWTPs (and HSTS) are discharging too much bacteria, solids, and untreated waste. Why reduce only phosphorus? For instance, WWTPS at Galion (p. 33), Marion County (p. 37), Mt. Gilead, and Cardington (p. 49) are all discharging too much effluent that has not been treated.

Response: You correctly noted a typo on page 54. The recommended change is made in the final version of the report.

In addressing the second point, Ohio EPA does not agree that these facilities are getting a pass on suspended solids and fecal coliform loadings. NPDES permit limits for fecal coliform are designed to be protective of water quality standards. Fecal coliform limits are being met at the municipal facilities on a fairly consistent basis which suggests that HSTS and livestock access

are a more likely source of impairment. Similarly, suspended solids limits are designed to be protective of “free froms” criteria (OAC 3745-1-04). In cases where the facility has demonstrated non-compliance with suspended solids limits, such as Candlewood Lake and Mt. Gilead, the WWTPs have undertaken plant upgrades providing advanced treatment to comply with more stringent effluent limits.

22. Sierra Club

8.1.4 Margin of Safety/p. 60-61: Are the claims correct that a margin of safety is included in pathogen TMDLs? Earlier sections of the report (Section 4.2/p. 13) state in choosing fecal coliform alone: “Arguably, this is not a conservative means through which to establish a TMDL; however it is done so in conformity with the law. Ohio’s bacteriological standards are currently under review.” The report itself supports doubt that using fecal coliform alone, for only part of the year, and relying on averages, will truly provide margins of safety, despite any die-off between source and endpoint.

Response: Yes, a margin of safety is included in the pathogen TMDL. Bacteria die-off from source to endpoint is not accounted for in development of the Olentangy River Watershed pathogen TMDLs. That is a conservative assumption because considerable die-off does in fact occur. For this reason, U.S. EPA recognizes this approach as a legitimate means of applying an implicit margin of safety. However, a distinction is needed that is not made clear by the report. The intention of the text in question in Section 4.2 is to question the current water quality standard not the method of TMDL development. Ohio’s bacteriological water-quality standards are currently under review and subject to change. The Olentangy River Watershed TMDL report is written in anticipation of a change in the law, and includes load calculations for all watershed areas, regardless of their impairment status under the current regulations. The text in the final report has been modified for better clarity.

23. Sierra Club

Further, the TMDL process relies essentially on limits of a handful of parameters among the many that control water quality. Will limits on phosphorus really achieve use attainment goals?

Response: More stringent phosphorus limits represent one implementation measure that is expected to help restore and protect the Olentangy River and its tributaries. However, as the report states, watershed-wide full-attainment will require an integrated approach to watershed management, which targets decreasing pollutant loads, increasing assimilative capacity, and stabilizing stream geomorphology.

24. Sierra Club

Section 8.2.1/p. 62: In the second sentence, Section 5.3.1 should be Section 5.3. Table 8.7 should have a little explanation about what is “two or less cover” or “sparse or nearly absent cover.”

Response: The reference to section “5.3.1” has been changed to section “5.3” in the report. Table 8.7 lists habitat attributes that are a direct reference to those found in the QHEI form, which is used in performing this evaluation (and subsequently generating a habitat score). “Sparse” and “nearly absent” are categories on the QHEI form to be checked if applicable to the reach of stream that is being evaluated. “Two or less cover types” means that of the ten possible categories of cover types listed on the form, only two or less can be found in the reach of stream. Detailed information regarding these attributes can be found on the following website: <http://www.epa.state.oh.us/dsw/bioassess/BioCriteriaProtAqLife.html>). The effect of

these modified attributes on the biological community is also discussed in the *Association Between Nutrients, Habitat, and the Aquatic Biota of Ohio Rivers and Streams* (OEPA, 1999).

25. Sierra Club

The list of modified habitat characteristics is very useful to describe degraded waterways, but it is not clear how this translates into mandates for changed practices on the ground. Do these result in requirements that county engineers, farmers, or land managers must meet?

Response: The modified habitat attributes are benchmarks that Ohio EPA uses to gauge the relative degree of habitat alterations that interfere with the ability of a flowing water system to attain the biological criteria associated with Warmwater Habitat (WWH). The greater the number of modified habitat attributes a stream segment has, the less likely it is for the biological communities to be up to the WWH level. So in situations where the Agency has determined that WWH is the appropriate aquatic life use designation land use activities and stream channel management practices should be designed to help eliminate as many modified habitat attributes as possible.

However, there are situations where a less aggressive tact should be followed relative to attempting to change modified habitat attributes. Site specific investigations, called Use Attainability Analyses (UAA) may conclude that the WWH use is precluded because a significant number of modified habitat attributes are the result of human caused conditions or features that cannot be changed. Agricultural ditches constructed or re-constructed under current laws require long term maintenance of the drainage improvement, and thus constrain practices that might lessen the impacts of modified habitat attributes. These maintained ditches have a defined use designation in the State Water Quality Standards – Modified Warmwater Habitat (MWH). There has been a general presumption that petition ditch projects, if they follow the protocols in Ohio law, are necessary for the public good.

Ohio EPA has temporarily suspended its practices of UAAs for agricultural drainage ditches until a number of factors are examined. When UAA practices are re-instated any stream segment assigned the MWH use (or other similar uses yet to be named) would not be expected to be managed in the same way as a WWH stream. Some of the modified habitat attributes would be the norm for a MWH stream segment and efforts to change them would not be pursued. Other modified habitat attributes might be deemed excessive for the MWH designation and could be addressed through BMP implementation. Examples of the latter might include high rates of sediment accumulation, insufficient pool depth (> 40 cm), and poor instream cover features.

26. Sierra Club

Table 9.1 is a useful summary of cause or source of impairment in each watershed. Under Pathogens, HSTS (Home Sewage Treatment Systems) are a key source of bacteria; TMDL reductions of 100% in all four subwatersheds reflect the need for improvement. Narrative descriptions suggest that both major and minor WWTPs are an important source for bacterial emissions; why are they not targeted for improved waste handling and bacterial reductions? Livestock production is clearly a source of pathogens; there is a need for more control and section 9.1.1 is too weak.

Response: Please refer to the response to comment #21 regarding reduction in bacteria loading from both major and minor WWTPs.

In addressing the comment referring to livestock, there are two means for requiring livestock operation managers to refrain from management that results in pollution (e.g., manure loading).

The first is through an NPDES permit which is required for all livestock operations that meet the definition of a Confined Animal Feeding Operation (CAFO). The other is through Ohio's pollution abatement program (see OAC §1501) administered by the Ohio Department of Natural Resources (ODNR). No livestock operations in the Olentangy River watershed meet the definition of a CAFO therefore no livestock operators are bound to specific permit requirements in their livestock and manure management.

Ohio's pollution abatement program is intended to abate significant pollution sources that are the result of improper management. People who are adversely impacted by improper management can file a written complaint to the local SWCD or ODNR and an investigation will be initiated. Furthermore, ODNR and/or other state agencies can, upon identifying a problem, also initiate an investigation of the problem. If the investigation shows improper management is responsible for the water quality problems then contact is made with the appropriate owners/operators to begin working to resolve the issue. This may ultimately end in legally binding orders.

27. Sierra Club

Table 9.2 is a summary of strategies to address impairment. It is a good start but is too weak in approach. Similarly, the narrative discussion of habitat and channelization are good descriptions but promise little strict enforcement. The discussion of onsite or decentralized storm water management in developing areas (pp. 76-78) are useful background but promise little teeth to promote active use. The section on Stream Stability mentions Section 5.3 several times; it appears that the citation should be to Section 5.4.

Response: It is correct that Section 5.4 should be cited rather than Section 5.3. This adjustment has been made in the final report.

Ohio EPA can only enforce laws authorized by the Ohio General Assembly. Most drainage improvement projects are conducted by private landowners or are done under the petition ditch laws (ORC 6131 and 1515). These laws lack any strong attention to water quality consideration on their own and provide only very broad provisions for County Commissioners to consider the need to protect "environmentally sensitive areas" in the conduct of implementing drainage improvements. Ditch re-construction projects done to restore agricultural drainage to its original grade and scope is specifically exempted from regulation under Section 404 of the Clean Water Act. Given these facts Ohio EPA has very few means to promise "strict enforcement" of the recommendation made in Section 9.1.2.

An effort is underway to examine ways to ensure greater attention to the environmental and water quality consequences of drainage projects done under state law. Ohio DNR Division of Soil and Water Conservation and the Ohio Federation of Soil and Water Conservation Districts have sponsored the Rural Drainage Committee and brought together a number of the key players to discuss drainage infrastructure needs and ways to encourage better design and maintenance practices. Ohio EPA has participated in this effort. This committee began meeting in 2006 and looks forward to producing an *Ohio Drainage Manual* in 2007.

28. Sierra Club

Section 9.1.3 Nutrient and Sediment/p. 79: We would support limits for point source discharges of TSS, as well as TP. We would hope for stronger incentives and controls for protective buffers along waterways (such as in the Construction NPDES for the Darby).

Response: Please see the response to comment #21 which addresses the question raised regarding stricter limits on fecal coliform and suspended solids at WWTPs. Regarding buffers please see response to comment #3 which discusses a proposed alternative general permit for construction activities in parts of the Olentangy River watershed. Also, Ohio EPA recognizes Sierra Club's support for floodplain and riparian protections and encourages involvement in the public process related to actions taken by the agency in this regard.

29. Sierra Club

9.1.4 Summary/p. 81 It should be noted that recommended waterway characteristics (floodplain connectivity, stable morphology, natural hydrology, stream buffers) all can be advanced by providing protective buffers or greenways along streams. We wholeheartedly endorse point source reductions, even beyond what are recommended here. WWTP should face stricter controls on FC and TSS, not just TP. There must be action against widespread failing HSTS.

Response: Please see the response to comment #21 which addresses the question raised regarding stricter limits on fecal coliform and suspended solids at WWTPs. Local health departments will be implementing more stringent rules for on-site disposal systems which became effective in January 2007. In addition, new off-lot system will now be covered under an NPDES permit which requires additional maintenance and effluent monitoring to demonstrate compliance with discharge limits. The general permit for off-lot HSTS became effective on January 1, 2007.

30. Sierra Club

The data show that MS4 programs will need storm water plans that will reduce contaminants in runoff.

Response: Ohio EPA has begun the process of auditing regulated MS4 programs to determine compliance with MS4 permits. MS4 audits will determine if regulated MS4s are effectively developing and implementing their storm water management programs (SWMP). Also, Ohio EPA intends on better linking TMDLs to the Small MS4 general permits when renewed in late 2007.

31. Sierra Club

9.2 Recommended Implementation Actions/p. 81: We endorse the recommendations but find them too weak, especially as regards livestock contamination, habitat degradation, and nutrient and sediment loading.

Section 9.3 Reasonable Assurances/p. 88: Implement these suggestions and more. Strengthen NPDES permit limits, not just on TP. Reduce land application of sewage sludge and manure. Act against cities that have not complied with the law to manage storm water.

Response: The recommendations regarding livestock contamination, habitat degradation, nutrient and sediment loading are starting points and may be modified as appropriate through an adaptive management approach. It is hoped that OWA and FLOW, in consort with other NGOs, county Soil Water Conservation staff, NRCS and local land owners, will work toward these and perhaps other more ambitious actions that are achievable within the local socio-economic context and site specific water quality conditions. Ohio EPA is most willing to participate with the above in reaching ambitious goals. The Agency's intent to establish an Olentangy TMDL Implementation Team demonstrates this active approach.