Upper Mississippi River Basin Association
Water Quality Task Force Meeting
January 12-13, 2011
Rock Island, Illinois

Meeting Summary

Participants

Gregg Good	Illinois EPA
Matt Short	Illinois EPA
Roy Smogor	Illinois EPA
John Olson	Iowa DNR
Tom Wilton	Iowa DNR
Will Bouchard	Minnesota PCA
Shannon Lotthammer	Minnesota PCA
Mohsen Dkhili	Missouri DNR
Jim Baumann	Wisconsin DNR
John Sullivan	Wisconsin DNR
Bill Franz	US EPA, Region 5
Ted Angradi*	US EPA, ORD
Brent Bellinger*	US EPA, ORD
David Bolgrien*	US EPA, ORD
Mark Pearson*	US EPA, ORD
Karen Hagerty	USACE
Mike Coffey	US FWS
Bob Buchmiller	USGS
Chris Yoder	Midwest Biodiversity Institute
Peg Donnelly	UMRBA/US EPA, Region 5
Dave Hokanson	UMRBA
Nat Kale	UMRBA
Barb Naramore	UMRBA

**Joined the meeting by phone, first day only.*

Call to Order and Introductions

The meeting of the UMRBA Water Quality Task Force (WQTF) was called to order at 8:05 a.m. by Chair Gregg Good. Introductions of all in attendance followed.

Corrections to Previous Meeting Summary

Dave Hokanson asked whether there were any corrections to the summary of the September 21, 2010 WQTF meeting. Shannon Lotthammer said that some corrections were needed to the discussion on Minnesota's phosphorus standard development. She indicated that she would consult with Will Bouchard on these and then provide corrections to Hokanson later in the meeting. (Note: Corrections were received from Lotthammer and incorporated into final version of summary which is available on UMRBA's web site at http://www.umrba.org/wqtf-summaries.htm.)

Nutrients Discussion

Recap and Reaction to Nutrient Project Work Session

Nat Kale reviewed discussions from the previous day's nutrient project work session, grouping the input received into three main categories: 1) suggested changes to the way certain topics are addressed, requiring some re-writing but no new information collection; 2) suggested expansion of discussions within the existing scope of the project, which may require some new information collection and some new writing;, and 3) suggested additions of entirely new sections/information to the report. He said that one purpose of the discussion today is for the WQTF to provide input on how to respond to these suggestions – i.e., deciding which elements to incorporate and which to set aside for future work.

Bill Franz said some mention of bacteria-nutrient relationships should be made, as requested by NGO representatives. Kale said perhaps the issue could be mentioned fairly briefly, with reference made to research available on the topic. Mohsen Dkhili agreed that a brief discussion would be appropriate, as long as it is made clear that bacteria is entirely separate pollutant and subject to criteria to protect recreational uses, with established protocols for monitoring and assessment. He added that efforts to control nutrients may be helpful in also addressing bacteria. Jim Baumann said that, on the Great Lakes, there has been some investigation of possible links between nutrients and bacteria growth.

Roy Smogor asked if anyone was aware of research regarding the effects of nutrients on heterotrophs. Tom Wilton said there has been some research in this area, as Joanne Burkholder had mentioned the preceding day, and that dissolved oxygen minima may have a relationship to both heterotrophs and autotrophs. Will Bouchard said MPCA is investigating such relationships. John Sullivan said his understanding is that dissolved oxygen drops are largely resulting from algal activity. Bouchard said this understanding is correct. Sullivan said the nutrient-bacteria relationship did then not seem to be a main theme for the report. John Olson concurred and recommended that not too much time be spent on the topic for purposes of the report. Baumann agreed, but said at minimum the report should include what Burkholder had shared with the group.

Hokanson said his understanding of the WQTF's input today is that the nutrient-bacteria issue should be mentioned, likely in the impacts section, but there would not be associated findings or recommendations. Shannon Lotthammer agreed this seemed to be an appropriate approach. Olson suggested that this, and other topics such as drinking water supply issues, could perhaps be addressed in an emerging issues section. Franz agreed, saying that this section could point to areas where further work is needed. Good also commented that he favored an emerging issues section.

Kale identified nitrate impacts as an area where greater time and effort should be dedicated in revising the report. Lotthammer agreed with this emphasis, saying that the preceding day's discussion really brought this out as an area to be addressed in greater detail. Baumann said that nitrate toxicity will become a bigger issue once Minnesota's nitrate criteria are proposed. He said that Minnesota's work in regard to nitrate toxicity is very extensive and goes beyond what is currently available in the literature.

Hokanson and Kale asked what the WQTF would like to see done in the report with other parameters that had been suggested for examination – pH, silica, biological oxygen demand, and total organic carbon.

Sullivan suggested that dissolved oxygen and biological oxygen demand could be discussed together in one section, although he recommended that this not be an extensive section. Wilton suggested the report could address an appropriate monitoring strategy for dissolved oxygen, or at least suggest an optimized approach. Sullivan agreed that this is an important question, but suggested that it might perhaps be a better fit for the aquatic life designated use report or perhaps the proposed UMR monitoring strategy. Hokanson said that, for the purposes of the nutrient report, it might be beneficial to at least mention the need for dissolved oxygen monitoring strategy improvements. Wilton agreed the nutrient report should at least touch on the issue.

Sullivan said an oxygen-related section could perhaps also address the need for continuous monitoring. Kale agreed a reference to continuous monitoring could be included. Good noted that continuous monitoring is part of the new National Great Rivers Research and Education Center (NGRREC) facility at Alton, Illinois.

Kale asked whether statistical analysis of nutrient and related LTRMP data is something that the WQTF would like to see included in the report. Roy Smogor said new statistical analyses probably wouldn't provide more information than is already known and are unlikely to really capture the complexity of interaction. Sullivan said he has done a lot of correlation analysis with LTRMP data and has observed some correlations, particularly in regard to light penetration. But he observed that response can be quite variable.

Good asked whether these types of relationships are important to understand from a standards development viewpoint. Baumann said many of the relationships that could be examined via statistical analysis are already documented in the literature and in Minnesota and Wisconsin's criteria development work. Wilton said he had concerns with the extension of findings from the Minnesota and Wisconsin area to other areas of the UMR, as the relationships may not hold true throughout the UMR. Kale said it seem that an appropriate approach would be to reference existing literature regarding relationships, making clear where these relationships have been established

Hokanson said that, given the amount of work requested on the nutrient report, and the amount of time that Kale has already put into this project task (as opposed to the biological assessment guidance), it will be necessary to rebalance Kale's time allocation, which was originally to be split evenly between the two project tasks. WQTF members indicated that this type of rebalancing should not be problematic, but requested that UMRBA send an email documenting the reallocation.

Updates on States' Nutrient-Related Efforts

Good gave a brief update on Illinois' recent "nutrient summit," as well as related followup activities. He indicated additional meetings would be taking place as an outgrowth of the summit.

Baumann said Wisconsin DNR will be having a meeting tomorrow (1/13/11) to discuss what nitrate numbers might be potentially appropriate for criteria, based on an examination of existing data. Baumann continued by saying US EPA had approved Wisconsin's phosphorus rule, including phosphorus criteria, on December 30, 2010. He said that, while municipalities are supportive of Wisconsin's approach, some industry sectors are not and legislation may be proposed to prevent implementation of Wisconsin's rule until all Region 5 and 7 states have similar criteria in place. Dkhili asked whether, given this situation, Wisconsin DNR intended to use the new criteria for 305(b) and 303(d) purposes. Baumann replied that it is currently uncertain exactly how all the factors in play will affect implementation.

Smogor said US EPA Region 5 has asked for nutrient and biological data from Illinois and Indiana. He said Ted Angradi of US EPA-ORD will be examining the data sets to look for relationships between nutrient and biology. Smogor said Angradi will be conducting a variety of correlational analyses, including regression tree and breakpoint analyses. Baumann said Wisconsin has done many of these types of analyses. According to Baumann, a primary challenge is that a range of conditions is needed to best establish relationships – and that correlations can be hard to derive in relatively homogenous conditions. Smogor agreed, citing the example of relatively few low nutrient waters in Indiana. He said the types of analyses planned by EPA will indeed determine a breakpoint, but it will not necessarily be a significant or biologically important breakpoint.

Lotthammer said the technical support documents for Minnesota's nutrient standards efforts are now available on the internet and will remain available through the summer, with public notice of rulemaking expected in the fall. She added that legislation to limit or suspend rulemaking may be forthcoming in Minnesota. Lotthammer also said she was checking into whether Minnesota's nitrate standard will be expressed as total nitrogen.

Good said he had heard there may be a workshop to discuss Wisconsin's phosphorus rule package. Baumann said US EPA Region 5 is attempting to host this, but there is not a budget to support it, and it therefore may take place as a webinar. He added that many of the questions being asked already have written answers and, as such, US EPA is putting together a question and answer document.

Dkhili reported that Missouri continues to work on nutrient criteria and that the state's Clean Water Commission approved lakes criteria in 2009. He said Missouri DNR was also working on criteria for small streams, but that this activity has been suspended pending action by US EPA on the lakes criteria. In response to a question from Franz, Dkhili said US EPA Region 7 has not yet provided any feedback on Missouri's lakes criteria and did not attend a stakeholder meeting on the topic.

Wilton reported that Iowa's proposed lakes criteria are moving forward and are on the Iowa Environmental Protection Commission's agenda for next week. He said these criteria are recreation-focused and do not include specific phosphorus or nitrogen numbers. Rather, he continued, they include parameters such as Secchi depth. In response to a question from Baumann, Wilton said the proposed lakes criteria would apply to reservoirs and impoundments.
Wilton said that, beyond its lakes criteria, Iowa is working on issues related to stream criteria via a technical committee, but noted that even basic issues such how to characterize data have been a challenge. He said the intent in addressing criteria for flowing waters is to start with wadeable streams and then work on larger rivers, though it is not known whether this will include the UMR. Wilton said recommendations from the technical committee may be available in March 2011.

Sullivan asked if and how the states are dealing with wetlands and nutrients, noting that UMR backwaters may be a closer fit for wetland-focused standards than lake or river standards. Baumann said wetland-focused nutrient standards are on Wisconsin's far horizon. Lotthammer said Minnesota has IBIs for wetlands, but does not have criteria *per se*. Dkhili said Missouri does not attempt to assess wetlands and does not have a classification that includes wetlands. Olson said Iowa does not currently have a classification for wetlands, and is working on distinctions between shallow lakes and wetlands. He added that Iowa has begun doing some wetland monitoring and results indicate impairment in many of those monitored so far. Olson said these wetlands will be added to Iowa's 303(d) list. Dkhili asked whether Iowa has specific wetlands-applicable criteria. Olson said the state's lakes/wetlands criteria apply, and noted that DNR has some flexibility in its methodology for listing wetlands. Dkhili said it is possible for Missouri to list based on narrative criteria. Olson replied that this is essentially Iowa's current approach.

Outcomes of November 2010 UMRBA Board/WQEC Meetings

Hokanson reviewed the outcomes of the November 16-17, 2010 meetings of the UMRBA Board and Water Quality Executive Committee (WQEC). He said Donnelly and Kale presented to the WQEC on their aquatic life designated use and nutrient projects, respectively. Both presentations were well received by WQEC members, who expressed satisfaction with the projects.

Hokanson highlighted requests for input made by U.S. EPA Region 7 Water, Wetlands and Pesticides Division Director Art Spratlin during these meetings. He said Spratlin had sought input from the WQEC in two areas: 1) water quality strategies and priorities for the Mississippi River which would be shared with Region 7 Administrator Brooks for his use in conversations with other Regional

Administrators and U.S. EPA Headquarters, and 2) water quality-related science needs to be shared by Region 7 with U.S. EPA's Office of Research and Development (ORD), in the context of Region 7's role as liaison to ORD.

Hokanson explained that the WQEC, in consultation with UMRBA's Board, would be responding to Spratlin's first request in the form of a letter to Regional Administrator Brooks. He said this letter is currently in draft and is being reviewed by both the WQEC and the Board. Hokanson noted that themes in the draft letter include:

- Support for the Regional Administrators' interest in raising the profile of the Mississippi River.
- The important role of the Regional Administrators in sustaining a vision for the Mississippi River.
- The need for enhanced, Clean Water Act-focused, monitoring of the UMR.
- The states' interest in developing a shared, UMR-focused approach to reducing nutrient impacts.

Hokanson said UMRBA is awaiting additional information from Region 7 before crafting its response to Spratlin's request regarding science needs. Hokanson did note, however, that needs identified by the WQEC included extrapolation of LTRMP data, support for the continued implementation of biological assessment approaches, and nutrient-related research. Dkhili commented that extrapolation of data was potentially a broader issue than just LTRMP data, as U.S. EPA has sought to extend site-specific impairments, such as the localized lead and zinc impairment at Herculaneum, to entire river reaches.

Hokanson reported that the WQEC discussed potential topics for cross-programmatic workshops under the 604(b) agreement and expressed a strong preference for focusing on nutrients. Further, the WQEC had suggested holding two similar workshops in different locations to facilitate attendance.

Finally, Hokanson mentioned that the WQEC had also used part of its meeting time for a discussion with members of the Mississippi River Collaborative, a group of NGOs funded by the McKnight Foundation and focused on Mississippi River water quality issues. He described the NGO discussion as very positive, with an emphasis on nutrient issues. Naramore commented that Todd Ambs will be in a unique position to support any ongoing discussions with NGOs, as he had recently left Wisconsin DNR (where he served on both the UMRBA Board and WQEC) and now is President of River Network.

Planning for Cross-Programmatic Workshops

Hokanson requested input from the WQTF regarding the content of the cross-programmatic workshops, within the WQEC's general direction for two similar workshops focused on nutrient issues. He reminded the WQTF that, since these workshops would be one time events, they may need to be structured differently than other recent efforts, which have provided more than one opportunity to bring participants together.

Franz and Mike Coffey suggested that the Mississippi River Health Watersheds Initiative (MRBI) could be a topic for the workshops. Good and Naramore suggested that the approach of Illinois' recent nutrient summit could be followed. Good said that, in particular, the first day of the summit might provide some insight into topics for these workshops.

Good asked Coffey to comment on why nutrients are important from the Fish and Wildlife Service's perspective. Coffey explained that nutrient interactions with biota are key, as well as the implications these interactions have for sound resource management (e.g., effects of river projects to restore connectivity).

Good and Franz said water suppliers' issues could perhaps be part of the workshop agenda.

Smogor suggested that the workshops could focus on nutrient standards and the pros and cons of nutrient criteria specifically. Good said an exclusive focus on standards would be too narrow. Lotthammer suggested that an update regarding the Hypoxia Task Force's work should be included as a way of fostering connections with that group's efforts. Franz said he could likely find someone to speak about the Gulf Hypoxia effort and also suggested that Dale Robertson provide an update on SPARROW modeling efforts.

Smogor asked whether the workshops would focus more on science issues or on the sharing of perspectives. Good replied that he envisioned them more in the realm of sharing perspectives. Donnelly said part of the WQEC's thinking in having two workshops was to facilitate engaging agriculture interests in the discussion. Dkhili said that, in terms of encouraging participation, Hannibal might be a better location than St. Louis. He added that it is very important to clearly articulate the intended purpose and benefits of the workshops.

Smogor commented that, at least in part, the workshops could help educate stakeholders about how nutrients fit into CWA programs. Matt Short said similar efforts by Illinois EPA to engage stakeholders on nutrient issues have been helpful. Coffey said another workshop objective could be to explain the importance of Gulf Hypoxia, acknowledging that this is not necessarily a driving issue from a local perspective.

Naramore said it is important to decide if the workshops will have primarily a standards focus or will be more broad-based. Smogor said a focus on standards assumes that standards for the river are forthcoming. Short said since standards are often driven by interior waters, it is important to have specific consideration of large river and interstate issues. Baumann said that he is less interested in standards than in how to move forward in non-point source pollution control. He said much could be learned by hearing how people are successfully addressing non-point source control. He said potential topic areas for the workshops could include standards, monitoring, and non-point source control implementation. Lotthammer said having the monitoring and implementation discussions, along with a standards discussion, is a good idea. Good said statewide nutrient reduction plans could also be part of the discussion.

Franz suggested perhaps removing standards from discussion, as it is a lightning rod, and focusing instead on applications for non-point source control. Good disagreed, saying that the lightning rod issues such as standards are exactly the issues that bring people to the table. Good continued by asking Baumann if he thought a discussion of cost sharing would be beneficial. Baumann agreed that this would be helpful and would perhaps be a chance to clear up misconceptions about cost sharing in Wisconsin's approach. Sullivan said incentive-based efforts would draw interest and should be part of the agenda. Olson added that the theme of voluntary compliance should also be explored, including a discussion of its limitations. Good suggested that Craig Cox of the Environmental Working Group could potentially address this topic.

In summary, the following topic areas/tracks were suggested by the WQTF for the nutrient-focused workshops:

- Standards Development
- Monitoring
- Implementation of Non-Point Source Controls (including incentive-based efforts)
- Gulf Hypoxia
- Statewide Nutrient Reduction Strategies

Good suggest that UMRBA staff draft up a proposal for workshop content and structure, and then circulate this back to the WQTF. All agreed with this suggestion.

Aquatic Life Designated Uses Project

Presentation of Final Draft Project Report

Donnelly presented a summary of the draft aquatic life designated uses (ALDU) report, including a summary of the data and data analyses incorporated into the report. Regarding the report's summary of use assignments (Table 2-2), Baumann said the UMR in Wisconsin falls into an unspecified class for aquatic life. Functionally, this becomes warm water sport fishery, since no other classification is assigned, though other classes could potentially apply, according to Baumann. Wilton indicated he would double-check the Iowa use designations in Table 2-2, as some revisions may be needed. In regard to material presented in Chapter 3 of the report, Sullivan asked whether the divisions of the Delaware River had been based on hydrology or water quality. Donnelly replied that both were considered.

In considering UMR classification, Sullivan said the most difficult boundary to establish is the one between impounded areas and backwaters. Smogor asked whether the main channel strata runs through the entire length of the pools. Donnelly confirmed that the main channel stratum is identified for the entire length of each pool. Karen Hagerty asked how the report considers closing structures on side channels. Donnelly said this had not been explicitly considered.

Smogor asked that the report clarify its description of EMAP-GRE sampling to say that one sample was collected from each site over the course of a three year period.

Hokanson asked WQTF members for input regarding the draft's comparison of water data to "threshold" values, given the further explanation of these values that was added to the beginning of Chapter 4 in response to discussion at the prior WQTF meeting. Hokanson said Dkhili's comments on the current draft indicate some continued discomfort with the use of thresholds. Smogor said one issue might be that, as the report later makes clear, dissolved oxygen (DO) levels below 5.0 mg/l in backwaters may not necessarily be detrimental to fish populations. Hagerty said it is important for the report to highlight that DO levels below 5.0 mg/l can be a natural part of the system's function. Smogor said that, overall, the threshold comparisons don't change much about the report's bottom line, cautioning also to avoid the use of the word violation in making any threshold comparisons.

Good said the comparisons are helpful in highlighting water quality patterns, as long as it is explained that this is simply for comparative purposes and does not imply a regulatory decision regarding impairment. Coffey said the comparison to thresholds could potentially be a distraction from the report's larger points about water quality and biological patterns. Lotthammer and Sullivan, however, supported retaining the threshold comparisons, with Sullivan observing that, without the highlighting on the data tables showing these comparisons, the data summaries would not have stood out.

Sullivan observed that, based on biological information, there might not be a compelling reason to keep the main channel and side channels separate in a classification system. He emphasized that the most important part is to separate out backwaters. Sullivan said limiting the number of classes is also a practical consideration. Donnelly responded that the strata classifications could be merged in the future as supported by the data.

Hagerty requested that the designation EMP-LTRMP be used in this report and others. Donnelly said she will be adding a list of terms and acronyms to the report.

Donnelly next described the proposed classification system contained in the report, which has three longitudinal classifications (upper impounded, lower impounded, and open river reaches) and four lateral classifications (main channel, side channel, impounded, and contiguous backwater). She added that the classification structure does not address seasonal differences, but said this should be considered

in the development of criteria for the classes. Sullivan agreed with the importance of developing criteria for the classes.

Sullivan said the report should consistently identify the lower impounded reach as ending at the Missouri River confluence (rather than Lock and Dam 26). Baumann asked whether Lake Pepin needs to be considered as its own strata. Donnelly replied that Lake Pepin would likely be considered its own strata. Baumann also asked whether all the UMR strata have already been mapped. Hagerty replied that the strata have been mapped, but that this is based on 1989 data. Sullivan observed that since the system has changed since 1989, in part due to habitat restoration efforts, the strata associated with particular areas may have changed.

Smogor asked whether the floodplain reaches (i.e., upper impounded, lower impounded, open river) are based on geomorphology or human modifications. Hagerty replied that the floodplain reaches were based primarily on geomorphology.

Smogor said investigations of this type will often examine questions of what is reversible vs. irreversible in terms of human impacts. Donnelly said her effort only looked at post-dam data and characteristics. Smogor emphasized the need to separate out natural and irreversible conditions from reversible conditions in discussing attainment. Hagerty said similar questions are also apparent in an LTRMP context. Matt Short observed that one of the challenges is implementing the CWA in an altered, actively managed system. Chris Yoder said that the CWA requires that attainable targets be set, but that what is attainable changes over time.

Review of Major Findings and Recommendations

Good said the important issue to consider right now is whether the proposed classification structure is what the WQTF wants to see. Coffey asked whether other large aquatic ecosystems had dealt with the kind of lateral diversity present on the UMR. Donnelly said most are not as diverse, except for those areas impacted by tidal effects. Yoder observed that the Ohio River really does not have to deal with lateral diversity.

Good said one of his concerns is having enough data to do assessments in all of the "boxes" set out in the classification framework. He also said aerial photos show that the aquatic areas are spatially complex, so it may be hard to define distinctions between classes. Olson responded by saying that the LTRMP probabilistic design gives a place to start in terms of a monitoring framework. Smogor asked how assessments would be done with a probabilistic sampling approach. Olson responded that the assessment would also have to be probabilistic in nature.

Sullivan concurred with Olson's comments, saying that the LTRMP stratified random sampling (SRS) protocol could be applied to an entire assessment reach, producing a probabilistic assessment. Good asked how such an assessment would then translated into a 303(d) decision. Sullivan and others replied that this would be methodology decision, where a state would need to determine what threshold number/percentage of samples exceeding a certain value would trigger an impairment listing.

Short said part of the process here is deciding on how to quantify areas spatially. He noted that rivers are typically assessed by mile and lakes by acres, but that the UMR doesn't fit either of these approaches very well. Smogor asked what would be done if certain areas along a lateral cross section are impaired and others are not. Donnelly replied that this would be analogous to how assessments are done for lakes, where results from sampling locations may differ.

Lotthammer said the states should articulate a common vision for how to proceed, while also recognizing that they will not advance in lockstep. She added that, if the classification structure is a shared model, it will also help the states in prioritizing their activities. Sullivan emphasized that the

most important thing is to proceed in identifying strata, with the recognition that samples won't necessarily be collected in every backwater, for example. He continued by saying that defining a classification system now must also be done with a recognition that the classes may change as more information becomes available, such as updating of the LTRMP GIS data. Will Bouchard agreed, adding that it is possible that additional classes will be identified within existing strata.

Short said the important thing is to get off the dime with some kind of approach. As criteria are developed, Short said boxes could be collapsed if criteria do not end up being distinct. He continued by saying that the proposed classification structure looks like a good starting point. Hagerty said Dan Wilcox's 1993 paper details habitat classifications for the UMR. Donnelly and Hokanson replied that this paper was part of the materials reviewed in putting together the project and the report. Hagerty said that, while separating out side channels in upper reaches adds complexity to the classification system, these areas are vital habitats in the lower reaches and therefore merit distinct consideration.

Sullivan said, in the interest of moving forward, he is willing to set aside his concerns about treating the main channel and side channels separately. He added that he sees some advantage in mirroring how the states already break up their waterbodies into lakes, streams, and wetlands, and thus raised the issue to encourage consideration of this approach in establishing the UMR classification structure. Sullivan said that, with this acknowledged as an issue for future consideration, he is comfortable with a lateral scheme based on four LTRMP strata. Yoder observed that states take many approaches in classifying waterbodies, ranging from lumping all lotic systems together to having 5-6 classifications. He added that the merits of establishing a classification structure are great, particularly when it is done using a systemic UMR perspective. Dkhili said the four strata distinctions seem especially conducive to criteria-setting, but that it will cause assessment to be more complex.

Hokanson said his sense from the discussions is that the WQTF is comfortable moving forward using the proposed classification structure. WQTF members expressed their concurrence with the use of the proposed classification structure (i.e., three longitudinal strata and four latitudinal strata).

Discussion of Next Steps and Implementation

Good asked about next steps, given that the WQTF has expressed concurrence on the classification structure. He asked whether the next step is to work on tools for unified assessment within the classification framework. Olson replied that this is exactly what the biological assessment project is doing for the main channel classification. Smogor said it makes sense to move forward where the most information is available. Bouchard concurred, saying that a main channel assessment would seem to be the most likely place to work. He said main channel assessment should move forward as soon as possible and then expand to other strata as knowledge about these areas increases. Donnelly suggested developing a monitoring strategy that addresses all classes, noting that the tools are already available for a main channel assessment. Sullivan said he assumes some type of probabilistic method will be employed, but that the states still need to decide exactly how this will be done.

Hagerty asked whether an assessment couldn't already be done using existing data, particularly that from the LTRMP. Sullivan replied that this is already happening via the bioassessment project, but that a sustainable monitoring strategy has to be practical and involve identifying priorities, as it doesn't seem realistic to expand the intensity of LTRMP monitoring to all the pools of the UMR. For example, he said we may find that protecting the main channel results in protection of the off-channel areas.

Good said he thinks it is important to express priorities. Hokanson suggested that perhaps this is best done in a separate, companion document to the report. Lotthammer concurred with using a separate document to lay out priorities, adding that the classification framework helps direct the monitoring strategy development. Donnelly agreed, saying that the priorities document could then be updated as

work advanced. Yoder suggested that his bioassessment work may help inform priorities for monitoring strategy development.

Sullivan commented that it may be worth considering how to address the Minnesota intrastate segment up to St. Anthony Falls. Lotthammer said the WQTF's discussions will help guide Minnesota's development of a monitoring strategy for this portion of the UMR.

Report and Project Finalization

Naramore said the entire report can be sent out to the WQTF for review if that is what the WQTF wants. Smogor, Short, and Baumann all requested that the full report be sent out as soon as possible for WQTF review. All agreed to this, with January 28, 2011 deadline for returning comments to Donnelly and Hokanson. Naramore added that a broader review outside of the WQTF would likely follow the formal completion of the IPA.

UMR CWA Biological Assessment Guidance Document Project

Presentation of Preliminary Biological Assessment Report/Data Summary

Yoder gave a presentation summarizing recent work on the project, as reflected in the interim report *Preliminary Analysis of Biological Assessment Thresholds for Determining Aquatic Life Use Attainment Status in the Upper Mississippi River Mainstem*. He said this report was added as a project work task following the second work session, noting that the following elements of the proposed guidance content are addressed at least in part by this report:

- Review suitability of available biological indicators for assessing attainment of aquatic life use(s) in the UMR main channel.
- Implications of adopting biological assessment as the primary driver of UMR CWA programs.
- Potential impairment thresholds including TALU approaches.
- Comparison of index values calculated for various UMR datasets.
- Relating index outputs to impairment thresholds.

Yoder said the advantages of conducting the preliminary thresholds report's analyses include: 1) gaining practical experience and testing indices by doing an "assessment", and 2) developing the guidance around lessons learned from conducting the analyses and "assessment," including recommendations for attainment thresholds. He emphasized that the report presents an object lesson in what a biological assessment process for the UMR might entail, but is not itself the only or final approach to conducting a UMR biological assessment.

Yoder described the methodology used in the report as follows:

- Employed a dual indicator approach, except on the Open River.
- Used EMAP-GRE derived and calibrated indices (the GRFIn and GRMIn) as a baseline approach, and also looked at a regional index, the fish assemblage condition index (FACI).
- Examined attainment thresholds – least disturbed/intermediate and intermediate/most disturbed – based on EMAP-GRE stressor gradient.
- Considered an alternate threshold based on use of the lower St. Croix River as an analog to a "least impacted river."

He added that another approach, the biological condition gradient (BCG), would involve "constructing" biological assemblage attributes along an entire gradient of potential quality. He stated that this approach would require addition effort, but would likely be very worthwhile for the longer term and would reinforce TALU approaches.

Yoder said MBI's calculations indicate that substantial portions of the UMR would likely be considered impaired using a biological approach and that it is this "big picture" change in outcomes that the WQTF needs to consider. He also explained that the report includes an examination of proximate stressors likely contributing to impairment.

Yoder closed his presentation by making the following preliminary observations:

- The initial biological assessment yielded results that are "in line" with shifts from chemical to biologically-based assessments on other waterbodies (i.e., higher proportion of non-attainment when bioassessment employed).
- Different options for setting a CWA baseline threshold did not yield markedly different results in general.
- A regionally derived river index may bring the UMR into better perspective – FACI results suggest that some places in the UMR are very high quality and may more fairly treat the Open River reaches.
- A BCG would provide another way to ground what we think is happening on the UMR.

Discussion of Data Analysis Outcomes and CWA Attainment Thresholds for the UMR

Sullivan asked whether the comparison made with the lower St. Croix River included Lake St. Croix. Yoder replied that MPCA data was used and he would have to check if this included Lake St. Croix. Sullivan also asked whether it would be possible to use a reach of the UMR downstream from the Chippewa River as an internal reference rather than looking at other regional rivers.

Karen Hagerty asked why non-indigenous fish were not included as one of the metrics in the Open River GRFIn. Mark Pearson replied that numbers for non-indigenous fish are highly variable.

Ted Angradi added that the stressor gradient was now a bit dated and if it was going to be employed in CWA decision-making, it should probably be updated.

Yoder cautioned the group not to get too wrapped up in details regarding the EMAP-GRE indices because, while these are also important, the biggest need is for the WQTF to consider the broader implications of moving to biological thresholds and biologically-based impairment decisions.

Yoder asked Dave Bolgrien if the state-specific results presented in Table 2 of the preliminary thresholds report matched the analyses done by EMAP-GRE. Bolgrien said that these looked close to what EMAP-GRE staff have seen.

Yoder stated that proximate stressors can sometimes be proxies for other stressors, but at least the identification of proximate stressors can point in the right direction regarding causes of impairment.

Bouchard asked if enough information is available to create a BCG. Yoder replied that this would need to be investigated via a cursory desktop BCG effort, at least initially. He said one question such an analysis could answer is whether setting a threshold based on the "best available UMR" may be setting the bar too low. Yoder added that some sites on the UMR may actually warrant an exceptional classification. He said other regional river data could be utilized in setting up a BCG.

Sullivan asked what the sample size was for other rivers used in the comparative analysis. Yoder said there are at least 30 samples per river. Sullivan also asked about the extent of the Wisconsin River data. Yoder replied that it is from the lower portion of the Wisconsin River.

Jim Baumann stated that EPA-accepted methods allow for different choices to be made in assessment determinations. He said it is therefore important to focus on what approaches might be better or worse, not on what is right or wrong. Sullivan said more of the FACI comparisons would be helpful. Yoder cautioned that care needs to be taken in comparing methods.

Roy Smogor asked whether the EMAP-GRE approaches depended on the stressor gradient developed by EMAP. Yoder replied that this is the case. Smogor said it is important to consider whether the stressor gradient is a good representation of human-caused stress. Yoder acknowledged Smogor's point, but stressed that the most important thing is that the indices are directionally correct in their function, as often just 50-60 percent of the maximum scale is considered as meeting an attainment threshold.

Sullivan asked Yoder whether the FACI and GRFIn were compared on the UMR. Yoder replied that this had been done, with some similarities and some differences seen. Sullivan again asked whether the highest scoring UMR reach can be used as an internal reference condition.

Smogor requested that the Region 5 document including the FACI be made available. Yoder said this can be done, but cautioned that the FACI has not yet been published.

Yoder asked the EMAP-GRE staff whether they had any other comments regarding the thresholds report. Angradi said the characterization of EMAP-GRE data appeared appropriate. Bolgrien reiterated that the metric selection in the indices did not include any *a priori* decisions, but rather was based on relationship to the stressor gradient, following the methods of Karen Blocksom. Bolgrien and Angradi also cautioned that reference conditions may not exist on the UMR. Sullivan asked whether any other indices were expected soon from EMAP-GRE work. Angradi said a diatom index, related to nutrients, is expected out soon.

Tom Wilton asked whether it is possible to create separate BCGs for each of the UMR's floodplain reaches. He said some of the higher scoring sites on the lower portion of the impounded river and the open river may indicate that a higher condition, similar to that on the upper impounded river, may actually be attainable.

Yoder commented that only three macroinvertebrate sites met the least disturbed condition threshold. Hagerty added that the GRMIn appears fairly flat relative to the stressor gradient. Yoder concurred, but said he would like to talk further with EMAP-GRE staff about this.

Sullivan asked whether threshold-setting is ultimately a policy decision, recognizing that pre-settlement conditions are never going to be possible. Yoder said the cleanest way to establish a threshold is to have a reference that reflects least impacted conditions. However, he added, this is not possible for the UMR and therefore an information-based alternative is needed.

Yoder said it might be possible to create more condition classes out of the EMAP-GRE approach, but that it is not clear that five or six condition classes could be created. Sullivan repeated his suggestion that using an internal reference, such as the 95th percentile of EMAP UMR data, might be preferable to using a reference based on regional data that might not be applicable to the UMR. Yoder cautioned that such an approach might end up setting the bar too high. Sullivan replied that his preference would be to potentially set the bar too high using internal data, rather than using data that may not be applicable. Yoder said there is no "silver bullet" and that the EMAP stressor gradient is about as empirical as it gets, lacking an existing reference condition.

Smogor asked whether there has been any effort to look at GRFIn's precision. Angradi and Bolgrien said they did not think so, with Angradi reminding the group that the stressor gradient likely needs to be updated. Bouchard asked if the EMAP data could be revisited to calculate the precision of GRMIn scores. Yoder said this could be done, but may not be the most desirable way of examining GRMIn. Hagerty said invasive species can make up a large part of total biomass in some areas, and therefore should likely be included as a GRFIn metric.

Yoder urged the group to consider that a biological approach is very likely to increase the number of non-attainment reaches.

Sullivan asked whether a decision had been made on the sampling design to be used, presumably between EMAP or LTRMP. Yoder said work done by Bartels and Dukerschein showed a fair amount of equivalency between these programs, and possibly with MPCA's approach, but that WI DNR's method is distinct. So, he explained, the choice seems to be between EMAP and LTRMP for a systemic approach, with EMAP having preferred longitudinal coverage. Sullivan said Minnesota is ready to start biological sampling and asked Yoder if his recommendation to them would be to use an EMAP-style approach. Yoder said that this would indeed be his recommendation.

Yoder asked group members if they want the final guidance to include a statement regarding which programs are adequate to the task and what tweaks might be needed. Hokanson replied that this is definitely in the scope of work. Yoder observed that, in cases of competing methodologies, people and programs are typically reluctant to drop their methodology. He said the question then becomes equivalency and that even with the work done by Bartels and Dukerschein, the equivalency question has not yet been fully settled for UMR methods.

The meeting adjourned for the day at 5 p.m.

Discussion of Data Analysis Outcomes and CWA Attainment Thresholds for the UMR (Continued)

The meeting's second day began with a resumption of the discussion regarding the preliminary thresholds report. Olson said he had concerns with the stressor gradient being highly manufactured and as such he is not confident that it is a good indicator of biological condition. Hagerty said she would like to learn more about how the metrics for the GRFIn were chosen. Smogor said he also has reservations about the stressor gradient, but feels that it likely does a good job overall in portraying condition.

Yoder said the comparisons to regional indices give him increased confidence in the EMAP-GRE indices. He asked the group whether, if there are problems with the stressor gradient, it is up to the WQTF to address these problems. He added that, if that is something the group wishes to be addressed in the current project, it is important to know that sooner rather than later. Yoder also said the group needs to keep in mind that much of this effort is directed toward identifying directionally correct indicators and not necessarily precise numbers.

Smogor suggested that one helpful step might be to ground truth the EMAP-GRE results by showing them to individuals who know the river best. Olson said some of these individuals were involved in the EMAP process, including in the selection of least impacted sites. Sullivan said there had been a concern about bias in involving river experts in the process. Smogor said this expertise is exactly what is needed, however. Yoder stated that a mixture of both expertise and independence is important.

Sullivan said the information coming out of the threshold analysis seems to make sense in comparison to work done by Wisconsin DNR, in that where there are the most serious problems, these are identified. He noted that, in particular, vegetation shows a strong gradient. Sullivan added that the

macoinvertebrate gradient seemed relatively flat, which could be an accurate depiction or could be an artifact of the sample technique or some other factor. He said he probably wouldn't recommend doing macroinvertebrate sampling at this point. Yoder agreed that there may be some issues with the macroinvertebrate index (GRMIn), which might be related to its calculation and that he would explore this further with Angradi. Sullivan said Brian Weigel of Wisconsin DNR had also encountered problems such as this in his work with macroinvertebrates.

Yoder agreed that the macroinvertebrate index appears to be compressed and said one of the concerns with GRMIn is that it may not be able to recognize high quality sites. However, he said recalibrating an index would seem to be beyond the scope of work for this project. Hokanson agreed that the project scope is to examine existing tools and identify strengths and limitations, but not necessarily to fix them.

Hagerty said the limitations in GRMIn may hold back buy-in from the natural resource managers, and that the group needs to consider how important this buy-in is to them. Sullivan said no index will be liked by all parties, as all indices have their biases. Yoder said resource managers have often voiced concerns about multimetric indices. Good asked whether Yoder felt that managers have been incorrect in their opposition to multimetric indices. Yoder replied that, in his opinion, multimetric indices are tools that work.

Good said he is hearing that the group is more comfortable with GRFIn than GRMIn. He continued by saying it is important for an IBI to be both broadly accepted and steeped in standards if it is going to work on the UMR. Donnelly commented that Illinois and other states do already have biological approaches included in their standards for intrastate waters.

Lotthammer asked whether the results indicate that the indices might be okay, but that the data set is limited. Yoder replied that this also is a possibility. Bouchard commented that the limited spread in the macroinvertebrate results might actually be a fair representation of conditions. Yoder said one of his jobs is to inform the WQTF on how serious the problems with GRMIn might be.

Bouchard asked what the comparability of macroinvertebrate protocols is between agencies. Yoder replied that there are not really many currently viable options, aside from EMAP-GRE. He added that the Metropolitan Council's approach used artificial substrate and as such is not very comparable to EMAP-GRE. Sullivan said macroinvertebrate sampling costs may be relatively high. Yoder said he has found, fish and macroinvertebrate costs to be generally comparable, as fish costs are high for equipment and labor, while laboratory analysis costs are more for macroinvertebrates.

Smogor asked whether, to provide a degree of comfort, it might be possible to generate GRFIn scores for the regional rivers used in the FACI. Yoder replied that this would require extracting FACI data and running it through the GRFIn. Hagerty said it was very likely that there would be differences in the FACI and the GRFIn outcomes for the Open River.

Olson said he wasn't sure that he agreed with EMAP's conclusion of two longitudinal strata and that there may need to be separate indices for Upper Impounded, Lower Impounded, and Open River, as there are very significant gradients for factors including turbidity and vegetation. Yoder replied that multivariate analyses can show differences that don't show up in or affect an index.

Yoder said it is clear from the discussion that the group is not currently comfortable with the indices and their mechanics. He suggested that a next step is a first order analysis of the available indices, but cautioned that this may result in a desire to build new indices. Smogor said he believes the EMAP-GRE indices are likely sound, but reiterated his suggestion for further ground truthing. Yoder said the approaches being discussed are as sound as what is being used elsewhere. He cautioned that discussion

of the stressor gradient risks becoming a distraction, emphasizing that it really only needs to be directionally correct and that from there the biology can do the heavy lifting.

Hokanson said it is likely other stakeholders will want to see the ground truthing Smogor suggests. He added that his concern is the ability to communicate the approach to the public, noting that even the WQTF is having trouble understanding the stressor gradient and the EMAP-GRE indices. Yoder replied that, in communicating to the public or stakeholders, the emphasis is on explaining that you used a valid methodology, but not getting into all the mechanics or details.

Lotthammer asked how the EMAP-GRE indices' two longitudinal strata approach can be reconciled with the three longitudinal strata system just laid out in the ALDU discussion.

Good observed that there is no mechanism or plan in place to repeat EMAP-GRE monitoring. He further asked if EMAP-GRE was intended at its outset to provide a CWA assessment of the river. Yoder replied that this seems to be the intent of the program, even if not stated outright. Smogor concurred, adding that EMAP-GRE staff have never stated this directly. Yoder said the work this WQTF project is doing bridges from the EMAP effort to an actual CWA assessment.

Lotthammer said that, before these approaches are implemented for CWA assessment, there needs to be more consideration of the implications, including TMDLs and how to address the ability to monitor for response. Hagerty said she is concerned by the abrupt change in threshold at the juncture of the Lower Impounded Reach and the Open River. Yoder replied that it might be preferable to keep the thresholds the same for the entire UMR.

Good asked whether the current project would produce a binding assessment that would then have to be used in a 303(d) setting. Yoder said the EMAP-GRE monitoring program and data are generally good and produce results in line with common practices. He continued by saying that the challenges are really in dealing with implications, and that this is common when biology is brought into the assessment process. Sullivan said that, while the results may not be perfect, they are much better than what is currently being done.

Good reiterated his concern with what comes next, in terms of use in 305(b) assessments and 303(d) impairment listings. Lotthammer concurred, saying that one of the questions is how to characterize the results of the current work as "here's how an assessment *could be done*" vs. "here's how we *did* an assessment." Hokanson stated that actually conducting a CWA assessment is beyond the original project scope of work, but that the WQTF could alter that scope if desired. Yoder concurred, but added that it is not a big step from figuring out how to do an assessment to actually characterizing the results as an assessment.

Good and Lotthammer reiterated their concerns about the potential use of the report outcomes. Bill Franz said he would also need to consult within EPA on this matter. Smogor emphasized that the outcomes really depend on where the threshold of attainment is established. Olson observed that a lot also depends on what is chosen as a determination of impairment (e.g., 10% of sites not meeting a threshold and/or certain frequency in which threshold not met) once a particular threshold value has been selected. Sullivan commented that EMAP has not to date released its final report, so in a sense all analyses conducted using EMAP may be considered preliminary.

Yoder invited the WQTF to further consider both the science questions and the implications of applying biology in CWA assessment, and send any comments to him. He also emphasized a need to address the question of continued monitoring. Lotthammer concurred that there needs to be greater discussion of implementation considerations within the scope of the project. Hokanson said addressing

implementation issues is clearly within the scope of the project. Sullivan said it is important to express a plan in the guidance, even if current resources do not allow for its immediate implementation.

Lotthammer said she would like to the guidance to comment both on what's available and where things need to go in the future. Good said it is important not to be painted into a corner with the guidance, and not to portray that it represents a 305(b) assessment or 303(d) impairment listing. He said one approach to mitigate this could be to offer multiple examples, which presumably would have varied outcomes. Yoder said the downside to this is the appearance of hunting for an answer, and that the process is not that subjective and needs to be an informed decision-making process. Smogor and Sullivan said that, by its very nature, a guidance does not bind the states to accept the methodology or the outcomes.

Hokanson and Yoder suggested that, since all the technical and policy questions clearly would not be resolved in this meeting, further action steps are needed. They proposed that Yoder integrate additional analyses into the thresholds document and then circulate this to the WQTF in February 2011, with the WQTF then holding a conference call to discuss the revisions in March before the guidance is distributed to the broader participant group in April. The WQTF concurred with this approach. Hokanson thanked Yoder for all the work done to date on the project.

UMR Monitoring Strategy Proposal

Hokanson distributed a proposal for the development of a UMR CWA Monitoring Strategy that Illinois EPA had incorporated into its FY 2011 Section 106 supplemental monitoring application. Good explained that this presents an unexpected opportunity to build on the WQTF's work. He stressed that this proposal responds to recommendations in the ALDU report and elsewhere to develop a comprehensive CWA strategy for the UMR. He emphasized that, although the project would be funded via Illinois, it would create a product for all the UMR states. Good added that initial feedback on the proposal from the states via the WQTF has been positive.

Donnelly said that, from an EPA perspective, the initial proposal needs more specifics and that the 2 year proposed timeline seems long. Good said he would continue to work with EPA to refine the proposal. He also said two years is reasonable given the scope and multiple entities involved. Hokanson concurred, saying that the process of mutual discussion, understanding, and concurrence with a plan is what really takes time, as opposed to just technical details.

Good said he envisions this effort as being similar to what the states need to develop for their own monitoring strategies. Yoder observed that this effort crosses paths with the biological assessment guidance work.

Donnelly asked whether the strategy would cover just the main channel or all strata. Good said that main channel would be highest priority. Naramore added that all strata would be considered in the strategy. Sullivan said his assumption is that the strategy would not be down to the level of picking individual sites, but would address questions of frequency and site selection, such as are in the existing EMAP documentation.

Donnelly asked whether, if a strategy were to be developed, the states would be obligated to implement it. Good and Lotthammer said it would be dependent on resources being available, as is the case with monitoring strategies generally.

Good requested WQTF members to provide him with any other comments on the monitoring strategy as soon as possible.

UMR Human Health Uses Discussion

Hokanson gave a brief status update on the UMR Human Health Uses discussion, reminding the group that this was an outgrowth of the previous year's draft arsenic TMDL proposed by US EPA Region 7. He noted that most of the discussion in the group has focused on arsenic-specific issues, as opposed to human health-related issues more broadly.

Donnelly asked about the purpose of the discussions. Hokanson replied that the effort is primarily focused on issue identification related to arsenic and human health uses generally, and is not scoped to necessarily resolve the issues that are identified. Dkhili said he hopes the discussions will aid in developing approaches to address naturally occurring contaminants under the CWA. He added that it would also be beneficial if these discussions contributed to a more consistent approach to human health protection on the UMR among the states.

Interstate 305(b) Assessment and 303(d) Impairment Listing Consultation

Hokanson displayed UMRBA's current comparison of the states' listings for the UMR. Each state provided comments on its assessment and listings as follows:

Illinois

Good said Illinois EPA continues to be in discussions with US EPA Region 5 regarding its 2008 and 2010 303(d) lists. He said the 2008 list has been partially approved and no action has yet been taken on the 2010 list.

Iowa

Olson reported that Iowa's 2008 303(d) list has been approved and that the 2010 list is being prepared to out for public comment.

Wisconsin

Sullivan said the UMRBA chart appears to correctly reflect Wisconsin's listings and that, if any changes are needed, he would notify Hokanson.

Minnesota

Lotthammer said UMRBA's characterization of Minnesota's 2010 list appears to be correct, but that she would notify Hokanson if any changes are needed. She also said she thought that Minnesota's 2010 list had been approved by US EPA Region 5.

Missouri

Dkhili said he was not sure whether US EPA Region 7 had approved Missouri's 2010 list. However, he reported that Missouri's listing methodology for 2012 had been approved.

US EPA

Franz said he had no further comments to offer on behalf of US EPA.

Emerging Issues for Listing

Sullivan said Wisconsin will be examining phosphorus as a possible cause for listing, though he is not sure whether that will lead to listings in the upcoming cycle.

Olson said he plans to argue against a single-sample listing related to the presence of indicator bacteria (fecal coliform), as existing guidance from US EPA appears to favor the use of a geometric mean, even

though this has not been encouraged by US EPA Region 7 staff. Short said Illinois has encountered similar issues and would be interested to see what success Iowa has.

Lotthammer said Minnesota will be replacing its turbidity criteria with TSS as part of its triennial standards review, and will need to consider the implications for existing turbidity listings. Donnelly asked what value is to be used for TSS. Lotthammer said that the site-specific criterion for TSS applicable to Pools 2-4 is 32 mg/l (for the period of April to September). Bouchard added that a 25 mg/l value for TSS below Lake Pepin would be used, with the trigger for an exceedance being 10% or more of samples over the criterion, using data that are 10 or fewer years old.

Other Agency and Organization Updates

Good said that Illinois has a new QA/QC officer, but that monitoring staff is still very thin. Smogor added that the presence of Asian carp has complicated proposals to retool uses and standards in the Chicago area. He said that some have questioned the state's calculation of biological potential, saying that it overstates what is possible. Smogor said that this may have implications for the UMRS as well. Yoder commented that his observation in working on the Rock River is that carp and native species can coexist.

Olson said an ongoing issue is Iowa's 2002 delisting of six waterbodies that US EPA returned to the impairment list in 2006. He said one of these is a bacterial impairment on the UMR at Keokuk. Olson explained that US EPA is now seeking a TMDL for this impairment, though data from Illinois indicate this area is not currently impaired. He said Region 7 may contact Illinois to obtain data, and that he would provide future updates on the situation as it evolved. Smogor asked if this impairment was based on the presence of fecal coliform Olson replied that this is correct, but that Iowa now uses an E. coli criterion. In response to a question from Good, Olson said Iowa DNR's upper management has not yet engaged on the issue. Good replied that this may be an issue to bring to the attention of the WQEC.

Dkhili said Missouri DNR is looking at NPDES permitting requirements related to bacteria, as US EPA has objected to some permits that did not have daily or weekly average requirements. He said Missouri typically includes weekly or monthly average requirements in its permits. Dkhili said he had examined other states' approaches and this has informed his proposal to use a geometric mean for assessment purposes and a single sample for health advisories and permits. He said Missouri DNR management has not yet responded to this proposal. Additionally, Dkhili noted that Missouri DNR has a hiring freeze in place and that out of state travel has been disallowed unless another party pays for the travel. In addition, mileage and meal reimbursements have been reduced.

Lotthammer said MPCA is completing a report on endocrine disruptors near wastewater treatment plants on Minnesota's interior rivers, including the intrastate portion of the UMR. She noted that this report should be available within the next few weeks. Lotthammer added that a study examining the occurrence of personal care products in surface waters is underway. She also mentioned that Minnesota's work to examine nitrate and nitrogen continues. Following up on an earlier discussion, Bouchard clarified that the determination of impairment related to the TSS standard on the UMR is based on the summer average value, where as the 10% exceedance approach is used on other waters. Sullivan asked whether the TSS values used (32 mg/l above Lake Pepin, 25 mg/l below Lake Pepin) are based on the protection of SAV. Bouchard replied that this is the case.

Bob Buchmiller said the new USGS Iowa Water Science Center Director is Kevin Richards. Buchmiller said USGS has also reorganized such that Illinois, Iowa, Minnesota, and Wisconsin centers all report to the Ann Arbor area office. He added that there is a strong interest in the UMR within the area office.

Sullivan said UMRCC's-Water Quality Tech Section will meet next on March 15, 2011 in Hannibal, Missouri in conjunction with the Committee's annual meeting. He also said the last Tech Section meeting was focused on macroinvertebrate sampling and noted that the mechanics of such sampling are quite complex.

Franz said Tom Davenport of US EPA Region 5 is developing a workshop to address statewide nutrient reduction strategies. Buchmiller asked whether this workshop would be web-based or in-person only. Franz replied that his understanding is that it is an in-person only meeting.

Naramore commented that, due to new governors and retirements, there is significant turnover on the UMRBA Board. She said staff will keep the WQTF updated as representation is settled.

Donnelly asked when the nutrient-related workshops under the 604(b) project would be held. Naramore replied that these would take place during the summer, so that the workshops report can be completed by September 30, 2011, the end date for the 604(b) agreements.

Confirming Priorities and Next Steps

Hokanson summarized the following next steps for the WQTF:

- ALDU Report
  - Full copy to all next week (1/19/11)
  - Comments by end of January (1/28/11)
- Nutrient Report
  - Revise draft nutrient report (date TBD)
  - Final by June 1
- Biological Assessment Guidance
  - Any comments to Chris Yoder as soon as possible
  - Revised interim product by end of February
  - WQTF Conference call/web conference in early March
  - Guidance draft to full project work group by April 1
- Cross-programmatic work sessions – UMRBA staff will scope
- UMR Monitoring Strategy – in process
- Next meeting – May 2011 (tentative)

Good asked that Hokanson distribute these next steps via email to the WQTF following the meeting.

The meeting adjourned at 11:59 a.m.