

Appendix D. Responsiveness Summary to Public Comments

First Public Comment Period (January 2001)

Written comments from the public:

<u>Date</u>	<u>Name</u>	<u>Organization</u>
2-14-01	Alice McKenney	Tuscarawas Soil & Water Conservation District
3-09-01	Jeff Skelding	Ohio Environmental Council
3-20-01	James Bonta	USDA, ARS-North Appalachian Experimental Watershed

Responses to comments:

Tuscarawas County Soil & Water Conservation District (Alice McKenney)

Comment: After ...calculating existing conditions on a kg/day per square mile for each of the subwatersheds..., it appears that the East Branch is the highest contributor of total phosphorus and sediments, on a per square mile basis.

It appears that, although Nitrogen is high throughout the basin, and reduction is indicated, the East Branch is one of the lowest contributors on a per square mile basis. I think these are important points, which people will probably miss just looking at the [TMDL] table the way it is. Whether you add a column, or another table, or just more discussion/explanation, is up to you.

Reply: A table will be added in the TMDL report showing the loads on a per square mile basis.

US Department of Agriculture, ARS-North Appalachian Experimental Watershed (Jim Bonta)

Comment: How well does the model you are using work? has it been validated with watershed data, such as we have at our hydrologic station?

Reply: Appendix A (in the website) describes the GWLF non point source model in some detail. The model load estimates were compared to the range of observed nutrient fluxes in 6 of the 7 subwatersheds, and generally fall within the range of loads measured during 1998-99. Ohio EPA set up temporary flow gaging stations to estimate nutrient flux in those 6 subwatersheds. The simulated streamflow for the Sugar Creek basin was calibrated to the Sugar Creek USGS gage in Strasburg.

Comment: If your model is incorrect, then you can impact businesses, especially if

you are requiring a lower level of tolerance than is actually in the field.
has this potential impact been investigated?

Reply: Ohio EPA is aware of the impact that required load reductions could have on businesses, particularly the agricultural community. The choice of percent load reduction needed to improve the stream's health to an acceptable level was based on field measured concentrations, not on the numbers generated by the model. Table 13 in the final TMDL report shows the measured and the desired nutrient concentrations in each segment. In addition, the improvements in stream health will be monitored through surveys to measure habitat and biological indices, as well as reduction in pollutant loads. Section 3.1 of the draft report stresses that it is the biological criteria and not the nutrient targets that will be measured to determine full attainment of water quality standards.

The GWLF non point source model was used to help define the spatial and seasonal distribution of loads potentially reaching Sugar Creek, as an aid to prioritize implementation of strategies to solve the problems.

Comment: Is there a plan to determine whether your TMDLs are realistic (model results compared with field data)? to determine whether plans for improving water quality actually make improvements in the stream or make them better or not as well than your model tells you?

Reply: The Sugar Creek basin is scheduled for a water quality and biological reassessment in accordance to Ohio EPA's 5 year plan. If there have been significant load reductions, land use changes, and habitat improvements, the basin should be closer to meeting its biocriteria goals. In the meantime, watershed groups are monitoring the streams to verify Ohio EPA's data and keep track of water quality trends.

Comment: I am not familiar with the model you are using, but there is a better erosion estimation algorithm available - I am referring to RUSLE(revised Universal Soil Loss Equation) . Are there plans to incorporate the newer technology into the model?

Reply: Ohio EPA will investigate this option. Meanwhile, we are open to discuss any strategies or techniques that will help improve the accuracy of our load estimates.

Comment: You mention metals in the report, yet I did not see specific metals listed. they may be there, but because I did not read the entire report I may have missed them. Your model only simulates N, P (?), and sediment (is this correct?). do you have a way to develop tmdls for the constituents that your model does not simulate?

Reply: Ohio EPA measured very high water column concentrations of manganese and iron in several Sugar Creek tributaries. No TMDLs were determined for these parameters because

currently there are no aquatic life water quality criteria for them, making it difficult to quantify a desired reduction.

Comment: If you had a probability distribution that took into consideration flow weighting, would this be useful to you for developing tmdls? for example, if you knew that 80% (or any percentile such as 20%, 50%, etc.) of the time a certain concentration or load would be exceeded, would you be able to develop a tmdl? i would think this may be especially useful if you did not have a model that you had faith in, and the constituents were conservative. However, you would need to assign a probability. now you may just be taking an average, which has a probability, but it is ignored.

Reply: It would be very useful, particularly if the data is available for the time period (season) deemed to be critical for aquatic life. Due to higher temperatures and lower flows, we assume that the summer is a critical time for aquatic organisms. However, it's possible that the Spring months could be equally stressful if certain concentrations are exceeded. I would like to see/discuss an example of this approach, if you have one available.

Ohio Environmental Council (Jeff Skelding)

Comment: ...This lack of implementation plans highlights two issues of importance to OEC: The role of watershed groups and the allocation of funding (such as section 319 funding)....

Reply: Although the Sugar Creek TMDL report doesn't include an implementation plan, it gives specific recommendations to be included in implementation plans scheduled to be prepared by the existing watershed groups. Section 6.2 (Reasonable Assurance) of the Sugar Creek TMDL report describes the existing watershed groups and approximate dates for completion of the implementation plans. Ohio EPA is actively working with the watershed coordinator for the upper Sugar Creek watershed to assure that the watershed plan being formulated is closely integrated with recommendations from this TMDL report.

In addition this watershed has applied for section 319 funds for implementation of management practices aimed at achieving the TMDL goals (meeting the biological and water quality standards applicable to Sugar Creek). Another watershed group in the basin has also been awarded section 319 grants to prepare an implementation plan, and Ohio EPA is working closely with them to assure that the TMDL goals are taken into account.

Comment: Regarding the draft Sugar Creek TMDL, we are concerned that the draft TMDL does not specify the establishment of tighter NPDES effluent limitations for specific point sources. The TMDL should specify the revisions to the NPDES permits that are necessary to incorporate the TMDL's wasteload allocations, should specify the schedules for the revision of

the NPDES permits, an should identify the funding for the planned upgrades.

Reply: The final version of the TMDL report will include effluent limits for point source dischargers in the Sugar Creek watershed. Specifically, an effluent concentration of 1 mg/l total phosphorus is being recommended for all dischargers in the basin. This represents an 80% reduction of the estimated existing load from point sources. Effluent limits for nitrates are included in the TMDL report for those dischargers located in segments that show high nitrate concentration in the water column (relative to the target concentrations recommended by Ohio EPA for each segment).

The limits will be incorporated into the renewed permits, and will have a compliance schedule to allow the dischargers time to meet the limits.

Ohio EPA has loan funds available through its Division of Environmental and Financial Assistance (DEFA) to help the municipal point sources defray the cost of plant upgrades. Municipalities that take advantage of these loans also qualify for the Water Resource Restoration Sponsor Program (WRRSP). The WRRSP provides funds, through loans for publicly-owned treatment works, to finance planning and implementation of projects that protect or restore water resources, ensuring either maintenance or attainment of designated aquatic life uses under Ohio Water Quality Standards. Restoration activities to be undertaken through the WRRSP may range from the preservation and protection of stream and other aquatic habitats to intensive repair and recovery of such impaired habitats. This program is well suited for the Sugar Creek basin, where habitat improvements and non point source load reductions are needed before the stream can attain the biological criteria.

Second Public Comment Period (December 2001)

Written comments from the public:

<u>Date</u>	<u>Name</u>	<u>Organization</u>
12-14-01	Alice McKenney	Tuscarawas Soil & Water Conservation District
1-14-02	Larry Antosch	Ohio Farm Bureau Federation

Responses to comments:

Tuscarawas County Soil & Water Conservation District (Alice McKenney)

Comment: I noted that my name is spelled wrong in one instance. It is on the page numbered - 65- in the printed document which is page 70 of 81 of the PDF document. My last name is McKenney, no "i".

Reply: The correction was made.

Comment: I've been downloading the Appendices, and noticed that App D is not available as a .pdf file. Are you still revising it? If so, could you email me what you have at this point?

Reply: Since that appendix refers to unlisted segments, its completion received a lower priority. It will be available as soon as feasible.

Comment: In Section 2.1, third line, the community is named Sugarcreek. The township is Sugar Creek, the creek is (obviously) Sugar Creek. But, the village is Sugarcreek. Why? I don't know!

Reply: The correction was made.

Comment: In section 2.3.4 Sugar Ck: South to Tuscarawas River...(etc.) First line, beginning of second sentence..."Wetlands and siltation are the main cause of impairments in this segment,..." What do you mean by mentioning wetlands as a cause of impairment? I'm confused. Is this your shorthand way of saying alteration of wetlands?

Reply: No. In Subsection 2.3.1 of the report (3rd sentence) I mentioned that wetlands show lower biological scores than free flowing streams due to lower velocity, silt deposition, low aeration. The biologists are considering having a different way to evaluate wetland-impacted stream reaches, but until they do, these slow flowing reaches typically show lower biological scores.

Comment: I was looking at Table 14. (page 60 of revised draft) for the Percent Reduction for

the East Branch for N, P, and sediments, and I couldn't help noticing that the Percent Reduction for N for the Lower Sugar subwatershed is listed as 0%. (zero percent) Is/was this a typo? Did a wrong value get in the wrong cell of a spreadsheet? The Total N under Existing Conditions, is the same as the TMDL. Was this intentional? It is not the case for any other subwatershed or for any other parameter, which is why it seemed odd to me when I noticed it.

Reply: There is no error on the table. If you look at Table 13 of the report, it shows that the Lower Sugar Ck segment (South Fork to Tuscarawas R) was found to have a NO₃ + NO₂ concentration lower than the target. Therefore, no load reduction was deemed necessary. Due to the larger drainage area, the target nitrates/nitrites concentration for this segment is 1.5 mg/l, compared to 1 mg/l for the smaller drainage areas.

Ohio Farm Bureau Federation (Larry Antosch and John Fisher)

Comment: It is encouraging to see on page 11 of the Sugar Creek TMDL report your recognition that any proposed remediation measures to be implemented in the basin must take into account both environmental benefits and possible economic impact on the agricultural community. The Ohio Farm Bureau Federation supports the use of scientifically based and economically sound conservation practices to protect surface and ground water resources that are delivered in a flexible and voluntary manner. We support and encourage our members to become involved in the implementation of state water quality initiatives such as the TMDL program. We feel it is crucial to the success of the program that Ohio EPA reaches out to ensure that local stakeholders are involved in the development of any implementation plans that are developed for this basin.

Reply: None required.

Comment: The Sugar Creek TMDL report states that the most significant causes of aquatic life use impairment in the Sugar Creek basin are sediments/siltation, habitat alteration and nutrient enrichment. It goes on to state that the measure of attainment of water quality standards will be based on numeric biocriteria not numeric chemical criteria. In addition, habitat assessment (QHEI scores) will be used as a surrogate for total suspended solids. A review of Figure 12 on page 48 reveals that only 4 out of 36 habitat assessment scores are at or above the established TMDL target value of 60. Has Ohio EPA conducted a restorability rating factor analysis for all of these streams? Is a QHEI target value of 60 appropriate? Has the correct aquatic life use designation been assigned?

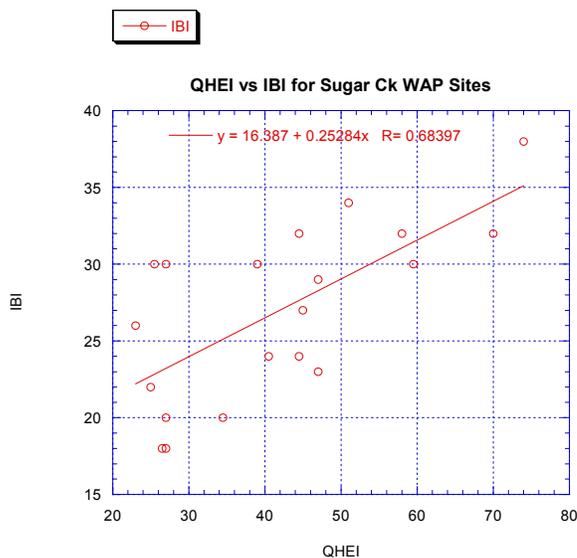
Reply: Ohio EPA has conducted restorability rating factor analysis only for eight segments, based on data collected prior to 1998. The agency no longer determines restorability ratings for all water bodies. However, an extensive attainability analysis was performed for the whole Sugar Creek basin, based on the most comprehensive biological surveys (summer 1998) ever

done in that watershed. As a result of that analysis, 11 segments in the South Fork Sugar Ck, East Branch, and Walnut Creek were recommended for re-designation as MWH, and a tributary of Brush Run was recommended for LRW use designation (see table 6 of Sugar Creek TMDL report). The proposed changes in use designation will become effective 7/21/2002.

Of those 12 segments, only 2 are in full attainment of the recommended use designation. A QHEI target value of 60 is still recommended for those segments, as a way to help them achieve their biocriteria targets for the MWH and LRW use designations. The sediment loads being transported through these segments must be reduced, because they threaten downstream reaches (in Sugar Creek) that are currently in full attainment of the WWH use designation. The aquatic life use designations indicated in table 6 of the Sugar Creek TMDL report are based on biological survey data collected in 1998.

Comment: Appendix F of the 2000 Water Resource Inventory indicates that there is a high likelihood that several of the assessed streams in the Sugar Creek basin will not have their aquatic life restored to an acceptable level. How has this been factored into the TMDL development process? Can biocriteria serve as the measurement of success if restorability based on the observed Qualitative Habitat Evaluation Index (QHEI) values is not likely?

Reply: Part of the question was answered in the previous response. The plot shown below depicts QHEI versus IBI (fish index) for the Sugar Creek basin sites located in the Western Allegheny Plateau (WAP), which includes the lower half of the Sugar Creek basin. It suggests that any increase in the QHEI scores is likely to result in an increase in the IBI score. Thus, even if the QHEI target of 60 is not reached, there should be an improvement in IBI scores. The QHEI is being suggested not as a prescribed limit, but as a way to monitor effectiveness of sediment-reduction management practices.



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

Reply: Ohio EPA concurs that an evaluation of the 6 metrics that make up the QHEI score could be a useful tool for watershed groups/county agencies as an indicator of which types of remediation actions should be stressed. The results of the individual metrics will be made available to watershed groups.

Comment: The stated goal of the Sugar Creek TMDL is the attainment of appropriate aquatic life uses. For the majority of the sampled locations in the basin, stream habitat quality (QHEI scores of less than 60) is the most limiting factor to reaching this goal. Initial restorability analysis raises the question of assignment of appropriate aquatic life use designations. The established target values for nutrients are based on protection of warmwater habitat (WWH) biological criteria. If the stream has a low restorability rating for WWH, a more appropriate aquatic life use designation should be assigned. When this occurs, the target values for nutrients in the TMDL calculations will need to be adjusted accordingly. Has Ohio EPA established a process in which to review and reassign appropriate aquatic life use designations based on the stream's restorability rating?

Reply: The phosphorus targets recommended in the Sugar Creek TMDL report have already taken into account the limitations of poor habitat. If the ecoregion-specific recommendations had been followed, the nutrient targets would have been more restrictive. The recommendations for aquatic life use designation have been based on the most recent biological survey data.