Upper Mississippi River Basin Association
Water Quality Task Force

September 29-30, 2015
Davenport, Iowa

Meeting Summary

Participants

Gregg Good	Illinois EPA
John Olson	Iowa DNR
Glenn Skuta	Minnesota PCA
Mohsen Dkhili	Missouri DNR
Brian Weigel	Wisconsin DNR
Shawn Giblin	Wisconsin DNR
Linda Holst	US EPA, Region 5
Kelly Warner	USGS, Illinois Water Science Center
Jeff Houser*	USGS, Upper Midwest Environmental Sciences Center
John Manier	USGS, Upper Midwest Environmental Sciences Center
Michael Brennan	National Great Rivers Research and Education Center
John Sloan	National Great Rivers Research and Education Center
Brent Earley	Iowa American Water Company
Greg Swanson	City of Moline
Susan Heathcote	Iowa Environmental Council
Dave Hokanson	UMRBA
Matt Jacobson	UMRBA

**Joined the meeting by phone.*

Call to Order and Introductions

The Water Quality Task Force (WQTF) was called to order at 1:06 p.m. on September 29, 2015 by Chair Glenn Skuta. Introductions by all participants followed.

Approval of Previous Meeting Summary

Mohsen Dkhili asked that the notes of the June 2-3, 2015 meeting be clarified on page A-15 to indicate that the *provisional assessment methodology* document will be completed by July 1, 2015. He also noted that in the last sentence of the same paragraph the word "text" should be corrected to "test." Hokanson said these changes would be made in the final version of the meeting summary. Gregg Good motioned to approve the notes, with the incorporation of the changes requested by Dkhili. Brian Weigel seconded and the motion was approved by voice vote.

Nutrients

Compilation of UMR State Nutrient Loss Reduction Strategies

Dave Hokanson walked the Task Force through the updated summary of UMR states' nutrient loss reduction strategies as included in the meeting packet. He asked for the WQTF's feedback on both the content and format of the summary document. Skuta suggested that the document be made available via UMRBA's website, to enhance its availability and usefulness. Dkhili said it will be important to track updates to the states' strategies and keep the document current.

Good noted that Illinois has put together a work group to examine the potential development of new numeric nutrient criteria. Weigel said Wisconsin is undergoing a review of its TMDLs in light of its statewide nutrient reduction strategy. Dkhili said Missouri is working to prioritize watersheds at the 8 digit HUC level and has also expanded nitrogen and phosphorus monitoring for wastewater treatment plants.

Minnesota Buffer Initiative

Skuta gave a brief overview of the status of Minnesota's buffer initiative. He noted that the buffer legislation passed in Minnesota calls for a 50 foot average (and 30 foot minimum) buffer width around public waters and a 16.5 foot minimum width for ditches within the benefited area of public drainage systems. Skuta said there is also a provision for alternative approaches that can be applied for both public waters and ditches. He explained that Minnesota DNR is currently mapping waters that will be subject to the buffer requirement. Mapping is to be completed by the summer of 2016 and requirements for buffer installation will begin to apply (for public waters) in November 2017. Installation on ditches will be required by November 2018.

Dkhili asked whether the requirement also applies to lakes or if it is limited to flowing waters. Skuta replied that it is primarily applicable to flowing waters. He further explained that local soil and water conservation districts are primarily responsible for enforcement of the buffer requirement. Skuta said a $500 administrative penalty can be applied for non-compliance and state program funds can also be withheld for failure to implement.

In terms of funding, Skuta said $650,000 has been allocated to Minnesota DNR to complete mapping and a total of $5 million has been provided to the Minnesota Board of Water and Soil Resources (BWSR) to support local implementation of the initiative. He said other existing program funds (e.g., CREP) can also be utilized to install buffers. Skuta showed the WQTF the BWSR web page on the buffer initiative (http://bwsr.state.mn.us/buffers/) where many other resources are available. He observed that, as implementation proceeds, there has been some concern expressed over the extent of waters that are subject to the buffer requirement, particularly in regard to ditches.

Good asked how Minnesota defines the term public water. Skuta replied that his understanding is that it incorporates the ordinary high water mark, but that the buffer requirement then extends from the top of the ridge adjoining the waterway. Moreover, he added, Governor Dayton has addressed this issue broadly by saying that "it's your land but it's everybody's water." Shawn Giblin asked how the 50 foot minimum distance had been selected. Skuta replied that this is seen as a generally effective rule-of-thumb based on existing research rather than a distance established on specific measurements for specific sites. He also noted that many streams in Minnesota are already buffered. As such, many locations may already be in compliance with the buffer requirement.

John Manier asked if there are any stipulations regarding the type of buffer utilized or easements that might be employed. Skuta replied that the buffer simply needs to be perennial vegetative cover. Manier observed that something such as a trout fishing-based easement could potentially open up a lot of access for anglers. Skuta said there's nothing about the initiative that would preclude such easements, but that there may be many other mechanisms employed by land owners in implementing buffers.

Giblin asked whether there is any estimate available of land area potentially affected by the requirement. Skuta replied that this will come out of the DNR mapping effort but in general it appears to be a small percentage of the overall landscape.

Skuta noted that Governor Dayton has said he wants to make water quality a priority for the remainder of his term, but it remains to be seen exactly how that will be expressed. Brian Weigel asked whether there is a work group responsible for carrying out the Governor's vision in regard to water quality.

Skuta replied that there is a Governor's water cabinet that convenes to address topics such as the statewide nutrient reduction strategy and it is likely they are considering next steps in pursuing the Governor's water quality goals.

USGS Continuous Monitoring Initiative

Kelly Warner gave a presentation on USGS' continuous nutrient monitoring initiative, saying that the goal of this effort is to utilize emerging technology in monitoring and tracking nutrient levels (and other parameters) and in particular to capture information regarding what happens during hydrologic events (i.e., high flows and low flows). Warner said one challenge this project hopes to address is to bring together data coming from a variety of continuous monitors – to establish a network of monitors that can more effectively and comprehensively answer the question of whether nutrient concentrations are increasing or decreasing. Specifically, she said the goal of the initiative is to "*Develop a regional network of uniform, consistently monitored, nutrient super gages to provide an unbiased assessment of changes in nutrient loads.*" In this statement, a "super gage" can be defined as "A USGS gage with real-time, continuous measurements of streamflow, physiochemical parameters (pH, SpC, T, turbidity, and DO), at least one chemical constituent, and representative stream sample collection for laboratory analysis and quality assurance." Warner added that there can be super gages for a variety of parameters, but in this case, nutrients are the focus of the super gage network.

Dkhili asked how frequently measurements are taken with "continuous monitoring" technology. Warner replied that this typically means, for nutrients, that nitrate is sampled every fifteen minutes and phosphorus is sampled hourly. She commented that while historically continuous monitoring has been employed on smaller streams and rivers it is now apparent that it also can be utilized effectively on larger rivers.

Warner next described the deployment of super gages in Illinois, done in collaboration with Illinois EPA, where eight sites have been selected for super gage installation, covering the major watersheds in the state. She said the next question is whether the installation of similar stations can be expanded throughout the UMR basin, as well as in the Ohio and Missouri River basins. Warner indicated that, building on current USGS monitoring and infrastructure, there are about 72 potential sites in these basins which have been preliminarily identified as possible super gage locations. She added that, in moving forward on the continuous monitoring initiative, it will be important to pursue consistency in methods and consider long-term continuity of the effort.

Weigel asked what the estimated costs for super gage installation are. Warner answered that to add continuous nutrient monitoring technology on to an existing installation would cost in the neighborhood of $60,000. She noted that this did not include costs of initial calibration.

Warner said USGS is seeking cooperators to participate in the continuous monitoring initiative and as such is interested in hearing from the states in regard to their needs and what opportunities for collaboration may exist. Good said Illinois has incorporated the use of the continuous monitoring nutrient super gages into the implementation of its statewide nutrient reduction strategy and was therefore able to engage in a six year contract to help support the stations.

Holst asked whether results are converted to total nitrogen or provided as nitrate. Warner responded that results are reported as nitrate, rather than total nitrogen. She explained that results are uploaded every 30 minutes, but are considered provisional until QA/QC is complete. Provisional data can be viewed via USGS's Water Watch at http://waterwatch.usgs.gov/wqwatch/.

Skuta said Minnesota's approach has been to focus on a pollutant load monitoring network which includes ongoing monitoring at an extensive number of sites throughout the state. He explained that this network is not as focused on continuous monitoring, but rather takes the approach of collecting grab

samples both on an ongoing basis and during storm events to determine the impact of flows on concentrations/loading. Skuta noted that Minnesota has observed that the bulk of nutrient loading occurs during a small number of storm events. Dkhili asked if loading was then calculated based on grab samples and Skuta confirmed that this is done. In response to a question from Giblin, Skuta said that local staff are paid to go out and collect storm event samples from these locations. Warner asked if nutrient results are from lab-based analysis. Skuta replied that analyses are lab-based. Warner observed that, in USGS' experience, utilizing a continuous monitoring approach increases the confidence in results (i.e., reduces the "error bars" around results) as compared to a grab sample approach.

Spatial and Temporal Dynamics of UMR Phytoplankton Assemblages

John Manier began his presentation by noting that there is relatively little research regarding UMR phytoplankton assemblages, but that this area has become increasingly important given concerns regarding harmful algal blooms the relative frequency of such blooms in portions of the UMR. As such, he explained, the purpose of the research he is presenting is to expand knowledge regarding phytoplankton assemblages, in both a spatial and temporal sense.

Manier explained that this study looked at data collected from 2006 to 2009 in pools 8, 13, and 26 of the UMR. In addition to information regarding he phytoplankton assemblage, physical measurements (Secchi depth, temperature, current velocity) were made and water quality samples collected (for TN, TP, NH4, NO3, SRP, and Si). Phytoplankton samples were collected at a 0.2 meter depth, identified to genus, and counted in units of 100 individuals.

Manier said a total of 46 genera were identified in the phytoplankton analysis across the broader groupings of diatoms, green algae, cyanobacteria, and euglenoids/golden. He explained that spatial differences in distribution were observed across strata, with the greatest differences being between the main channel and backwaters, and the predominance of cyanobacteria increasing in the backwater and impounded areas. Manier also noted that discharge has an impact on phytoplankton assemblages, with increased populations, particularly of cyanobacteria, observed in higher flow years. He said populations did not appear to be nutrient-limited in most cases, with physical factors appearing to be more important in determining the presence of blooms.

Overall, Manier said the leading outcome of this study is perhaps how common cyanobacteria are on the UMR, as cyanobacteria were observed in 96% of the samples collected. He also noted that green algae appear to be declining on the UMR, a possible indication that they are being outcompeted by cyanobacteria.

Hokanson asked whether the patterns observed differ among the three pools studied (8,13, 26) or if they are generally consistent among the pools. Manier replied that, in general, the patterns are applicable across all the pools, though each pool may function somewhat differently. Warner asked whether iron was measured in the study, as this may in some cases be a limiting factor for algal growth. Manier replied that iron was not measured as part of this study.

Michael Brennan asked whether a correlation was observed between chlorophyll-a and biovolume measurements. Manier replied that this had not been yet examined, but indeed a correlation would be expected.

Susan Heathcoate observed that this presentation is very relevant in light of the recent algal bloom on the Ohio River. Good said the cause of the Ohio River bloom is still being investigated, but the factors that preceded it were lots of precipitation early in the season, followed by low precipitation and warm weather. He added that clear water also seems to have helped promote algal growth and that public water systems using the Ohio River have been feeding additional carbon into their treatment train to help address issues associated the algal bloom.

Public Water System Perspectives

Greg Swanson began his comments by observing that detections of microcystin have re-emerged in 2015, indicating that this is likely going to be an ongoing issue for public water systems on the UMR. He said the City of Moline has recently acquired ELISA analysis capability in order to provide a quicker turnaround for results in the event of an algal bloom. Good asked whether this meant Moline is using test strips or has established a lab-based presence. Swanson replied that this is laboratory analysis, as Moline decided against using test strips. Good asked who had purchased the ELISA equipment and Swanson replied that the City of Moline had made the purchase.

Holst asked how quickly ELISA results can be available. Good replied that some time is needed, as the method involves freezing and thawing of the sample.

Heathcote asked about the drinking water advisories recent set for algal toxins. Good and Brent Earley explained that USEPA had recently issued advisories for microcystin and cylindrospermopsin in drinking water as follows:

- 0.3 micrograms per liter for microcystin and 0.7 micrograms per liter for cylindrospermopsin for children pre-school age and younger
- 1.6 micrograms per liter for microcystin and 3.0 micrograms per liter for cylindrospermopsin for school-age children through adults

Good and Holst said the next set of numbers expected from USEPA will be health advisories for recreation.

Earley commented on the potential connection between high pH values and algal blooms, noting that historically high pHs had been observed recently. He also explained that inconsistency among the states in terms of their expectations, recommended methods, and advisory thresholds in regard to algal blooms is a primary reason why Iowa American Water has held off investing in analytical equipment. Earley emphasized that one of his foremost concerns in dealing with algal blooms and toxins is the disparity in approaches among states. Good commented that, on the Ohio River, ORSANCO has taken the lead in supporting collaboration among the states.

Earley said existing treatment was able to take microcystin from above 3 micrograms per liter in raw water down to no detect after treatment during a recent occurrence, so this is an indication that existing systems can provide some level of removal. Weigel asked whether it is known to what level of concentration conventional treatment can be effective in removing microcystin and other cyanotoxins. Earley replied that he is not aware of a specific number, and that it will vary by system, but his general understanding is that a well-run system does have the capacity to perform some removal.
Swanson noted that cyanotoxins and the algae itself are two very different challenges for water treatment. He said conventional treatment, supported by addition of powdered activated carbon (PAC), does appear to have effectiveness in removing cyanotoxins. Oxidation, however, is a two-edged sword as it can be effective in addressing the algae itself, but causes cells to lyse, releasing toxins.

Warner asked Earley to comment further on the relationship observed between pH values and algal blooms. Early replied that there does appear to be some correlation between elevated pH and the presence of cyanobacteria, presumably due to photosynthetic activity. Swanson said Moline has done some work in species identification for algal blooms, finding an increase in the presence of cyanobacteria (from 51% to 72% of total) between two different sampling years.

Hokanson asked whether Swanson and Earley have been in communication with water systems elsewhere on the UMR (outside the Quad Cities) to determine if they have been encountering similar algae-related challenges this year. They replied that they have not had any recent communication with other water systems beyond the Quad Cities.

National Great Rivers Research and Education Center Update

Great Rivers Ecological Observation Network (GREON)

John Sloan reported that the GREON project has successfully deployed seven monitoring buoys on the UMR system over the past year. Jeff Houser noted that two of these are located in UMR Pool 8, with one being in the main channel and one in the backwater of this pool. In addition, Sloan said two buoys have been deployed off of the UMR system *per se*, with one at Lake Decatur and one at Carlyle Reservoir on the Kaskaskia River.

Sloan said one ongoing concern with large river deployment of the buoys is river-borne debris, particularly during flooding events. He added that buoys are also removed for the winter and would soon be taken out of the water until next spring, with their typical deployment period being March through October.

Great Lakes to Gulf (GLTG) Observatory

Michael Brennan said that work on the GLTG application (see www.greatlakestogulf.org) continues and includes incorporation of data produced by the GREON buoys, as described by Sloan. Brennan said the GLTG project is looking to expand the parameters it includes, beyond the current focus on nitrogen-related parameters. He explained that feedback is being sought from partners, including the WQTF, on how to improve and expand the application.

Other Agency/Partner Reports

A few member agencies offered additional reports, as described below.

Minnesota

Skuta said the National Park Service is working on an update to its State of the River Report, which was first released in 2012 and covers the Mississippi River in the Twin Cities area. He said the updated report is expected to be released soon.

USEPA Region 5

Holst noted that USEPA has recently proposed an update to its aquatic life water quality chronic criterion for selenium, with comments being accepted through October. John Olson observed that, if a tissue concentration is included as part of the criterion, the WQTF may want to include tissue measurements for selenium as part of the UMR CWA recommended monitoring plan. Holst said that, while she is not familiar with all the details of the criteria, she is aware that USEPA Headquarters feels that the science behind this proposal is quite strong.

Wisconsin

Weigel said Wisconsin DNR staff have been busy with internal briefings on water quality topics (e.g., TMDLs) as a result of organization changes in the agency that have engaged new individuals in regard to water quality programs. He said work has been proceeding on TMDLs for the Wisconsin and Milwaukee Rivers, with the Wisconsin River TMDL soon being open for comment. Weigel noted that, in combination, these two TMDLs cover 1/5 of the land area of the state. In addition, he said Wisconsin continues to collaborate with Minnesota in regard to the Lake Pepin and St. Croix River TMDLs.

Interstate 305(b) and 303(d) Consultation

Minnesota

Skuta said there are not any changes to the list as presented in the meeting packet. He noted that approval of Minnesota's 2014 list has been held up due to sulfate criteria/wild rice issues, but that 2014 list approval appears to be coming soon. Skuta added that Minnesota will soon begin the process of developing its 2016 list.

Wisconsin

Weigel said Wisconsin DNR has begun work on its 2016 list, and that a draft list should be available for comment soon. Shawn Giblin added that the only expected change for the UMR in 2016 is to extend the total phosphorus impairment down to the Illinois border (adding in UMR Reaches 5 and 6). Weigel asked Skuta whether Minnesota plans to add an impairment in 2016 to match Wisconsin's total phosphorus impairment. Skuta replied that this would likely be the case.

Iowa

Olson reported that Iowa has an approved 2014 impairment list, and is currently working on its 2016 list. He noted that, in determining UMR impairments, Iowa is relying primarily on data made available by Illinois EPA. He noted, however, that there is a disparity in listing for atrazine between Iowa and Illinois in UMR Reach 8, explaining that the two states use different methodologies in looking at the data (i.e., annual average vs. quarterly running average) which may result in this disparity.

Illinois

Good said Illinois has drafted its 2016 listing, which should soon be transmitted to USEPA. He added that Illinois is still awaiting full approval of previous years' listings.

Missouri

Dkhili said the table included in the packet should be modified to include the UMR reach breaks (for Reaches 9-13) within Missouri. Hokanson indicated this change would be made for the next version. Other than this, Dkhili said no changes are expected for Missouri's 2014 listings that would differ from what is provided in the packet.

UMR CWA Monitoring Strategy

Minnesota-Wisconsin Pilot Monitoring

Skuta said Minnesota has funding in place to support the pilot monitoring effort. Weigel indicated this should also be the case for Wisconsin, though he needs to verify the status of approval regarding the use of CWA Section 106 funds for this work. Skuta explained that three labs (Minnesota, Wisconsin, and Metropolitan Council) will be engaged in the processing of water chemistry results for the pilot. Giblin said a split-sampling test will be conducted in November to compare the chemistry results coming from these labs. Skuta noted that the pilot group has decided to use an artificial substrate method for sampling invertebrates during the pilot project, primarily due to the difficulty in detecting response to stressors using the EMAP method. Hokanson added that a Field Operations Manual is being drafted to accompany the pilot, with the intent being that this manual will help capture some of the technical and logistical details not spelled out in the *UMR CWA Recommended Monitoring Plan* itself.

UMR Water Quality Viewer

Matt Jacobson demonstrated the current version of the online UMR Water Quality Viewer, which includes fixed and probabilistic monitoring locations of the UMR CWA monitoring plan, existing

program monitoring locations, and sites recommended for a UMR tributary loading network. Holst said US EPA Region 5 has GIS staff who can assist in providing layers for such an online mapping tool. Brennan noted that the GLTG application now includes load calculations for those locations with continuous nutrient monitoring.

Tributary Loading Network/Tracking Nutrient Loading

Hokanson observed that the UMR CWA monitoring plan's proposed "tributary loading network" has been a challenge to move forward, as it has seemed more likely to be focused on documentation and possible enhancement of existing monitoring, as opposed to a new network *per se*. He added that concept was first proposed by the some members of the WQTF and WQEC before the existence of state nutrient reduction strategies and it may now be the case that individual states are already doing much of what this network was envisioned to do. Weigel said Wisconsin is seeing value in the work coming out of the SPARROW project and also sees an opportunity to influence the placement of monitoring location along the UMR and its tributaries. Olson suggested a likely next step may be to document the states' loading networks and calculations.

Skuta concurred that documenting states current efforts would be beneficial. He suggested expanding the tracking table for states nutrient strategies to include a description of how each state is measuring and calculating nutrient loads. Warner said USGS would be interested in how states are monitoring/assessing the loads leaving their states. She added that looking at states' approaches could help in identifying gaps.

The meeting adjourned for the day at 5:30 p.m. and reconvened at 8:00 a.m. on September 30, 2015.

Total Suspended Sediment Thresholds for the UMR

Shawn Giblin presented regarding recent work to examine relationships between total suspended solids (TSS), light penetration, and aquatic communities on the UMR. He said that, in general, lower TSS improves light penetration, supports healthier aquatic vegetation, and is associated with a greater native fish community biomass. Giblin emphasized that this is an important message to communicate to the public, that clearer water supports better fish communities.

More specifically, Giblin explained that a "breakpoint" of 17 mg/l TSS seems to apply across guilds, where concentrations above 17 mg/l lead to degraded communities and concentrations below 17 mg/l support healthier communities, at least in the UMR's upper pools. He also noted that ecosystem restoration projects can help reduce TSS and appear to have effects beyond the specific project location *per se*.

Giblin suggested that the WQTF consider including the 17 mg/l threshold in its assessment work, as this appears to provide a potential indicator of aquatic life condition, and that this could be realistically applied through Pool 13. Olson asked how this threshold relates to previously proposed thresholds from the UMRCC Water Quality Tech Section (WQTS) and John Sullivan (Wisconsin DNR, now retired). Giblin replied that this work builds on the previous work of Sullivan and the WQTS.

Olson said he sees value in integrating the TSS threshold into the provisional UMR CWA assessment methodology document. He added that is it also promising to know that in-river work via restoration projects can also aid in meeting such a threshold (i.e., it is not totally dependent on what is happening in the larger watershed). Giblin concurred, saying that while there is a very important watershed component to TSS levels, a lot can be done with in-river work. In response to interest from the group, Hokanson said he would look into how TSS reduction is considered in the selection of ecosystem restoration projects.

Skuta asked whether the threshold could be applied to UMR tributaries. Giblin replied that it has been mainstem-specific to date, but the application to tributaries could potentially be examined. Weigel suggested that a two pronged approach may apply, where the assessment looks at both biology (where data is available) as well as the TSS threshold in determining aquatic life condition. Skuta agreed, saying the TSS threshold could be utilized in cases where biological data is not yet available.

Dkhili suggested that an alternative way to establish a TSS threshold would be take all the available data for the UMR and then choose a percentile value at which to set a TSS number. Good commented that there could be value in doing this to see how it compares to the 17 mg/l breakpoint.

Giblin suggested that, to acknowledge the impact of Lake Pepin on sediment, and to be consistent with site-specific standards already established by MPCA, the WQTF may wish to adopt a threshold of 32 mg/l above Lake Pepin and a threshold of 17 mg/l from Lake Pepin to Pool 13. Olson asked what the specific measurement would be for comparison to the threshold. Giblin replied that a summer mean TSS value should be used.

The WQTF agreed to incorporate thresholds of 32 mg/l TSS (above Lake Pepin) and 17 mg/l TSS (Lake Pepin to Pool 13) into the provisional UMR CWA assessment methodology.

UMR Water Quality Data Work Group

Hokanson said the recently-formed water quality data work group has held two calls. Early discussions have focused on near-term and longer-term data management goals, identifying data storage vs. data analysis functions, and hearing from the states and other river-focused programs regarding their current management of UMR water quality data.

Skuta said one upcoming need will be to develop unique identification for data coming from pilot project and any other collaborative, interstate monitoring, so that the data can easily be identified, extracted, and analyzed. Weigel said a likely next step for the group would be to develop a shared template or spreadsheet the states can use in sharing results. Weigel and Holst both commented that creating a shared template would facilitate carrying out a shared assessment per the provisional assessment methodology.

Hokanson observed that the shared data could be held/hosted by UMRBA, GLTG, a single state, or other entity, depending on what would work best for the states' purposes.

UMR CWA Assessment Feasibility Project/Testing Assessment Methodology

Jacobson presented the results of some initial efforts via the "virtual pilot" project to run data through the provisional UMR CWA assessment methodology. He said the initial focus has been on using data from existing fixed sites in UMR Reach 13 (eight total locations) and conducting a recreation use assessment (using *E.coli* and chlorophyll-a data) and a drinking water use assessment (using nitrate data).

For the recreation use, based on the limited data available, Jacobson said Reach 13 would be considered in "poor" condition due to *E. coli* levels (chlorophyll-a met assessment threshold values). Both Good and Giblin observed that this outcome is not surprising and is consistent with their expectations for this reach of the UMR.

Regarding chlorophyll-a, Jacobson asked whether the intent in the methodology is to use corrected or uncorrected (for pheophytin) values. Giblin said while ideally it is best to use corrected values, it is probably not a concern unless numbers are very close to the threshold. Weigel noted that uncorrected

values are possibly more commonly available than corrected. Olson concurred and suggested that for the purposes of the shared UMR assessment, uncorrected values should be sufficient.

For the drinking water use, Jacobson said there were no exceedances of the 10 mg/l nitrate threshold and as such the reach would be considered in "good" condition for the drinking water use (recognizing that only this single parameter was assessed). He did note again that only the fixed site data was used, but there is probabilistic data available throughout the reach from UMRR-LTRM monitoring, noting that this raises the question of how to use existing data in a reach that does not match the location requirements of the monitoring plan per se. Good and Skuta noted that, to date, the drinking water use assessment has been considered primarily as point-based, but it may be worthwhile to bring in other, reach-wide data. Weigel concurred, but added that the methodology itself shouldn't be changed, but rather this additional data should be compiled and considered when the assessment is being conducted.

Jacobson asked the group where they would like to see the virtual pilot and methodology testing process proceed next, whether to look at additional uses/parameters in Reach 13 or proceed to a different reach. Weigel suggested that it may be instructive to have this effort ongoing alongside the pilot monitoring in Reaches 0-3. Skuta concurred and the WQTF in general agreed to focus next work in Reaches 0-3.

Work Planning for 2016

Skuta observed that the WQTF has many potential work areas for 2016, including: 1) harmful algal blooms, 2) Minnesota-Wisconsin pilot monitoring, 3) "virtual pilot" data mining and methodology testing, 4) potentially expanding UMR CWA monitoring to other states/reaches, 5) supporting states' nutrient reduction strategies, 6) integrating TSS thresholds into the assessment methodology, and 7) possibly creating "state of the river" assessment document.

In particular, Skuta asked the WQTF members what the likelihood is of their implementing UMR CWA monitoring in the upcoming year. Olson said new monitoring in Iowa on the UMR is unlikely, but that Iowa is currently updating its monitoring strategy and this is an opportunity to point out the lack of current monitoring on the UMR and the UMRBA-based plans for CWA monitoring on the river.

Good said Illinois is pretty limited in its ability to take on new UMR monitoring due to staffing and funding constraints, noting that the Illinois does not currently have a state budget in place. He noted that even if funds were available, there is pressure to contract out work, rather than having Illinois EPA staff conduct monitoring. Good said monitoring will continue as it has in the past at Illinois EPA's nine stations on the mainstem, but it difficult to envision Illinois taking on more than this in the foreseeable future.
Dkhili said he would like to see Missouri proceed in implementing the monitoring plan, but that funding is currently a limitation.

Weigel said Wisconsin has not considered additional monitoring beyond the current pilot, but that efforts by other states would be helpful in pursuing additional UMR monitoring by Wisconsin. He added that he expects the current pilot project will help inform how and when Wisconsin invests in additional UMR monitoring.

Skuta asked if other states have considered using CWA Section 106 funds to support UMR monitoring, as Wisconsin has done for the pilot project. Good said this is a possibility in the future, though it would mean competing against other statewide monitoring priorities.

Weigel suggested that communication with the UMRBA Board and WQEC seems needed, to emphasize that: 1) the WQTF wants to move forward with monitoring plan implementation, 2) the WQTF expects learn from the pilot in improving how to implement monitoring, and 3) the groundwork needs to be laid

now to support additional collaborative UMR CWA monitoring in the future. Skuta agreed and encouraged all the WQTF members to be in communication with their agency' WQEC member.

Good observed that one of the ongoing challenges is how to make UMR water quality more relevant to the public and decision-makers. He noted that connections to economics, nutrient reduction, and harmful algal blooms may be most relevant for these groups. Good, Giblin, and Skuta all agreed that the WQTF needs to appeal to the UMRBA Board and WQEC for their assistance in reaching out, communicating, and seeking funding for UMR efforts. Weigel suggested it may be helpful to conduct message mapping in regard to UMR water quality.

Skuta said the following appear to be the WQTF's priorities for work in 2016:

- UMR CWA Monitoring Plan Implementation
- Virtual Pilot Data Mining and Testing of the Provisional Assessment Methodology
- Examining the Issue of Harmful Algal Blooms (HABs) on the UMR
- Message Mapping Regarding UMR Water Quality
- Integrating TSS Thresholds into the Provisional Assessment Methodology

With regard to HABs, Skuta suggested that ORSANCO present at the next WQTF meeting regarding the recent algal bloom on the Ohio River. Good agreed, saying that either Greg Youngstrom or Jason Heath could present on this topic. Giblin said he could also present at the next meeting regarding HABs on the UMR. Hokanson asked whether working on a "state of the river" report would be a priority for 2016. Skuta said he felt this was more likely an action item for 2017, after pilot monitoring had been completed.

Hokanson said he would compile the WQTF's priorities for the group's review and then communicate them to the UMRBA Board and WQEC for their consideration during their joint meeting in November.

Next Meeting

The WQTF agreed that its next meeting should take place in February 2016. Hokanson said he would investigate dates and possible locations, and then be in communication with WQTF to schedule the next meeting.

With no further business, the meeting adjourned at 12:12 p.m. on September 30, 2015.