

Appendix R: Response to Public Hearing Comments

Appendix R provides a summary of the comments received during the public hearing comment period which extended from August 20 through September 19, 2018. Appendix Q contains copies of the comments. Comments are followed by a response and have been grouped by category. The commenter is identified in parentheses.

Editorial Comments

Update CAFO maps figures 34-36 and table 14. *Done*

Pages 12 to 18, Figures 3A to 3D: the impaired waters shown on these figures do not match those shown in Appendix A, i.e., for the Big Rib River watershed.

Page 28 to 30, Figures 9 to 11: The “upper” and “lower” segment labels for Lake Wisconsin are reversed. *Done*

Page 31, Section 4.1.1, second sentence, change “Points” to “Point”. *Done*

Page 31, Section 4.1.1.1 last sentence: clarify that the levels present in the discharge must meet the WPDES permit limits. *Done*

Page 31, Section 4.1.1.2 last sentence: clarify that the levels present in the discharge meet surface water criteria or WPDES permit limits. *Done*

Page 34, first sentence: delete “than”. *Done*

Page 50, Figure 17: show county boundaries similar to other figures. (now figure 23 delivered TP load) *Done*

Page 52, Figure 19: The “Below Merrill” pie location is incorrect, or the label should say “Below Tomahawk” (true); both Lake DuBay locations (above and below) are not correct.??? *Done*

Page 54: Reference to Figure 20A should be Figure 20A to 20D. *Done*

Page 59: Reference to Figure 21A should be Figure 21A to 21C. *Done*

Page 66: In the last sentence, Section “50” should be Section “5.0”. *Done*

The average TP concentration for Lake DuBay is 90 ug/L on Table 16 and is 89 ug/L on Table 3, footnote1. *Done*.

Page 81, Section 6.4.2, paragraph 3, line 5: change “not” to “no”. *Done*

General Comments

1. Please note the link to Appendix O is not active on the website. Can/will this get corrected soon?
(Tina Sebold)

Response: Appendix O was delayed by a couple days but was posted. DNR contemplated whether to include it in the TMDL or in future implementation documentation but decided that the information contained in Appendix O provides a better overall understanding of the TMDL.

2. We believe that this TMDL represents sound science and a significant commitment on the part of the Department staff. This is a plan that they should be proud to have developed. Again, we thank the Department staff for the years of effort it has taken to develop this plan. We look forward to working with Department staff and other stakeholders in finalizing this TMDL, adopting site-specific criteria, and implementing the Wisconsin River TMDL. *(Stewards of the Dells of the WI River, River Alliance of Wisconsin)*

Response: Thank you, the draft TMDL is the result of the collective efforts of the department and stakeholder groups.

3. One additional question, would be based on the draft TMDL and the allocation approach and implementation plan outlined, how long will it take for water quality improvement to be observed in the impacted waters? I didn't see a timeframe for improvement noted in the report. *(Marathon City)*

Response: The time frame needed before observing water quality improvements will vary by waterbody and the amount of time it takes to implement the needed reductions; the longer it takes to implement the reductions the longer it will take to observe improvements in water quality. In general, lakes and reservoirs will take longer to respond than rivers and streams; however, actual response times vary depending on the retention time of the waterbody, internal loading, and annual fluctuations in loadings due to weather.

TMDL Allocations and Development Comments

4. On Page 11, Table 3, footnote 1 indicates Lake DuBay is projected to have a TP concentration of 45 ug/L under the SSC allocations and implies this is sufficient to address the impairment of excessive algal growth, and presumably to meet the recreational use standard. No information is included to support this conclusion. What is the chlorophyll-a (CHL) concentration corresponding to the 45 ug/L TP concentrations listed? Does Lake DuBay require a site-specific criterion? How does this data compare to Lake Wisconsin? *(Wisconsin River Discharger Group)*

Response: Appendix C has been expanded to include the analysis that supports that finding and addresses this question.

5. On Table 16, Page 74, why does Lake DuBay have a TP retention percentage shown but Lake Wisconsin does not? (*Wisconsin River Discharger Group*)

Response: The TP retention values in Table 16 indicate how much TP is not delivered downstream, thereby affecting the downstream loading capacity. Since Lake Wisconsin is the downstream end of the TMDL, any TP that is retained there does not affect loading capacity anywhere else in the basin. Based on the BATHTUB model of Lake Wisconsin (Appendix I), TP retention is negative (net internal loading) in Lake Wisconsin, although this may be due to flow being overestimated at Prairie du Sac (see Section 4.3.1.5 in TMDL report).

6. Allocations were applied to the entire watershed. However, portions of the watershed meet the water quality criteria for the Petenwell and Castle Rock impoundments. Since there reached of the Wisconsin River meet the water quality criteria for Petenwell and Castle Rock they should not be allocated. (*Expera Specialty Solutions*)

Response: Under the TMDL, allocations are set to protect both local and downstream water quality. Because of this, all segments upstream of the impaired reaches must receive allocations, even if those allocations didn't result in reductions from the baseline condition. In development of the TMDL the department chose to require reductions from all controllable sources upstream, rather than concentrating them in a smaller number of watersheds which would require even greater reductions in those watersheds.

7. Figures 18 and 19 were very informative. In particular, the yields (mass load per acre) on Figure 18 seem very consistent with published historic yields based on monitoring (e.g. Fact sheet-195-97, USGS, Panuska DNR). Past TMDLs seemed to predict yields that were not consistent. (*Wisconsin's Green Fire*)

Response: Thank you for your comment.

8. Section 4 does not describe how data on the current agricultural nonpoint sources were incorporated into the SWAT model. In contrast, subsections 3.2 through 3.5 of Appendix K include a very clear description of the information sources and data compilation to arrive at a five-year set of input data. Include in the text of the TMDL report a description of how the current or existing agricultural nonpoint sources were accounted for in the data input to the SWAT model. At a minimum, the text should refer the reader to subsections 3.2 through 3.5 of Appendix D. (*Wisconsin's Green Fire*)

Response: Each sub-section of Section 4.1 ("Phosphorus Sources") generally describes the influence of sectors of upstream phosphorus sources (e.g., industrial facilities or CAFOs) without any reference to specific sources. Section 4.1.2.1 is the first instance where the report describes the influence of agricultural runoff on surface waters and was intentionally kept generic to be consistent with other sub-sections of 4.1. Further down, Section 4.3.1.3 provides significantly

more detail about how specific agricultural operations were accounted for in the SWAT model and points the reader to Sections 3 and 4 of Appendix D for even further detail.

9. This section goes into a lengthy discussion of the concerns with use of the SWAT model: estimates exported loads from fields rather than ultimate delivery of loads downstream; calibration not able to capture some seasonal fluctuations; and calibration has residual bias. It also discusses the need and use of a separate model needed downstream of Merrill. The outcome associated with all of this discussion seems to be the need to adjust the SWAT loads. The rather confusing Table 12 appears to indicate that for phosphorus, loads needed to be adjusted by as much as 30% at Mill Creek at CTH PP. In the context of modeling, adjustments as large as 30% are not surprising or unexpected, but it should be taken into account in the TMDL's margin of safety. The TMDL report needs to explain how the magnitude of the bias in the SWAT model results is accounted for in the margin of safety. *(Wisconsin's Green Fire)*

Response: Significant efforts were made during the monitoring and modeling phases of the TMDL to reduce bias as much as possible. During the monitoring phase, the strategy of spatially dense sampling ensured that spatial biases in the watershed model would be lessened, and the number of estimates at ungauged basins would be kept to a minimum. During the modeling phase, SWAT estimates were corrected for bias at each of the sites within the dense network of monitoring sites, thereby reducing the bias of the watershed model to literally zero when compared to site-specific (FLUXMASTER) loading models. Due to the extensive effort to minimize bias, and the confidence in the resulting estimates, we chose to exclude model bias from the implicit margin of safety, except for one component—for any watershed model where the pollutant has both natural and anthropogenic sources, it can be difficult to separate what is, and what is not, natural, and within the estimate of naturally occurring phosphorus is where we chose to define our margin of safety. Because there is no way to validate what is, and is not, natural, without completely returning a watershed to its natural state, we must make assumptions. In the case of the Wisconsin River model, we believe those assumptions to slightly overestimate naturally occurring phosphorus, which provides an implicit margin of safety. This margin of safety is described in Section 6.5 of the TMDL report. For further detail about model error and bias correction, see Section 5 of Appendix D. For further detail about the estimation of naturally occurring phosphorus in the SWAT model, see Section 4.8.2 of Appendix D, as well as:

Robertson, D. M., Saad, D. A., & Heisey, D. M. (2006). A regional classification scheme for estimating reference water quality in streams using land-use-adjusted spatial regression-tree analysis. Environmental Management, 37(2), 209–229.

10. It is unlikely that the SWAT modeling took into account phosphorus in runoff from animal lots or contributions from streambanks. The TMDL report should state how phosphorus in runoff from these sources is taken into account in the source assessment, if at all. If the phosphorus contribution is presumed to be small, there should be a discussion supporting that presumption. *(Wisconsin's Green Fire)*

Response: The TMDL does not explicitly provide allocations to account phosphorus runoff from animal lots or streambank erosion, however phosphorus from these sources is implicitly included in phosphorus load allocation. SWAT output, used to calculate loads, is calibrated to match instream monitoring data. Because these sources are not explicitly defined, they are lumped with the overall agricultural non-point load during the calibration and allocation process. A footnote was added to Section 4.3.1.3.

11. While CAFOs are briefly described, there is no discussion on CAFO loads in the source assessment. Presumably the load from production areas is zero, but it is not stated. State in the TMDL report that for CAFOs a zero-phosphorus load, if used, was assumed for the source assessment of the existing loads. (*Wisconsin's Green Fire*)

Response: A zero phosphorus load was assumed from the animal confinement area (a footnote was added to Section 4.4.2.3 stating explicitly that CAFOs were not included in the SWAT watershed model), however phosphorus loads from fields managed for feed by CAFOs were not assumed to be zero. Phosphorus loads from fields managed for feed by CAFOs are lumped into the general agricultural non-point load estimate, and the allocation of those sources is likewise lumped into the agricultural load allocation.

12. There is no discussion on existing loads from municipal and industrial wastewater point sources in the source assessment. It is unclear whether no loads, existing loads or “baseline” loads described in section 4.4.2.1 were used. Presumably, the point source loads would influence the calibration process. In contrast, subsection 3.7 of Appendix D clearly explains how the existing point source load information was compiled and how it was important to the SWAT calibration process. The TMDL report should specifically state how existing phosphorus loads from municipal and industrial wastewater treatment facility point sources were used in the source assessment and the model calibration process. At a minimum, the text of this section should refer the reader to subsection 3.7 of Appendix D where there is a clear description of the use of existing point source load information in the SWAT calibration process. (*Wisconsin's Green Fire*)

Response: Text has been added to Section 4.3.1.3 of the report to clarify how existing loads were used in SWAT model development.

13. Often in past TMDL analyses, the growing season phosphorus mean concentration was assumed to be equal to the flow weighted mean concentration. It is good to see an analysis of this correlation. However, the flow weighted mean to growing season mean ratio of 1.5:1 or even 2:1 shown on Table 15 warrants some explanation. For example, the data collected on Mill Creek at CTH PP, near the mouth of Mill Creek, undoubtedly is influenced by the discharge of phosphorus from Marshfield's wastewater treatment facility. Is the point source discharge a factor? The high ratios of flow weighted mean concentrations to growing season mean concentrations for phosphorus shown on Table 15 should be assessed and explained. (*Wisconsin's Green Fire*)

Response: Added the following text to Section 5.1: “There was no relationship between FWM/GSM ratios and the distribution of TP sources, but even if there were, the assumption that the ratio will remain constant as concentrations decrease would still be valid because load allocations to each source are proportional to baseline loads. In addition, because allocations for most of the basin are driven by downstream reservoirs, load reductions for most tributaries are beyond what is needed to meet the loading capacities derived from the FWM/GSM ratios.”

As stated in the draft report, high FWM/GSM ratios occur where TP strongly increases with discharge. This pattern is more indicative of non-point sources than point sources.

14. Under load allocations, how the “baseline” conditions for agricultural nonpoint source were determined is not described. The text states that the baseline agricultural nonpoint source load is based on the land cover used in the SWAT modeling, but doesn’t state that the same information (rotations, tillage, etc.) used in the SWAT modeling is used as the baseline condition. The text of the TMDL report should be clear as to how the agricultural nonpoint source baseline conditions were determined. If they are the same as used in the SWAT modeling of existing conditions, the text should refer the reader to subsections 3.2 through 3.5 of Appendix D. If they are different; the text should describe how they are different and why they are different. *(Wisconsin’s Green Fire)*

Response: Text has been added to Section 6.3.2 the report to clarify that the existing crop rotations and management practices used in the SWAT model development were also used as the baseline conditions for agriculture.

15. The point source wasteload allocation section describes a process where the baseline condition is based on permit limits, primarily 1 mg/L TP, and an assumption of the design capacity. This is not the existing condition as some wastewater treatment plants have been discharging are higher concentrations than 1 mg/L and other at lower concentrations. Few, if any, have been discharging at design capacity. WGF independent review of a summary of basin point source data from 2011-2013 is attached. It illustrates the very large differences in the expected phosphorus reductions for the point sources. The decision to use design flow for wasteload allocation has a huge effect on the relative distribution of allocations among dischargers. While the average difference between actual and design flow is 127%, individual differences can be over 300%, including some large dischargers (eg Mauston). The extent of adjustments to recognize design flow should disclosed in the TMDL and justification provided especially for the largest differences between actual and design flow for large dischargers. It also helps put into perspective the relationship between the point source wasteload allocation and nonpoint source load allocation. This is important information and should be part of any TMDL. The TMDL report should include a summary table or chart comparing the existing loads to the baseline loads and the wasteload allocation and justification provided for significant differences between the design flow used in wasteload allocation and actual flow. *(Wisconsin’s Green Fire)*

Response: For development of the TMDL baseline flows for municipal discharges the department based its approach on the language in both NR 106.06(4)(d) and NR 217.13(2)(c)1, which stipulate that the effluent flow used for effluent limit calculations should be based on the design flow of the facility, unless it is demonstrated that this design flow rate is not representative of projected flows at the facility. As noted, the relationship between design and actual flow varies widely amongst municipalities. This is due to several site-specific factors including design year, projected versus actual growth of the community, and the loss or gain of significant industrial users.

In development of the TMDL the department declined to undertake systematic development of new growth and flow projections for the communities in the TMDL project area. A comprehensive effort such as this would have been required to demonstrate that the current design flows are not representative of projected future flows. There were a few instances where the actual flows from municipal dischargers exceeded their recognized design flow, in these instances their baseline flows were set equal to the highest average annual flow over five years (2012-2016). These instances have been noted in Table F-2 of Appendix F.

Point Source Wastewater Comments

16. The facility has voluntarily reduced its phosphorus discharge to the Wisconsin River by greater than 50% in the last seven years through source reduction efforts. Yet because secondary treatment is by the waste activated sludge process a certain amount of phosphorus is necessary to maintain settling and effective BOD removal. The facility has reached its practical operating minimum for residual phosphorus. Further reductions necessary to meet the proposed allocations will be achieved only by high cost options such as adding tertiary treatment, reducing biological oxygen demand to the treatment plant (curtailing operations, etc. (*Expera Specialty Solutions*))

Response: Based on the monitoring data reported from Expera Specialty Solutions-Rhineland from the past three years, it appears that the facility would be able to meet effluent limitations based on the SSC wasteload allocations listed in Appendix K and would not need to achieve additional reductions. However, further reductions would be needed to meet effluent limitations based on the non-SSC wasteload allocations listed in Appendix J.

In addition to traditional treatment approaches to achieve compliance, water quality trading and adaptive management could be used to demonstrate compliance with TMDL waste load allocations. These compliance options may provide opportunities to reduce overall pollutant loading in a much more cost-effective manner than traditional treatment alternatives, however each permittee will need to evaluate their individual situation to determine their best compliance option.

In the case of the Expera Specialty Solutions-Rhineland, one potential cost-effective option may be trading with Expera Specialty Solutions-Mosinee. The Mosinee facility's discharge has been consistently below effluent limitations based on the wasteload allocations listed in Appendix J

and K. Based on data from the past three years, it appears that the Mosinee facility would be able to generate sufficient trading credits to offset discharges from the Rhinelander facility. In addition to the Expera Mosinee facility, there are number of other facilities in the basin producing high quality effluent which could serve as credit generators for water quality trading.

17. The Phelps Sanitary district continuously discharges its effluent from our lagoon to a wetland. It drains to an unnamed tributary that flows to the Deerskin River that eventually makes its way to the Wisconsin River. Several years ago, when our Sanitary Engineer Steve Ohm and I were going through a routine inspection, we decided to visually check out the flow as it leaves the Sanitary effluent pipe, then check the flow as it crosses several roads, Hwy 17, COOP Road, Strong Road, and then finally St. Louis Road. What we found was that it appeared that the flow became smaller the farther we went from the Sanitary lagoon and when we came to St. Louis Road the flow had totally dried up to nothing. That started to make us wonder on how often does our effluent really make it to the Deerskin River let alone the Wisconsin River. I started visually checking the flow at the St. Louis Road crossing once a month and found that there was flow during 3 out of the 12 months and 9 of the months the creek bed was dry. It appears that there is flow at the St. Louis crossing only during the spring runoff season and during heavy rain events.

It is assumed that the amount of phosphorus that leaves the Phelps Sanitary lagoon makes it all the way to the Wisconsin River. We do not believe that this is a valid statement. I've included a picture of the dry creek bed at the St. Louis crossing from less than a month ago and this summer has been a wet year. Hence, we believe that the phosphorus in the effluent that leaves the Phelps Sanitary lagoon does not impact the phosphorus levels of the Wisconsin River. Therefore, the Phelps Sanitary should not be given mandatory phosphorus limits because there is obvious times when the effluent doesn't reach the Deerskin River, and then that raises the question if the effluent ever really reaches the Wisconsin River. *(Phelps Sanitary District #1)*

Response: Section 6.4.1 of the TMDL acknowledges that there are situations where discharges to wetlands and to other limited aquatic life waters may not impact downstream waters where phosphorous criteria apply. In such instances, the Department can consider phosphorus losses prior to the downstream water as part determining whether permit limitations are consistent with the TMDL wasteload allocation. For example, if it were determined that only half of the phosphorus discharged reached the downstream water, the permit limits could be increased proportionately to account for this loss. These situations will need to be evaluated on a case-by-case basis to determine what additional information may be necessary to justify any necessary adjustments.

Regarding the assignment of a WLA to Phelps, without a WLA any discharge that did leave the wetland complex and enter the Wisconsin River or a tributary would result in a permit violation. While Phelps may believe they do not need a WLA, the WLA provides protection if discharge occurs.

Point Source MS4 Comments

18. Wausau Missing from list of MS4s in Table 9 (*North Central Wisconsin Stormwater Coalition*)

Response: Correction made.

19. Please provide commentary on the feasibility of MS4s meeting site-specific criteria reductions (57.5% to 81.4% from no controls) solely with the MS4 boundary considering the capability and scalability of current stormwater treatment technologies. Given likely obstacles to doing so, NCWSC requests that TP reductions from streambank restoration projects within an MS4 boundary be given credit toward meeting the TMDL wasteload allocations. The WDNR 's MS4/TMDL Modeling Guidance document currently does not allow credit for streambank restoration within an MS4 boundary (*North Central Wisconsin Stormwater Coalition*)

Response: DNR considers streambank stabilization activities an important step in reducing the discharge of sediment and phosphorus. However, TMDL baseline modeling using WinSLAMM (<http://www.winslamm.com/>) already assumes that drainage systems are stable; therefore, it is not appropriate to take credit against the WLA or percent reduction in the TMDL for stabilization of a drainage ditch or channel of the MS4. However, stabilization projects should be identified in the TMDL implementation plan and can serve as a compliance benchmark toward meeting overall TMDL goals. Please see the MS4 TMDL guidance and MS4 permit for details.

Nonpoint Source Comments

20. Please provide narrative for Figure 28 and Table 17 in Section 7 (county manure ordinance and county land & water plan update schedules.) (*North Central Wisconsin Stormwater Coalition*)

Response: Additional narrative has been added to the report.

21. Nonpoint source wasteload allocations/reductions – NCWSC acknowledges the implementation framework described in Section 7, but concerns remain regarding the effectiveness and enforceability of existing nonpoint programs/tools and inadequate staffing and funding sources. NCWSC supports seeking increased enforcement authority, staffing and funding through the legislature. (*North Central Wisconsin Stormwater Coalition*)

Response: Thank you for your comment. The Department is unable to request increased enforcement authority, staffing, or funding. Requests need to be made through the legislature.

22. We recognize that many of the permit holders that discharge to the Wisconsin River and its tributaries have already made vast improvements in reducing the pollution they send to the river. Such commitment has not yet been reciprocated among some of the non-point sources,

where efforts to improve water quality have been traditionally underfunded and under-utilized. In past opportunities for public comment, River Alliance has encouraged the Department to think creatively in utilizing and adapting existing phosphorus compliance tools to make compliance with these TMDL-derived permit limits manageable. We commend the Department staff for going beyond the requirements of the TMDL, to provide some of this guidance for implementation. Appendix N demonstrates the technical potential of achieving reductions from agricultural non-point sources and provides some of the edge-of-field reduction goals that could guide agricultural practices. While Appendix O contains some guidance for nutrient trading, adaptive management, and multi-discharged variances, we support the River Alliance concerns regarding the implementation of these strategies. Adequate implementation of these non-point source reduction goals is essential to meeting water quality goals. *(Stewards of the Dells of the WI River, River Alliance of Wisconsin, Lake Wisconsin Alliance)*

Response: Thank you for your comment. Additional discussions concerning implementation of the TMDL will be ongoing throughout the implementation process.

23. Despite the admirable work that has gone into providing guidance, we agree with River Alliance which still sees a disconnect between the recommended reductions and the implementation plan. Though some of the decision-making process is out of the hands of agency staff (i.e. cost-share funding), there are more resources and partnerships that could be explicitly leveraged to achieve the desired water quality goals. This TMDL could be an opportunity for the Department staff to not only collaborate but display strong leadership and direction. We hope that, going forward, the Department will continue to display the innovation and transparency they have shown up till now in the TMDL process. *(Stewards of the Dells of the WI River, River Alliance of Wisconsin)*

Response: Thank you for your comment. Under current funding, the Department has dedicated a position to coordinate the implementation of the TMDL.

24. LWA supports continued department resources being allocated toward implementation of the TMDL. We do not see a clear path for implementation of the load reductions needed to meet the water quality goals identified in the report and we encourage the department and other agencies work diligently to develop practical implementation methods. It appears that a new or at least revised approach from that which has been used in the past is need, as historically the current system for nonpoint source has not reduced phosphorus loads to lake Wisconsin or the watershed. We hope that going forward, the department will continue to display the innovation and transparency they have shown to date in the TMDL process. *(Lake Wisconsin Alliance)*

Response: See response to comment 23.

25. We acknowledge the responses to comments regarding these topics and the information provided in Section 7. Our previously stated concerns remain. The nonpoint source load

reduction strategy outlined in Section 7 lacks meaningful enforcement tools and has been historically ineffective. New options like water quality trading are unlikely to benefit nonpoint sources or point sources. We believe that trading will not be a viable option for most point sources due to the low credit thresholds and other restrictions. Without a new or revised approach to controlling nonpoint sources, the WRDG believes the TMDL will fail. Increased, meaningful, enforcement authority, program revisions, staffing, and equitable funding mechanisms to address nonpoint sources must be implemented by the state agencies and the state legislature so effective nonpoint reductions can be made within the same timeframe that coincides with reductions that are being imposed on point source dischargers. *(Wisconsin River Discharger Group)*

Response: Increased, meaningful, enforcement authority, program revisions, staffing, and equitable funding mechanisms to address nonpoint sources can only be implemented by state agencies through authorization of the state Legislature and Governor's office. Please note, federal implementation dollars from USDA-NRCS are available but not subject to state oversight.

26. Only the point sources are being allocated yet the predominant loading to Petenwell and Castle Rock impoundments are from non-point sources. It is doubtful the water quality criteria will be met without significant reductions in nonpoint source contributions. *(Expera Specialty Solutions)*

Response: The TMDL assigned allocations to both point and nonpoint sources. Reductions for nonpoint sources typically range between 63% under the recommended SSC to 79% under the current water quality criteria.

27. Appendix N is a valuable addition to the document and a step toward NPS implementation. It is evident that the phosphorus yield estimates in Appendix N do not agree with the baseline yield numbers from SWAT. However, they are important additions to the science of NPS management. They would be even more valuable if the sub-basin yield values from SWAT were listed in table 1.2 in Appendix N along with the PI values using the trade report method. Future implementation efforts will need to understand the difference between these yield estimation techniques. Also, future efforts to bring the SWAT and Snap plus models closer to the same yield estimates would benefit from listing both model outputs for each sub-basin in this evaluation. Include SWAT sub-basin phosphorus yield estimates alongside trade report PI yield estimated in table 1.2 of Appendix N. Also, the TMDL should recommend that the Snap Plus model be modified to automatically provide farm-wide weighted mean values for trade report phosphorus index and soil loss. This recommendation is an important part of reasonable assurance of nonpoint implementation. *(Wisconsin's Green Fire)*

Response: We appreciate your comment and look forward to using Appendix N to improve communication of TMDLs with the agricultural community. It's correct that there are differences between SWAT estimates and SnapPlus estimates, but they are correlated (unfortunately, the

Appendix N that was published as part of the public hearing process contained a programming error in the analysis, which has been corrected).

In response to this comment, we looked at the relationship between SWAT delivered HRU loads (the fraction of agricultural loads delivered to each SWAT reach) and SnapPlus edge-of-field loads. The magnitude of SnapPlus edge-of-field estimates is about 170% higher than SWAT HRU loads, and about 200% higher than SWAT delivered loads (about a 66% loss of phosphorus from the edge-of-field to the pour point of each reach, on average). The relationship between the two estimates, when averaged within subbasins, is present, yet there is still a significant amount of difference between the two:

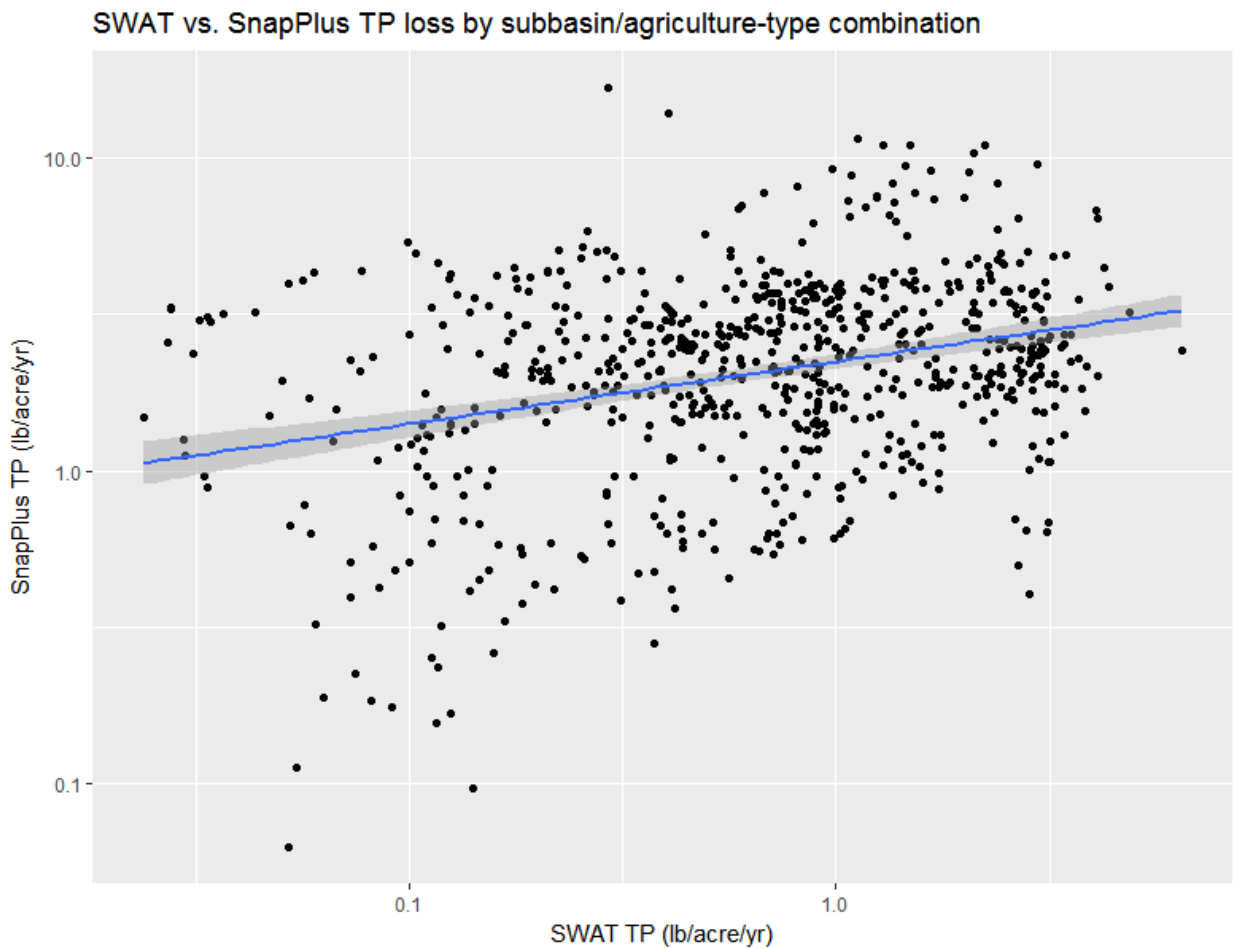


Figure 1 Comparing edge-of-field SnapPlus to delivered SWAT TP losses for subbasins of the Wisconsin River basin

A previous investigation on the same topic for the Lower Fox River TMDL, where we looked at the relationship between SnapPlus TP edge-of-field and SWAT hydrologic response unit (HRU, analogous to edge-of-field) TP loss, revealed a similar relationship, with some agricultural types showing a better correspondence than others:

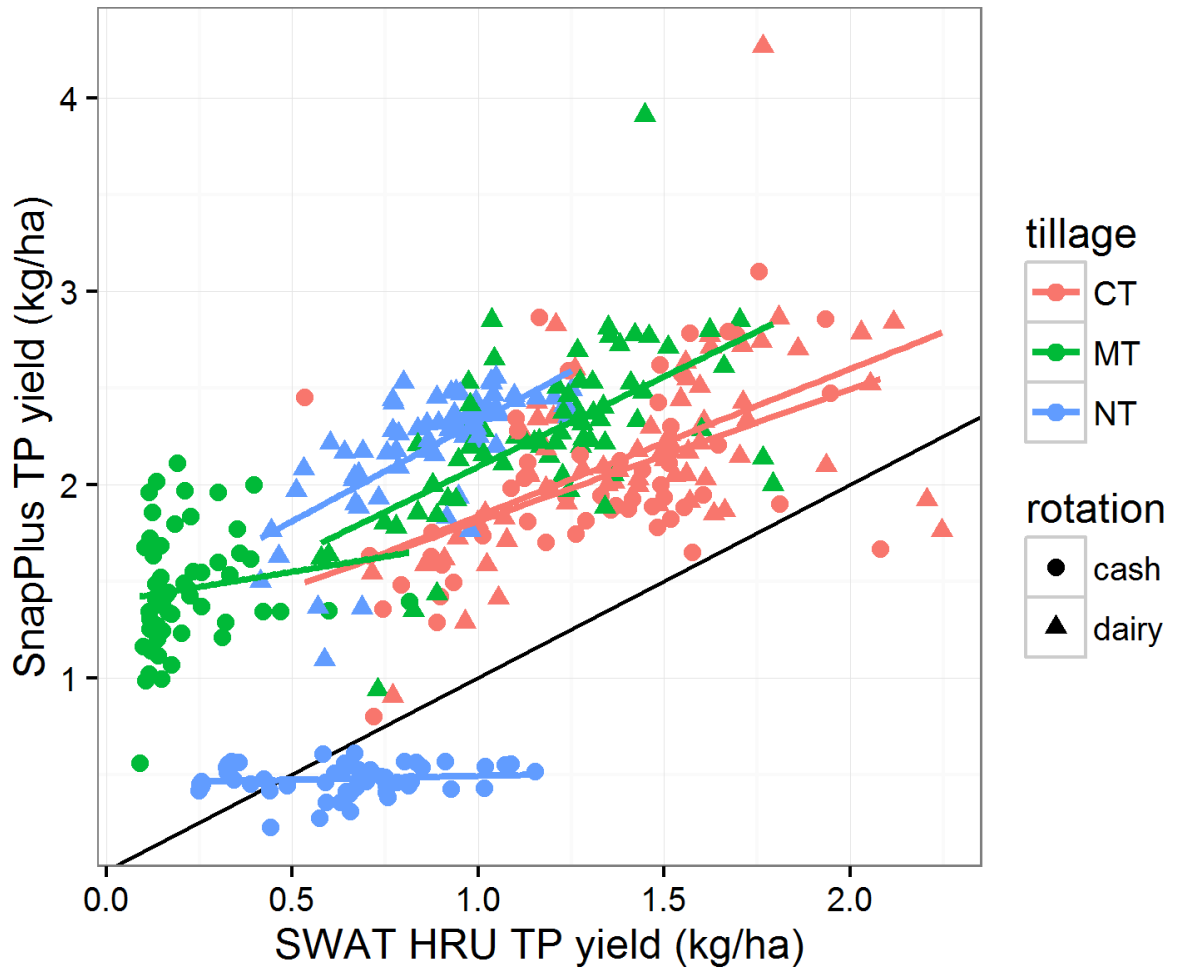


Figure 2 Comparing edge-of-field SnapPlus to SWAT hydrologic response unit (HRU) TP losses in the Lower Fox River basin. CT = conventional till, MT = mulch till, NT = no till.

When mapped across the Wisconsin River basin, the spatial pattern of TP loss per acre is similar overall, but some subbasins differ dramatically:

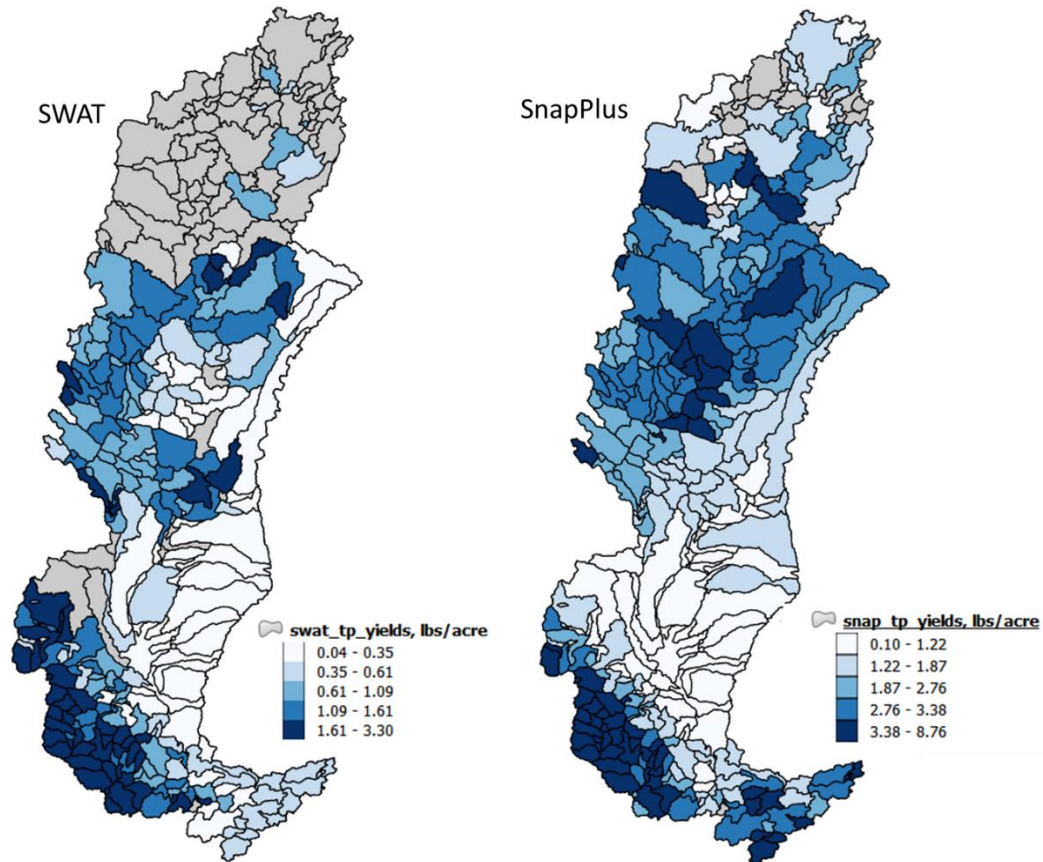


Figure 3 Spatial distribution of TP loss per acre across the Wisconsin River basin. Grey subbasins indicate that there was not enough agriculture to be included in the SWAT model.

This subject deserves more research to better contextualize Appendix N and its utility for relating SnapPlus edge-of-field TP loss estimates with percent reductions that are tied to a TMDL SWAT model. However, the SnapPlus model has a history of accurate prediction of TP loss, and we therefore determined that its use in establishing a baseline agricultural TP loss, and corresponding TP loss target, is justified.

With respect to the request to include SWAT estimates in Table 1 of Appendix N, we believe, that although this would be useful from a modeling perspective, it may cause confusion for users of the table. We feel that one TP target and one estimate of an agricultural baseline will ultimately make the table more useful. With that said, we are happy to provide any of the estimates used in the creation of Table 1 in Appendix N, upon request.

28. Despite the lengthy list of nonpoint source implementation programs, the historic trend has been chronic underfunding of programs needed to implement TMDLs. Add to that, the level of nonpoint source management necessary to achieve the load allocations requires a far greater level of management than what will be achieved through meeting the existing performance standards, such as a phosphorus index of 6. The TMDL should point out the need for increased funding in the listed programs to implement the set of TMDLs in a timely manner, such as 10 to

15 years. Also, the Department of Natural Resources should consider adopting targeted performance standards for the Wisconsin River Basin consistent with the load allocations in this TMDL report. These recommendations are an important part of reasonable assurance of nonpoint implementation. (*Wisconsin's Green Fire*)

Response: Funding for nonpoint programs is set through the legislature and budget process. Adoption of more stringent performance standards, as outlined in s. NR. 151.005, Wis. Admin. Code is a legislative process and cannot simply be initiated by the Department without directive. The TMDL report references this process in several locations.

29. Wisconsin was a leader in establishing technology-based effluent limits on phosphorus back in 1992 at 1.0 mg/L. As a result, Wisconsin municipal treatment plants have already removed approximately 90% of the phosphorus in their discharges, and many have removed upwards of 97%. It is thus not surprising that most of the phosphorus impairments in Wisconsin's waters do not come from municipal treatment plants, but from nonpoint sources. The TMDL seeks to impose extremely restrictive limits on point source dischargers, despite the fact that baseline phosphorus loadings in the Wisconsin River TMDL area are dominated by nonpoint sources. Because point sources have already removed a substantial amount of phosphorus from their discharges, reducing phosphorus discharges from point sources to the level proposed in the TMDL will not result in significant water quality improvement. (*Stafford Rosenbaum on behalf of Municipal Environmental Group-Wastewater Division*)

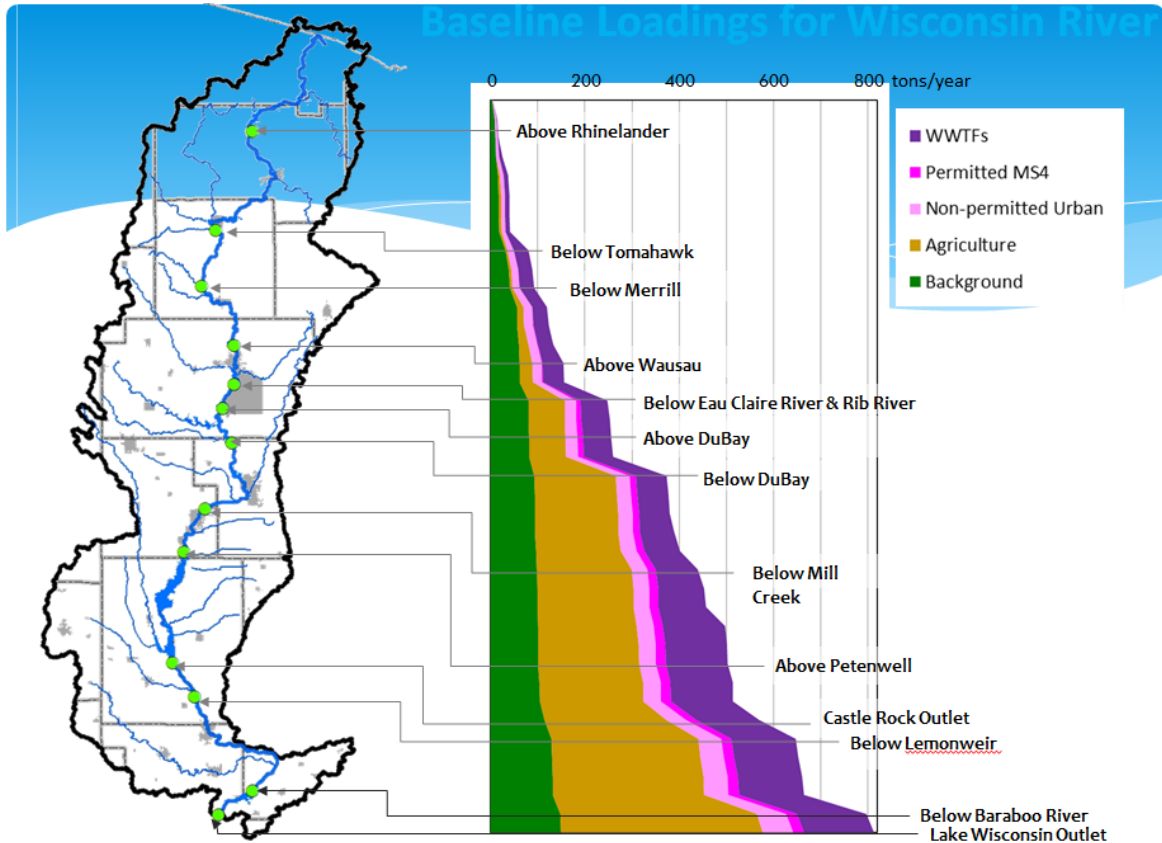
Response: Response: It is true that many wastewater discharges have been subject to technology-based limits (TBELs) of 1.0 mg/l (or alternate TBELs > 1.0) since the initial promulgation of ch. NR 217, Wis. Adm. Code, in 1992. Those discharging less than 60 pounds per month (industry) or less than 150 pounds per month (municipal) were not subject to TBEL requirements and many are still discharging well above the 1.0 mg/l level. As shown in the figure below, wastewater treatment facilities are still a significant source of phosphorus in the Wisconsin River Basin with the exact percent varying based on rainfall. For example, in 2012 wastewater treatment facilities became the largest source of phosphorus in the Wisconsin River Basin.

Revisions to NR 217 in 2010 established water quality based effluent limits (WQBELs) for wastewater dischargers based on new water quality standards for phosphorus. WQBELs calculated according to s. NR 217.13, Wis. Adm. Code, can be stringent when local or downstream waters are impaired and water quality criteria are low. In many cases, the WQBELs derived from draft TMDL WLAs are less stringent than WQBELs derived from s. NR 217.13, because the TMDL takes contributions from nonpoint and other point sources into account.

Chapter NR 217 WQBEL requirements are accompanied by allowances for extended compliance schedules of up to 9 years, where needed, and alternative compliance options such as adaptive management, which may give a wastewater discharger up to 20 years to achieve compliance with their WQBEL. Water quality trading is another compliance option that is available to point sources. The multi-discharger variance (MDV) for phosphorus also extends the timeline for complying with low-level phosphorus limits. The trading, adaptive management, and MDV

options are available to qualifying wastewater dischargers that must meet phosphorus WQBELs, including those derived from a TMDL.

Figure: Contribution of Different Sources at Various Points Along the Wisconsin River Mainstem:



30. In response to prior comments, DNR created Appendix N, which provides the agricultural load allocation as an edge of field number expressed in the same manner as the implementation model SnapPlus. The goal is to "help aid nonpoint implementation and better inform point source compliance options." MEG appreciates DNR's effort to aid implementation of nonpoint source pollution reductions. However, the creation of this Appendix does not provide reasonable assurances that nonpoint source pollution reductions will occur. Efforts at nonpoint source pollution reduction have been historically ineffective, and this TMDL Report does not provide sufficient explanation for how TMDL implementation will achieve proposed reductions in nonpoint source phosphorus pollution. *(Stafford Rosenbaum on behalf of Municipal Environmental Group-Wastewater Division)*

Response: Appendix N is intended to aid in implementation planning. Please see section 7.3 regarding reasonable assurances for nonpoint sources. Absent reductions in nonpoint sources, point sources could receive more stringent NR 217.13 derived effluent limits. Increased,

meaningful, enforcement authority, program revisions, staffing, and equitable funding mechanisms to address nonpoint sources can only be implemented by state agencies through authorization of the State Legislature and Governor's Office. Please note, federal implementation dollars from USDA-NRCS are available but not subject to state oversight.

31. The TMDL should not proceed unless and until nonpoint source phosphorus pollution can more effectively be addressed. Imposing restrictive TMDL-based limits on point source dischargers without improvement on the nonpoint front will require substantial public expenditures with likely insignificant water quality improvement. *(Stafford Rosenbaum on behalf of Municipal Environmental Group-Wastewater Division).*

Response: The majority of wastewater discharges covered by the TMDL are already facing stringent phosphorus limits based on s. NR 217.13 Wis. Admin. Code, and the TMDL provides relief for most of these facilities. Therefore, delaying the TMDL to wait for reductions from nonpoint sources will result in additional costs to numerous point source dischargers and more stringent effluent limits.

Phased TMDL Implementation Comments

32. MEG requests that DNR strongly consider and provide additional information on a phased TMDL implementation. This is particularly necessary for this TMDL area, where there is such significant uncertainty that the water quality criterion is appropriate and attainable. A phased TMDL would provide additional time to study and revise the criteria if appropriate, without locking permittees into stringent wasteload allocations that could be subject to antbacksliding restrictions.

A phased TMDL would also allow for achievement of interim milestones and waste load allocations while allowing time for achieving important nonpoint source reductions. A phased implementation process could include initial load reductions followed by monitoring and modeling and resulting modifications to the TMDL allocations. Without a phased approach, point sources will be forced to meet final allocations over a short timeframe as compared to nonpoint sources. And, as discussed above, such allocations will not result significant water quality improvements.

The authority to implement a phased TMDL approach exists under the Clean Water Act, The U.S. EPA has issued several guidance documents that discuss the permissible use of phased or staged TMDLs. See Guidance for Quality-Based Decisions: The TMDL Process, Environmental Protection Agency (1994); Memorandum: Clarification Regarding " Phased " Total Maximum Daily Loads, Environmental Protection Agency (2006). MEG requests that DNR provide further evaluation of a phased approach to the 'Wisconsin River TMDL *(Stafford Rosenbaum on behalf of Municipal Environmental Group-Wastewater Division).*

Response: Phased or staged TMDL wasteload allocations (WLAs), as described in the comment, are not supported by the memo referenced (Memorandum: Clarification Regarding “Phased” Total Maximum Daily Loads, U.S. EPA 2006) in that WLAs are unable to be phased in the way envisioned in the comment as outlined below. However, implementation of wasteload load allocations and other water quality based effluent limits can be “phased” through use of adaptive management or the multi-discharge variance (MDV).

U.S. EPA’s memo also clearly states that all TMDLs must be set to meet water quality standards:

*“Under the phased approach the TMDL has LAs (load allocations) and WLAs (wasteload allocations) calculated with margins of safety **to meet water quality standards**” (emphasis added by U.S. EPA).*

TMDLs do not create new regulatory requirements but rather are implemented through existing regulations. For Wisconsin, ch. NR 217, Wis. Adm. Code sets out the requirements for implementation of the wasteload allocation from a TMDL. Specifically, s. NR 217.16(2):

If the phosphorus limitation based on an approved TMDL is less stringent than the water quality based effluent limitation calculated in s. NR 217.13, the department may include the TMDL based limit in lieu of the limit calculated in s. NR 217.13 if the limit calculated under s. NR 217.13 has not yet taken effect. If the department includes the TMDL based limitation for phosphorus in the WPDES permit in lieu of the limit calculated in s. NR 217.13, the TMDL based limit may remain in the permit for up to two permit terms to allow time for implementation of the TMDL, or the implementation period specified in the TMDL, whichever is less. The department may include a schedule of compliance to achieve a TMDL based limit if the department determines a schedule of compliance is necessary.

Please note that NR 217.16(2) is consistent with a phased TMDL approach as laid out in U.S. EPA’s memo from 2006:

In such cases, the Guidance recommends that some additional provision in the TMDL, such as a schedule and description of the implementation mechanisms for nonpoint source control measures, be included to provide reasonable assurance that the nonpoint source measures will achieve the expected load reductions. Such additional provisions also assure compliance with federal regulations 40 CFR 130.2(i), which provide that in order for the wasteload allocations to be made less stringent, more stringent load allocations must be “practicable”.

To bolster the reasonable assurance section of the TMDL, the department is utilizing new modeling capabilities to express the load allocation as an edge of field yield consistent with output from SnapPlus and has conducted analysis to show that the load allocations in the TMDL, which give point sources relief from NR 217.13 limits, are achievable with reasonable implementation of agricultural management practices.

U.S. EPA's memo also clearly states that all TMDLs must be set to meet water quality standards:

*"Under the phased approach the TMDL has LAs (load allocations) and WLAs (wasteload allocations) calculated with margins of safety **to meet water quality standards**" (emphasis added by U.S. EPA).*

Standards and Site-Specific Criteria Comments

33. To start, we want to offer our support for the site-specific criteria. This approach is based on sound science and will result in substantial reductions in phosphorus that should reduce noxious blooms of blue-green algae. This approach also represents a more equitable solution, sharing the burden of compliance rather than disproportionately affecting the upper section of the basin. (*Stewards of the Dells of the WI River, River Alliance of Wisconsin, Lake Wisconsin Alliance*)

Response: Thank you for your comment. The allocation scenario without the SSC requires more reductions in the Upper section of the basin because of water quality criteria and while the reductions needed become much more evenly distributed under the SCC scenario, it is a result of water quality criteria and not an equitable distribution of reductions throughout the entire basin.

34. The draft TMDL report includes two different allocation approaches and WDNR has stated that the SSC-based allocations are the preferred allocation approach that will be recommended to USEPA for approval. We generally support the SSC for the Petenwell and Castle Rock reservoirs. However, our understanding is that the SSC cannot be implemented until rules are formally promulgated for SSC which DNR estimates could occur by October 2019 under the best scenario. This leaves a lot of uncertainty for point sources as to what their actual final load allocation (and WPDES discharge limit) will be. While point sources above Petenwell and Castle Rock reservoirs must meet significant reductions with either option, the final approved water quality target changes the WPDES permit limits and impacts feasible compliance scenarios. WPDES permits for affected dischargers should not be reissued with final total phosphorus limits until the SSC rules are in place, thus avoiding application of anti-backsliding rules. (*Wisconsin River Discharger Group*)

Response: The TMDL is moving forward with the current criteria because the majority of the wastewater discharges are already facing stringent phosphorus limits based on s. NR 217.13 Wis. Admin. Code, and the TMDL provides relief for many of these facilities. Therefore, delaying the TMDL to wait for the adoption of the site-specific criteria would also result in additional uncertainty and expense to point source dischargers.

35. The proposed SSC is very stringent and may be difficult to achieve considering Lake Wisconsin is highly influenced by the river. Our group recommends and supports an approach that implements the SSC for Petenwell and Castle Rock Reservoirs, and local reductions in the

watersheds below Castle Rock dam, followed by a re-evaluation to determine if these reductions have the desired effect on Lake Wisconsin. *(Wisconsin River Discharger Group)*

Response: While the proposed SSC is much lower than the existing criterion, it is still higher than the lake/reservoir criteria which would apply if the water residence time in Lake Wisconsin was higher. The delayed implementation of the SSC will extend the time required to meet water quality criteria in Lake Wisconsin requiring the reductions in the upper portion of the basin to occur before beginning to work on the lower half of the basin below Castle Rock and Petenwell; TMDL water quality modeling indicates that reductions will be needed to both the upper and lower portions of the basin to meet water quality standards in Lake Wisconsin.

36. It appears that this approach was used to address the water quality impairment on Lake DuBay (see comment 3). Footnote 1 to Table 3 seems to indicate that although the Lake DuBay will not meet water quality goals at the promulgated criteria, WDNR deems it likely that reduction of TP loading resulting from attainment of criteria above Lake DuBay, will result in removing the impairment, without further action to revise the water quality criteria for Lake DuBay. *(Wisconsin River Discharger Group)*

Response: That interpretation is correct. Please see new details on Lake Du Bay in Appendix C.

37. Our calculations, based on information from the TMDL report, indicate that the TP in Lake Wisconsin will be reduced to 56 ug/L, if the proposed SSC for Petenwell and Castle Rock are implemented and achieved, and all the local reductions are also achieved. Approximately 82% of the criteria reduction anticipated by the proposed Lake Wisconsin SSC will be achieved without implementing the Lake Wisconsin SSC. Modeling could be used to assess and support this approach. The Minnesota study referenced in Appendix C as the basis for the 40 ug/L criteria for Petenwell and Castle Rock Reservoirs includes a table (page viii) showing TP criteria for lakes by region in that state. Lakes in the southern half of the state (3 regions) list TP criteria ranging from 60 to 90 ug/L, with CHL ranging from 20 to 30 ug/L. This reference suggests the proposed Lake Wisconsin SSC may be low when compared to other lakes in the region. The recreational use target of 20 ug/L CHL, 70 percent of summer days is described in Wisconsin 2018 Consolidated Assessment and Listing Methodology (WisCALM) is based on user perception surveys conducted in Minnesota. This recreational use target was not developed in Wisconsin, nor is it codified. The TMDL should explain why the use of this target is justified for reservoirs in Wisconsin. *(Wisconsin River Discharger Group)*

Response: The Minnesota study was used as one source of information in the development of Wisconsin's phosphorus criteria in 2010. Unlike Minnesota, Wisconsin did not adopt regionally variable phosphorus criteria. This decision is supported by analysis of Wisconsin user perception data, which show much less regional variation than was observed in Minnesota.

38. The TMDL should not move forward until the SSC are promulgated. The separate track for the SSC is problematic since, depending on where a permittee may be in their permit cycle, permit limits could be established using the current criteria and may not be revised using the SSC when its promulgated because of antibacksliding or antidegradation rules. *(Expera Specialty Solutions)*

Response: The SSC must be adopted through a rulemaking process. Given the required steps in the process, it is estimated that the SSC rules covering Castle Rock, Petenwell, and Lake Wisconsin may be adopted in 2019. The TMDL will move forward with the current criteria because a significant proportion of the wastewater discharges are already facing stringent phosphorus limits based on s. NR 217.13 Wis. Admin. Code, and the TMDL provides relief for many of these facilities. Therefore, delaying the TMDL to wait for the adoption of the site-specific criteria would also result in additional expense to point source dischargers.

39. MEG supports DNR's decision to pursue site-specific criteria (SSC) for lakes Petenwell, Castle Rock, and Wisconsin. MEG strongly objects to proceeding with finalizing the TMDL prior to successful completion of the SSC process.

As DNR is aware, an SSC must be adopted by rule in Wisconsin. This process can take a number of years. If DNR moves forward on the TMDL without first securing SSC, point sources may face implementation of extremely stringent TMDL allocations. There are a number of permittees who are facing reissuance of permits including TMDL limits in the upcoming years. If these permittees receive TMDL limits that become effective prior to completion of the SSC, they could be stuck with these limits due to antidegradation/antibacksliding restrictions. It makes little sense and could result in significant expense to point source dischargers if the TMDL were to proceed prior to finalization of SSC. The TMDL should not move forward unless and until completion of the SSC. *(Stafford Rosenbaum on behalf of Municipal Environmental Group-Wastewater Division).*

Response: The SSC must be adopted through a rulemaking process. Given the required steps in the process, it is estimated that the SSC rules covering Castle Rock, Petenwell, and Lake Wisconsin may be adopted in 2019. The TMDL will move forward with the current criteria because most of the wastewater dischargers are already facing stringent phosphorus limits based on s. NR 217.13 Wis. Admin. Code, and the TMDL provides relief for many of these facilities. Therefore, delaying the TMDL to wait for the adoption of the site-specific criteria would also result in additional expense and uncertainty to point source dischargers.

Reserve Capacity and Margin of Safety Comments

40. Reserve Capacity (RC) – NCWSC recommends that RC not be available to new or expanding CAFOs unless nonpoint load allocations are met in the subbasin in which the CAFO is located. *(North Central Wisconsin Stormwater Coalition)*

Response: Pursuant to s. NR 243.13 (2)(a), Wis. Adm. Code, CAFO permits prohibit the discharge of manure and process wastewater from production areas to navigable waters by means other than land application unless all of the following apply:

- 1. Precipitation causes an overflow of manure or process wastewater from a containment or storage structure;*
- 2. The containment or storage structure is properly designed, constructed and maintained to contain all manure and process wastewater from the operation, including the runoff and the direct precipitation from a 25-year, 24-hour applicable rainfall event; and*
- 3. The production area is operated in accordance with the inspection, maintenance and record keeping requirements.*

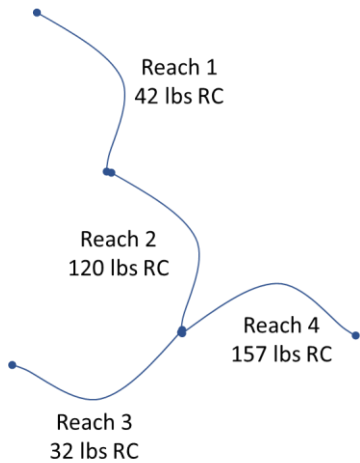
The administrative rule refers to the above restrictions as the standard limitations.

However, s. NR 243.13 (2)(b) allows alternative discharge limitations for production areas when the permittee demonstrates an alternate treatment technology would result in an equivalent or lesser discharge of pollutants. Alternative discharge limitations, which are then based on the effluent quality provided by the alternate treatment technology, would apply only to discharges from the production area and would ensure the discharge of pollutants would be equal to or less than the discharge of pollutants allowed by the standard limitations.

Because the use of alternative discharge limitations results in less pollutants leaving the production area, the department feels it is appropriate to allow CAFOs using alternative discharge limitations access to reserve capacity, subject to the same restrictions as other industrial and municipal permittees.

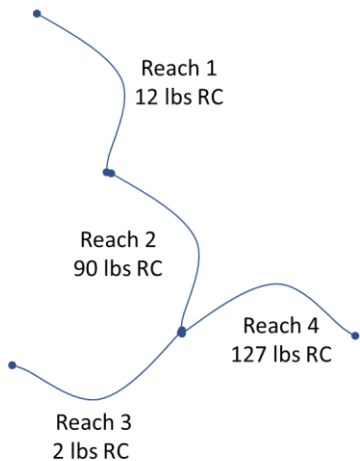
41. While we appreciate the explanation provided by the Department staff to the River Alliance comments concerning the reserve capacity in the prior draft TMDL, the process for determining where this reserve is allocated is still unclear. Clarity on the priorities and decision-making process would strengthen this section and ensure that permit holders could better understand how new or increased discharges will be addressed. *(Stewards of the Dells of the WI River)*

Response: The flexibility in apportioning reserve capacity is best illustrated by example. In this hypothetical example the watershed has four reaches and each reach contributes varying amounts of reserve capacity.



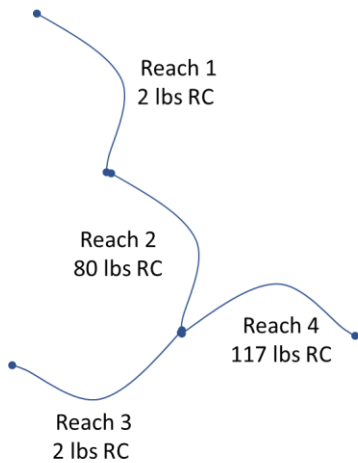
Reach	Base Case Lbs./yr.
1	42
2	120
3	32
4	157
Σ RC	351
Discharge A	0
Discharge B	0
Σ RC + Discharge	351

Because reserve capacity is additive as you move downstream, the total reserve capacity available at Reach 4 is 351 lbs./yr. Facility A, a new discharge, wishes to locate in Reach 4, and it has been determined that they are eligible for 120 lbs./yr. of reserve capacity. Since there are four reaches, 30 lbs./yr. of reserve capacity could be taken from each one, resulting in a new distribution of reserve capacity:



Reach	Base Case Lbs./yr.	First Discharge Lbs./yr.
1	42	12
2	120	90
3	32	2
4	157	127
Σ RC	351	231
Discharge A	0	120
Discharge B	0	0
Σ RC + Discharge	351	351

Sometime later, Facility B wishes to locate in Reach 3, and it has been determined that they are eligible for 30 lbs./yr. of reserve capacity. Since Reach 3 is a headwater reach, any reserve capacity used must come from that reach. To account for this new discharge, the 30 lbs./yr. of reserve capacity from Reach 3 used to accommodate the discharge from Facility A can be reapportioned among Reaches 1, 2 and 4 to allow for Facility B to use 30 lbs./yr. of reserve capacity in Reach 3:



Reach	Base Case Lbs./yr.	First Discharge Lbs./yr.	Second Discharge Lbs./yr.
1	42	12	2
2	120	90	80
3	32	2	2
4	157	127	117
Σ RC	351	231	201
Discharge A	0	120	120
Discharge B	0	0	30
Σ RC + Discharge	351	351	351

This approach, while requiring more sophisticated tracking to ensure that no reach is over allocated, allows for maximum flexibility in distributing reserve capacity to new and expanding discharges.

42. We believe reserve capacity (RC) should not be used for existing Non-Contact Cooling Water (NCCW) discharges or Concentrated Animal Feeding Operations (CAFO) discharges. (See references on page 81, Section 6.4.2 last sentence: using reserve capacity for NCCW; and page 86, Section 6.6 using reserve capacity for CAFOs treatment systems.) (*Wisconsin River Discharger Group*)

Response: Because of the uncertainty in the loading from noncontact cooling water discharges in this TMDL area covered by general permit WI-0044938, the department acknowledges that there may be a limited number instances where the wasteload allocation for general permits is insufficient to address all activities covered by general permits.

During the development of the TMDL, noncontact cooling water discharges from individually permitted facilities were accounted for in the development of their wasteload allocations. In cases where the discharge of NCCW resulted in a net discharge of phosphorus to surface waters, and the baseline phosphorus concentration exceeded the local water quality criterion, percent reductions were applied to those discharges with a lower bound for the reduction being the local water quality criterion. In cases where the baseline concentration was less than the local water quality criterion, no reductions were required. Prior to accessing reserve capacity any noncontact cooling water discharge would be subject to the same process and reductions as individually permitted facilities. Please see the response to #39 regarding reserve capacity and CAFOs.

43. Existing NCCW discharges should pursue other reductions for total P at the facility and resort to RC use only if no other feasible options are available and substantial economic hardship to reduce the TP load in the NCCW can be demonstrated. (*Wisconsin River Discharger Group*)

Response: Noncontact cooling water discharges from individually permitted facilities were accounted for in the development of their wasteload allocations. In cases where the discharge resulted in a net discharge to surface waters, and the baseline concentration exceeded the local water quality criterion, percent reductions were applied to those discharges with a lower limit for the reduction being the local water quality criterion. In cases where the baseline concentration was less than the local water quality criterion, no reductions were required. Prior to accessing reserve capacity any noncontact cooling water discharge would be subject to the same process and reductions as individually permitted facilities. In cases where there is a conversion from a general permit to a specific permit for these discharges, they would be subject to the same process and potential reductions as individually permitted facilities.

44. CAFOs production areas are not assigned an allocation by the TMDL report, and thus, should not have access to RC reserved for allocated sources. CAFOs have many options to reduce TP loading elsewhere in their operations, such as install BMPs, trade with other agricultural (non-point) producers, etc. Agricultural sources account for the majority of TP loading in the watershed and these operations have more load reduction options available to them in their operations than other types of dischargers. *(Wisconsin River Discharger Group)*

Response: Please see the response to #40 regarding reserve capacity and CAFOs.

45. The RC should be held for municipalities and industries that need to expand to serve their communities and that are being forced to reduce their TP loads through permits with compliance schedules. *(Wisconsin River Discharger Group)*

Response: Reserve capacity is intended to provide wasteload allocation for new or expanding industrial, CAFO, or municipal WPDES permit holders for necessary economic and social development. These activities may not always occur within the service areas of existing wastewater treatment facilities. For example, there may need to be provide wastewater treatment to unsewered rural communities to correct groundwater contamination problems. In addition, there are over 30 individually permitted municipal and industrial facilities that discharge via land application/land treatment, and numerous facilities that discharge industrial wastes under appropriate general permits, expansion at any of these facilities may result in a need for a surface water discharge. Restricting reserve capacity to the permittees already given allocations under the TMDL could unduly restrict growth or correction of groundwater contamination issues. Under the procedures laid out in Section 6.6 of the TMDL and ch. NR 207 Wis. Admin Code, any new discharger must demonstrate the need for the discharge, and will evaluate conservation measures, recycling measures, and other pollution minimization measures. Finally, new discharges will need to meet effluent limitations at least as stringent as existing dischargers and may be subject to more stringent limitations based on local water quality conditions.

46. The RC discussion is silent on reduced or eliminated discharges. The TMDL report should state the process for reduced or eliminated discharges. Capacity that becomes available in this manner from point sources should be solely reserved for point source use. (*Wisconsin River Discharger Group*)

Response: Pursuant to 40 CFR 122.41(g) and s. NR 205.07(1)(c), Wis. Adm. Code, a WPDES permit does not convey any property rights of any sort nor any exclusive privilege. Distribution of reserve capacity or surrendered wasteload allocations does not require re-opening of the TMDL; rather, the permit process can be used for reserve capacity assignments. Reserve capacity and wasteload allocations are for point sources or to account for sources not originally allocated in the TMDL. Reserve capacity and wasteload allocations are not available to nonpoint sources.

47. Section 11 describes an “implicit” margin of safety achieved through use of conservative assumptions. Given the relatively large adjustments to the nonpoint source loads used in the SWAT modeling, a specific margin of safety should be considered. (*Wisconsin’s Green Fire*)

Response: The adjustments to the non-point source loads reduce bias to a minimum, to the extent that it would be difficult to determine if any remaining error is conservative, and therefore a representation of an implicit margin of safety. We are more confident that the estimate of the ratio between controllable and non-controllable sources is conservative (non-controllable is likely overestimated). See response to comment 8 for further detail.

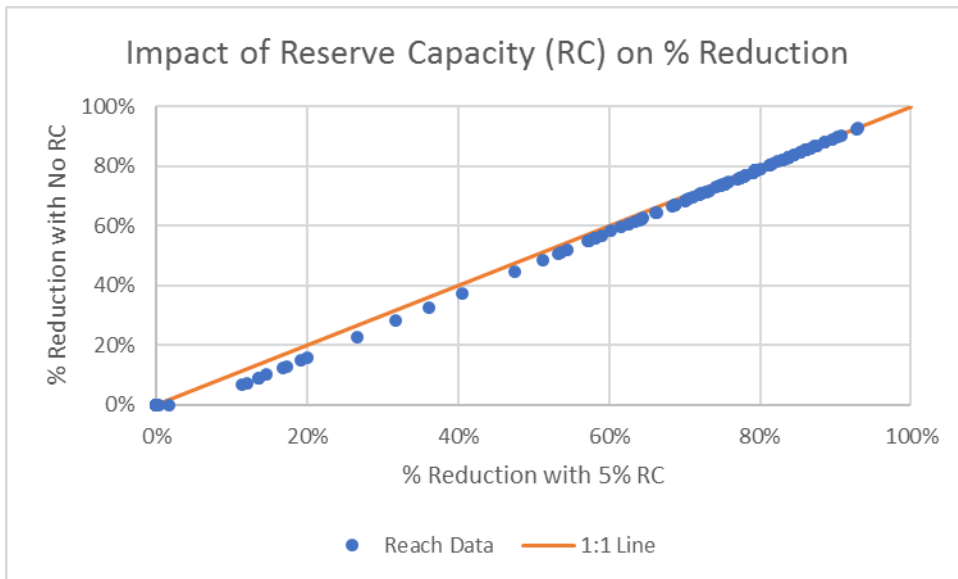
48. Section 12 mentions using a 5% reserve capacity without any explanation as to how the reserve capacity was determined. Use of any reserve capacity likely results in a greater control of agricultural nonpoint sources (lower load allocation) than if there was no reserve capacity. The report provides several examples of how reserve capacity might be used. These examples do not mention the very important need for municipalities to correct groundwater contamination problems through extension of service to unsewered areas or conversion of municipalities discharging to groundwater to new surface water dischargers. The text of the TMDL report should discuss the need for a 5% reserve capacity, especially how it impacts the agricultural nonpoint source load allocation. The examples of uses of reserve capacity should include municipalities taking action to correct groundwater contamination problems. (*Wisconsin’s Green Fire*)

Response: Response: The department acknowledges that the need to correct groundwater contamination problems is one of the key considerations for including reserve capacity in the TMDL. As noted in the report, dischargers will not be given a portion of the reserve capacity unless they can demonstrate a need for a new or increased wasteload allocation. Cost-effective solutions to correct groundwater contamination will be determined through the facility planning process. Facility planning assesses the condition of a sewerage system, establishes a need for improvement, evaluates options, and identifies the cost-effective alternative. The cost-effective alternative is that which results in the expenditure of the minimum total resources costs over the planning period. The total resources costs include monetary costs, environmental and

social considerations, and other non-monetary factors. However, correction groundwater contamination may not require accessing reserve capacity because there are other more cost-effective solutions. Therefore, projects to address groundwater contamination would not automatically granted access to reserve capacity.

A reserve capacity of 5% was selected after evaluating the impact of different reserve capacity amounts on overall reductions and the amount of viable reserve capacity created. A reserve capacity of 5% was selected because it had minimal impact on overall reductions and afforded a meaningful amount of reserve to account for new, expanding or potentially missed dischargers.

Because reserve capacity is calculated as 5% of the reduced controllable load, the impact of reserve capacity is at its greatest when the needed reductions are small and relatively easy to achieve. For example, in Reach 2 where the TMDL (based on current criteria) calls for a 11% reduction in loading, removal of reserve capacity would change the needed reduction to roughly 7%. Alternatively, in Reach 76 where a the TMDL calls for a 79% reduction in loading, removal of reserve capacity would change the needed reduction by only 1% to roughly 78%. The following graph depicts the impact of elimination of 5% reserve capacity on the needed reductions.



49. The TMDL does not mention the fate of surrendered wasteload allocation when a facility ceases to operate. It is our understanding that the process that will be used is explained in the DNR TMDL implementation guidance. <https://dnr.wi.gov/topic/tmdls/implementation.html>. The existence of a procedure for handling surrendered wasteload allocations and its web location should be referenced either in section 6.6 or 7.6. (*Wisconsin's Green Fire*)

Response: Surrendered WLA, if not used by another facility, can be placed in reserve capacity as outlined in TMDL implementation guidance maintained by the DNR.

50. MEG requests that reserve capacity allocations should be specifically noted in the TMDL for use by point sources and not for nonpoint sources. In order to achieve water quality improvements,

nonpoint source reductions from the baseline conditions must be met. Changes to point source allocations, on the other hand, would have an insignificant impact on water quality. Thus, the reserve capacity should be limited to use by point sources. *(Stafford Rosenbaum on behalf of Municipal Environmental Group-Wastewater Division)*

Response: Reserve capacity is for point sources to address new or expanding discharges or to account for sources not originally allocated in the TMDL. Reserve capacity is not available to nonpoint sources.

WQT/AM/MDV Comments

51. Multi-Discharger Variance (MDV) for total phosphorus – NCWSC believes there is merit in modifying the current MDV program or creating new MDV-like program that would allow MS4s to buy into a county-led program to implement cost-effective agricultural BMPs. In either case, the program would be set up to be a permanent option. The MDV-like program would be free of credit thresholds, trade ratios and monitoring requirements and would generate additional funding for the nonpoint source program. *(North Central Wisconsin Stormwater Coalition)*

Response: The MDV is a variance option, good for a limited number of permit terms, for permitted wastewater dischargers that contains interim effluent limits and other requirements that are not consistent with implementation approaches used for permitted MS4s. In addition to water quality trading and participating in an approved adaptive management plan, which is free of credit thresholds and trade ratios, permitted MS4s are afforded implementation flexibility through the TMDL Implementation guidance and permit requirements. An MDV-like program would likely complicate this existing flexibility.

52. The TMDL report defines loads from forest and wetlands as uncontrollable loads for purposes of setting load and wasteload allocations. The loads from forest and wetland may be controllable and may turn out to be less costly to control, compared to trading options restricted by widespread interim water quality trading limitations. The WDNR should assure that this TMDL does not prevent point sources from trading with these “uncontrollable” sources. We suggest the WDNR add a subsection in the implementation section stating that these sources are defined as uncontrollable for purposes of setting load and wasteload allocations, but, this definition is not intended to prohibit trading with these sources. WDNR should also provide a credit threshold for these sources as a part of this report. *(Wisconsin River Discharger Group)*

Response: The TMDL did not apply reductions to background sources; however, water quality trading can occur with these sources. Existing practices in the water quality trading guidance that could be applied to background sources include streambank stabilization and gully stabilization.

53. MEG appreciates DNR's creation of Appendix O regarding adaptive management options in the TMDL area. However, the issue remains that with municipal dischargers potentially facing

extremely stringent TMDL based limits, the limited availability of practical compliance options is a significant challenge. One major hurdle for trading under the Wisconsin River TMDL is that it appears that point sources would not be able to obtain credits from nonpoint source for reductions unless such reductions are below a PI of 1 (in most areas) rather than the NR 151 standard of a PI of 6. This significantly reduces the credits available for trading in the TMDL area and will result in trading being an unrealistic compliance option for most municipal permittees. Simultaneously with this TMDL process, DNR should reevaluate restrictions on trading and adaptive management in order to provide more flexible compliance options for point sources. Without such flexibility, municipal dischargers are likely to face substantial costs for facility upgrades well into the future that will not result in significant water quality improvement. (Stafford Rosenbaum on behalf of Municipal Environmental Group-Wastewater Division)

Response: The department developed its trading program in a manner to ensure consistency with the Clean Water Act, United States Environmental Protection Agency (USEPA) guidance (USEPA 2003, 2004 and 2007) and s. 283.84, Wis. Stats. USEPA's Trading Policy states that where a TMDL is in place, the load allocation serves as the threshold for nonpoint sources to generate credits. The load allocation established under the TMDL defines the nonpoint source load reductions necessary to achieve water quality standards. The wasteload allocation established under the TMDL defines the point source load reductions necessary to achieve water quality standards.

USEPA will not support a trading program that allows non-point sources or point sources to sell credits if the discharge is contributing to water quality impairment; therefore, both nonpoint and point sources should meet their allocations before generating credits. This does not mean that all nonpoint sources in a watershed to meet the aggregate load allocation for a single nonpoint source to participate in trading, rather the individual source must be meeting their portion of the allocation before generating credits. This approach ensures that progress is made toward water quality standards with each trade. It is also consistent with the approach used in a point source to point sources trade where the credit generator must discharge at levels below their individual wasteload allocation to generate credits for their trading partner.

USEPA will not support trading activity that would delay implementation of a TMDL or that eventually results in the combined point source and nonpoint source loadings to exceed the cap established by a TMDL. To that end, the department has developed a trading program that allows for interim credits and long-term credits. Interim credits are generated by load reductions that achieve the credit threshold and are generated only when the current pollutant load exceeds the applicable load allocation. Generating interim credits does not delay implementation of the TMDL as the nonpoint reductions that take place under the trading program may not have taken place as quickly through other nonpoint implementation programs. Long-term credits are generated by load reductions obtained below the load allocation credit threshold, which ensures that the combined point source and nonpoint source loadings meet the TMDL requirements.

*USEPA (U.S. Environmental Protection Agency). 2003. Water Quality Trading Policy. U.S. Environmental Protection Agency, Office of Water. Washington, DC.
www.epa.gov/owow/watershed/trading/finalpolicy2003.pdf.*

USEPA (U.S. Environmental Protection Agency). 2004. Water Quality Trading Assessment Handbook. EPA-841-B-4-001. U.S. Environmental Protection Agency, Office of Water, Washington, DC. www.epa.gov/owow/watershed/trading/handbook/.

USEPA (U.S. Environmental Protection Agency). 2007. Water Quality Trading Toolkit for Permit Writers. EPA 833-R-07-004. U.S. Environmental Protection Agency, Office of Wastewater Management, Water Permits Division, Washington, DC. <http://water.epa.gov/type/watersheds/trading/WQTToolkit.cfm>.

54. Reductions in non-point contribution will have the largest impacts on overall water quality and attainment of TMDL goals. However, current regulatory structure has not achieved desired phosphorus reductions from non-point contribution.

A recommended path to achieve the goals of significant non-point phosphorus reductions in the TMDL would be to leverage and streamline the MDV Watershed Projects and Water Quality Trading (WQT) initiatives of point sources. Through these efforts DNR can achieve significant non-point reductions in phosphorus at a much lower cost to point sources while providing benefits all parties (i.e. point source, non-point and environmental groups). This approach would have a higher chance of success in achieving the goals of the TMDL with additional regulatory action.

To fully leverage WQT, DNR must recognize the opportunity and value of reductions below the performance standard and above the TMDL allocation threshold. These credits would be identified as Below Performance Standard Credits or BPS Credits and could be simply defined by DNR. The BPS Credits would carry a trade ratio of 2:1. Additionally, BPS Credits would remain valid as long as the contract is in place between the point and non-point participants and BMP's remain in practice. This approach would replace the current interim credits which survive only one permit cycle and generate disincentive for point sources. Establishing BPS Credits would eliminate uncertainty around credit availability for trading pre and post TMDL approval, negate concerns with interim credit expiration, remove point source need to continually find new trading partners every permit cycle, secure long-term phosphorus reduction via contract and enable non-point producers to quickly monetize their reductions. The certainty afforded by the new BS Credits would kick-start MDV Watershed and WQT projects resulting in attainment of TMDL non-point reductions along a much faster timeline than current regulatory structure. Additionally, the creation of BPS Credits would sustain phosphorous reduction by eliminating the opportunity for non-point producers to enter contracts for reductions on portions of their operation and when the contract expires return to the previous practices that push back toward the performance standard. The goal is continual reduction of phosphorus loads from entire operations versus segments of an operation.

DNR must also expand criteria for non-point reductions below TMDL allocations and recognize these reduction with not exist in the same quantity ad BPS credits, are harder to achieve by a non-point source and will likely cost more to generate. As a result, DNR must afford these credits a 1.2:1 trade ratio. Point sources will likely pay a premium for these credits recognizing the factors above, but also to reduce the total cred purchase requirements to the point source.

Non-point sources will be motivated to attain the premium price for the Below Allocation Credits (BA Credits) and will implement BMP's required to generate the BA Credits resulting in significant reductions required by the TMDL.

Non-point phosphorus reduction is generally far more cost effective than point sources reduction and offers a much larger reduction opportunity. For example, Marathon City has an annual phosphorus contribution of 609 lbs to the Big Rib River and represents less than 1% of the total load in the river. Based on the draft TMDL, Marathon City must reduce P load by 580 lbs to 220 lbs annual or 407 lbs to 393 under the site-specific criteria.

A review of the total cost per pound of the phosphorus reduction options shows that the physical plant approach results in a capital cost greater than \$9,000 per pound of phosphorus. The MDV watershed cost per pound is projected at approximately \$50.20 per pound. Additionally, the 20-year total cost of the MDV solution would be about \$514,000 which is over \$304,000 more than the first 2 years of debt payments on the 20-year load required for the physical inside the fence plant solution. It should be noted that the EPA approved MDV is only for 10 years and over 1 year of that time has elapsed since EPA approval. DNR must allow full conversion of credits generated under an MDV Watershed Project to credits under water quality trading for this to be a feasible compliance option. Additionally, point sources with approved MDV Watershed Projects should have those projects automatically converted to Watershed Trading Plans when the MDV period expires.

DNR should work to eliminate barriers to implementation of significant non-point phosphorus reduction via MDV Watershed Projects and Water Quality Trading. Leveraging of these opportunities avoids the barrier of cost sharing required under traditional regulatory framework and the historic lack of funding of cost share programs and allows for faster implementation. To be feasible the implementation timeframes must be with the same time requirements of point source compliance schedules. Endorsement of this approach by DNR would achieve exponentially greater phosphorus reduction through non-point engagement at a fraction of the cost when compared to projections of point source facilities with physical inside the fence solutions. Adoption of these recommendations would provide more surety for point sources considering trading, advance the phosphorus reduction timeline through adoption of in-field BMPs and create revenue opportunities for non-point producers to offset BMP costs. (*Marathon City*)

Response: See Appendix N and Appendix O for information generated through the TMDL development process that is relevant to water quality trading and adaptive management.

This comment will be forwarded to the wastewater program, which establishes the requirements for phosphorus compliance options. Please note that the MDV, adaptive management, and water quality trading are supported by state statutes, administrative codes, and US EPA approved guidance. The TMDL is not the appropriate mechanism to make changes to state statutes, administrative codes, and US EPA approved guidance; rather TMDLs must adhere to existing requirements.