

Upper Mississippi River Basin Association Water Quality Task Force Virtual Meeting

January 29-30, 2019

Highlights and Action Items Summary

September 25-26, 2018 WQTF Highlights and Actions Meeting Summary

The WQTF approved the draft highlights and actions summary of the September 25-26, 2018 WQTF meeting following a correction to the spelling of “Rend” Lake on page A-3.

UMRBA Updates

Lauren Salvato described the November 27-29, 2018 USEPA Region 5 water quality manager’s meeting. Topics discussed include state and regional water quality monitoring programs, National Aquatic Resource Surveys, monitoring initiatives, HABS, continuous monitoring, and PFAS.

John Hoke asked Ed Hammer to request a similar meeting with USEPA Region 7.

Kirsten Wallace provided an overview of the UMR Water Quality Improvement Act. UMRBA staff have been working with the Association’s WQTF, WQEC, and Board to develop the framework’s provisions, which includes increased federal investment in the Upper Mississippi River (UMR) states to respective state nutrient reduction strategies. Additionally, the measure is seeking a Mississippi River program office jointly administered of by NRCS and USEPA.

UMRBA is planning to consult with leadership in USEPA and NRCS this spring as well as the Hypoxia Task Force (HTF) at its May 16, 2019 meeting. HTF members could be helpful in conducting outreach to agricultural stakeholders in their states to gain support for this legislative proposal. It is also a forum for UMRBA to connect with Lower Mississippi River states.

Jim Fischer suggested adding language regarding water quantity in the framework, noting that the hydrology is an important factor in sediment and nutrient delivery. Wallace noted that the framework was written broadly to allow for other water quality parameters to be included in future amendments.

In response to a question from Albert Ettinger, Wallace stated that UMRBA has secured Reps. Ron Kind and Rodney Davis and Senators Roy Blunt and Amy Klobuchar to sponsor the legislation. UMRBA would like to first consult with key agencies and individuals and better estimate some the respective costs before formally introducing the legislation.

Good suggested creating a summary of the trends and top factors causing water quality degradation on the UMR. Sandy Morrison said USGS publications on water quality trends could be used as reference. Pam Anderson and Ed Hammer added that Minnesota and Wisconsin’s long-term data sets could also be used as references. Fischer and Wallace both agreed a brief articulation of water quality degradation would be helpful in stating the need for the UMR Water Quality Improvement legislation.

Action Items

- **Morrison will send USGS water quality trend publications to UMRBA for distribution.**
- **UMRBA will draft a summary of nutrient and sediment trend information and causes in the UMRB to use in communicating the need for the UMR Water Quality Improvement Act.**
- **UMRBA will add water quantity language to the UMR Water Quality Improvement Act framework.**

CWA Program Updates

Illinois – Good announced that ILEPA will submit its 2018 Integrated Report after the agency responds to comments received. ILEPA is starting to plan for 2020 CWA sampling before the field season begins.

ILEPA staff are working through the old CWA assessment database and transferring data to the new ATTAINS database.

Good announced the upcoming retirement of ILEPA's watershed section manager. ILEPA is currently conducting stage two of monitoring to support TMDLs. Budgets challenges has constrained the agency's ability to organize field work.

Iowa – Dan Kendall reported that Iowa is still working on 2018 Integrated Report and working to streamline data extraction from the AQUIA database and process the data through an auto calculator.

Kendall said Iowa will start working on the 2020 list soon. It is currently adjusting external data collected from other states.

Regarding TMDLs, Iowa is currently working on a beach bacteria TMDL, which will enable staff to look at bacteria exceedances locally rather than at the watershed level. Iowa is sharing data between beach, lake, and TMDL groups at IADNR.

Minnesota – Pam Anderson reported that USEPA Region 5 accepted Minnesota's 2016 and 2018 lists. Minnesota will start developing its 2020 assessment in February 2020. Anderson said Minnesota experienced some challenges uploading data into ATTAINS and offered to provide insights to other WQTF members.

The Lake Pepin eutrophication TMDL was submitted to USEPA Region 5 for initial comments. Anderson is not sure where USEPA's decision will coincide with the Minnesota's legislative session. Before the TMDL's approval, MNPCA is working to set effluent-based permits limits and is undergoing mediation sessions with public utilities. Anderson noted that MNPCA will rely on Minnesota's nutrient reduction strategy for implementation.

The Minnesota River TSS TMDL covers for the majority of the river. Public notice will start in spring or summer of 2019 with litigation likely. The TSS limits into the Twin Cities metro area are determined, but work remains to define limits on the upstream contributions. In response to a question from Hoke, Anderson replied that MNPCA has published factsheets on how effluent limits were developed. The factsheet describes how a contaminant might contribute to impairments and whether effluent concentrations are greater than the water quality-based standard.

Missouri – Hoke said Missouri is ready to submit its second round of 2018 assessments. Missouri had to reissue its public announcement because only five out of six required announcements in public newspapers were published. Delays also occurred because of USPEA’s month-long lapse in FY 2019 funding.

Missouri obtained an exchange network grant to get data uploaded directly into ATTAINS. Hoke said that 303(d) and TMDL lists will be submitted into ATTAINS.

The Medicine Creek TMDL, located near the northern border of the state, was approved. Missouri believes the bacteria impairment is coming from Iowa. Two other TMDLs are awaiting approval, one is near a CSO/outfall and the other in the bootheel region of the state.

Wisconsin – Shawn Giblin announced that Wisconsin finalized its 2018 assessment and plans to initiate its 2020 assessment in early February 2019. A public comment period is open until March 31, 2019 for the 2020 reporting cycle.

Wisconsin is also moving data into ATTAINS and has been working on this upload since October 2018. TMDL info will be submitted to ATTAINS.

The Wisconsin River TMDL, covering roughly 9,000 square miles of the state, was sent to USEPA for approval review in December 2018. Marcia Wilhite said wastewater dischargers are aware of the reductions they face resulting from the TMDL. The TMDL includes a basin-wide load allocation on the agricultural side. Wisconsin broke it down to edge of field practices (in lbs/acre) to allow farmers to look at the losses on their fields presently and adjust. Wilhite believes that this will help with TMDL implementation.

Action Items

- **Anderson will send MNPCA factsheet on effluent based limits to Hoke.**

Nutrient Reduction Strategies (NRS)

State Updates

Missouri – Hoke said Missouri is looking at establishing a baseline for total phosphorus targets (not technology based). On December 14, 2018, Missouri approved nutrient criteria for streams and lakes and is now waiting on USEPA Region 7’s approval before implementing the criteria.

MODNR staff are analyzing statewide trends using R for analysis and mapping. Hoke anticipates that trend analysis will be complete by the June 2019 WQEC and WQTF meeting.

Albert Ettinger asked Hoke about implementation of the lake standards. Hoke described chlorophyll-a criteria based on the location within the state (more information can be found [here](#)). A number of Missouri lakes will have site-specific criteria. Hoke added that MODNR staff are conducting an economic analysis.

Minnesota – Anderson shared information on the Minnesota agriculture water quality certification program, a voluntary program for farmers to implement BMPs. Gaining certification through this program gives farmers regulatory certainty for 10 years. Thus far, phosphorus reduction through the program is estimated at 25,000 pounds.

The Minnesota buffer law requires compliance by November 2019. Anderson said there is 99 percent compliance with buffers along lakes, rivers, and streams. Public ditches have a much lower compliance rate – i.e., roughly 8 percent have a 17-foot buffer. The law is anticipated to reduce nutrient loading by the time of the next five-year update. Metropolitan Council’s recent update acknowledged a 37 percent decrease in phosphorus over a 40-year period. However, nitrate is increasing.

In response to a question from Wilhite, Anderson said she will follow up with more specifics regarding the use of nitrate toxicity as a water quality standard.

Wisconsin – Wilhite said Wisconsin is working on its 2019 update that will likely include updated trend information. There are 18 nitrate impairments from sources like public water suppliers as well as a cold water trout fishery. The agency had to issue “do not drink” orders following the 2018 spring melt.

Due to the impairments, the Wisconsin DATCP issued a fertilizer rule that will likely be adopted after the 2019 legislative session. The rule includes restricting fertilizer application in vulnerable areas with elevated nitrate. Currently, the rule is voluntary, but Wisconsin is considering language to make adoption mandatory.

Wisconsin completed its 2015-2016 progress report and anticipates starting work on its 2017-2018 report in 2019. Most implementation efforts are related to phosphorus TMDLs. Wisconsin is now turning its attention to nitrates, which are a pervasive concern statewide. The new Wisconsin administration will likely have a significant focus on nitrate. Giblin added that the nitrate trends are apparent from the Reaches 0-3 pilot data.

Iowa – Kendall said that Iowa’s 2019 report is in final revision. Over \$500 million was spent during reporting period on nutrient reduction efforts.

In fall 2019, Iowa DNR received a petition to establish lake nutrient criteria. The agency has six months to respond to the petition and to decide whether to adopt it. A similar petition previously filed lost traction. Kendall said IADNR is considering revisions to its 2008 criteria to reflect 18 years of ambient water quality monitoring data. The 2008 criteria was based solely on ambient lake data.

Hoke asked for additional details on the chlorophyll-a, total phosphorus, total nitrogen, and Secchi recreation criteria. In response, Kendall noted that most lakes in Iowa are impounded. While IADNR is currently working with USEPA Office of Science and Technology on criteria, the preference is to use the criteria previously developed.

Illinois – Good said ILEPA’s is working with University of Illinois professor Dr. Greg McIsaac to estimate nutrient loads with ILEPA and USGS data. The University is using ILEPA water quality monitoring data to redo parts of the nutrient reduction strategy. Three years ago, ILEPA started a five-year contract with USGS to install supergauges and examine nitrogen and phosphate status and trends.

The next Illinois Nutrient Monitoring Council meeting is in March 2019. The council is tracking Illinois Governor J.B. Pritzker as he submits commenting on nutrient-related legislation and is developing a resolution to increase funding for agency and policy coordination.

The Illinois Nutrient Science Advisory Committee report is available to view online and the comment period is open until April 30. The report details a framework for nitrogen standards for mid and large sized streams.

National Great Rivers Research and Education Center (NGRREC) – Ted Kratschmer explained that the Great Lakes to Gulf project is moving forward and offered present updates at the June 2019 WQEC and WQTF joint meeting.

Presentations

Giblin provided an overview of Wisconsin's Groundwater Coordinating Council Report to the state legislature on nitrates. The report called attention to nitrate exceedances across the state, above the maximum contaminant limit (MCL) of 10 mg/L. Elevated nitrates have negative externalities for public health (e.g., blue baby syndrome), ecosystems, and water quality. Giblin detailed the states' vulnerability to nitrate contamination due to geology, soil characteristics, surficial deposits, and land use. Furthermore, groundwater-surface water interactions have implications for the water quality of the UMR. Featured locations along the UMR that have elevated nitrate concentrations include Trempealeau and western La Crosse counties, Buffalo County, and Crawford and Grant counties.

In response to a question from Salvato, Hoke and Kendall agreed to explore nitrate issues further. Anderson said Minnesota faces similar challenges to Wisconsin, especially in the backwater lakes, and observed that excess nitrate levels are a major water quality issue for the Mississippi River.

Good expanded on ILEPA's groundwater quality study in the Havana area using USEPA Section 106 monitoring grant funding. The study focuses on quantifying groundwater contributions of nutrient loading to the Gulf of Mexico. ILEPA has found concentrations as high as 21 mg/L going to the Illinois River and the UMR. Good anticipates that the report will be published in summer or fall 2019. ILEPA is also concerned about fertigation and is working with landowners about alternatives to nutrient application.

Good asked WQTF members whether their respective states' nutrient reduction strategies acknowledge groundwater-surface water interaction contributions to nutrient loading. Anderson confirmed that Minnesota specifies groundwater impacts but does not identify it as a source.

Wallace suggested that a next step is to agree upon a research question and Salvato added that she can put together a literature review of basin-scale studies focused on nitrogen loading via groundwater or groundwater-surface water interactions. Morrison listed USGS publications that the WQTF can utilize as a resource.

Action Items

- **Anderson will follow-up on the nitrate toxicity water quality standard.**
- **WQTF members will report back on whether and how groundwater contributions to nutrient loading are discussed in their respective states' nutrient reduction plans.**
- **UMRBA will conduct a literature review of basin scale groundwater studies.**
- **UMRBA will schedule a call with WQTF members to refine a research question(s) related to nutrient loading in groundwater.**

Chloride

Chloride long-term trends

Illinois – Ettinger reviewed Huff and Huff’s proposed amendment to Illinois’ water pollution regulations regarding the chloride standard. The proposed standard lowers the concentration requirements in the winter given research indicating that ecosystem inhabitants are less sensitive to chloride when exposed at lower temperatures. Ettinger believes the proposal will be revised as there is substantial data showing higher levels of chloride in northeast Illinois. Ettinger said chloride concentrations are at the magnitude of 1,500 times greater following a snow fall. He added that concentrations can be as high as 300-400 mg/L during the summer.

Good presented on chloride concentrations found at ILEPA’s ambient sites, citing that concentrations are high coming out of Chicago. Wallace added that it will be helpful to utilizing in better understanding chloride trends and watershed inputs to the UMR. In addition to trend information, the WQTF can prioritize research and other monitoring and modeling needs.

Iowa – Kendall presented on Iowa’s chloride trends derived from 18 years of ambient stream data (collected monthly). Iowa monitoring sites mostly exhibited a slightly decreasing chloride trend. However, a small portion of sites indicate a rapid increasing trend. One of these sites is located on the Des Moines River near Keokuk. Kendall will report back with the location of the other increasing trend site and explore seasonal variation in chloride concentrations.

Minnesota – Anderson said the Metropolitan Council launched a long-term chloride monitoring network this summer on lakes in the Twin Cities metro area, focusing on chloride impairments.

Anderson said chloride runoff reduction efforts in Minnesota requires a large-scale overhaul of public water infrastructure and replacement of individual household water softeners. Minnesota has found that water softeners account for about 25 percent of chloride sources and road salt accounts for approximately 75 percent. Measures were introduced in the Minnesota legislature to provide limited liability to private salt applicators. This was recommended by the Minnesota Clean Water Council, a 20-member panel that recommends policy to the Governor of Minnesota.

In response to Good’s question, Anderson explained that limited liability coverage is provided by the state of Minnesota. Minnesota will maintain a list of applicators that successfully completed the Smart Salting Program. In response to a question from Ettinger, Anderson said she will report back regarding how wastewater treatment plants remove and dispose of salts. Wilhite and Anderson said new centralized municipal water softeners are lime-based not chloride-based. In response to a question from Giblin, Anderson said she will follow up with Minnesota’s policy for smaller snowfall events – i.e., to plow smaller snowfalls to avoid or minimize salt application.

Missouri – Hoke reported that 28 chloride monitoring sites in Missouri have increasing chloride trends and five have decreasing trends. At the USGS Thebes site, for example, chloride concentrations are increasing and seasonal variation is exhibited in the dataset - i.e., higher in winter and lower in summer.

Wisconsin – Wilhite showed Wisconsin’s long-term chloride monitoring webpage, citing increasing chloride trends statewide. The Root River is increasing more rapidly than others in the state and La Crosse is increasing but at a lesser rate. Giblin added that chloride has increased 77 percent at L&D 9 since the 1980s.

UMRBA Resolution

Salvato overviewed an updated version of the chloride resolution, which includes liability language. Giblin suggested adding a more definitive statement about rising chloride trends and a recommendation for snow plow training. Ettinger expressed concerns regarding the current provision for limited liability and offered to provide input.

In response to a question from Fischer regarding the specific goals of monitoring and research in the resolution, Wallace explained that the resolution would call for 1) UMRR to reinstate chloride monitoring and 2) dedicated resources to chloride monitoring. The latter would include implementing the states UMR Interstate WQ Monitoring Plan. Fischer suggested that UMRBA advocate for resources spent on addressing chloride runoff – e.g., public safety while implementing road salt BMPs. Good agreed with Fischer’s sentiment.

The next steps for the resolution are to undergo another review with the WQTF and WQEC before consulting with the state DOTs.

Outreach Strategy – Audience Development

Salvato introduced an audience profile for the communication and outreach strategy, including each stakeholder group and their respective roles, priorities/concerns, knowledge level about chloride issues, appropriate communication channels, and particular messages that would resonate with them. For example, winter salt applicators would be interested in implementing BMPs as a cost savings measure as well as having a positive image to the local community as environmental stewards. Wilhite suggested including salt storage challenges for municipalities.

Action Items

- **Anderson will follow-up on limited liability and snow plowing practices.**
- **UMRBA will work with Albert Ettinger on the limited liability language for the chloride resolution and request additional review from WQTF members.**
- **UMRBA will schedule an interim call to discuss both the resolution and outreach and communication strategy.**
- **UMRBA will introduce a revised resolution and an outreach framework to the WQEC and WQTF and their June 4-5, 2019 joint meeting.**

Emerging Issues

Salvato reviewed the Nakamaya et al. 2010 study that tested laboratory methods for perfluorinated compounds in the Upper Mississippi River Basin. This research stemmed from Dave Hokansen’s work with USEPA toxicologist Andrew Lindstrom to coordinate PFAS sampling with the five states. Salvato provided a separate attachment of the study’s raw results and discussed the sites with higher levels of the various PFAS compounds. Good added that the UMR PFAS study led to ILEPA modifying their Section 106 monitoring money to sample PFAS.

Illinois – Illinois is planning to sample for PFAS this summer through a similar network setup to the total chromium monitoring. In response to a question from Good, WQTF members mentioned they use Wisconsin State Hygienic Laboratory, Iowa State Hygienic Laboratory and Axys Lab as contractors.

Iowa – Kendall said IADNR does not have PFAS monitoring plans. He mentioned a possible PFAS source: the groundwater plume below the Iowa Ammunition Plant in Middleton, a listed superfund site. The plume is currently being monitored by IADNR staff.

Minnesota – Anderson explained that Minnesota reached an \$850 million settlement with 3M for damage to drinking water and natural resources from the production of perfluorinated compounds. Funds are being used to conduct groundwater and surface water sampling for PFAS, including near the 3M plant in the east metro. MNPCA is actively working to upgrade drinking water supply infrastructure. Additionally, MNPCA’s ambient program conducts PFAS sampling when funding is available. In summer 2018, 70-100 fish were sampled by Axys Laboratory. Minnesota has developed PFAS fish tissue standards and guidance for drinking water.

Missouri – Hoke said Missouri has not detected problems with PFAS and is not actively monitoring.

Wisconsin – Giblin detailed Wisconsin’s plans to sample PFAS in surface water and fish tissue at five sites state wide and in Pools 3, 4, 6 and 8. Fischer added that WIDNR recently participated in a MNPCA-sponsored forum and seminar on PFAS. Wisconsin is using the information gained from the workshop to develop a statewide PFAS monitoring plan.

USEPA – Amy Shields announced that USEPA Regions 5 and 7 have identified PFAS contacts and are allocating resources to host monthly PFAS webinars jointly with the Environmental Council of the States.

Salvato provided an overview of states with proposed or recommended MCLs for PFOA and PFAS, including New Jersey, New Hampshire, and New York. She asked WQTF members if PFAS is a topic they wanted to continue to explore. Fischer expressed support for continued PFAS discussions through UMRBA regarding, noting pervasiveness. Giblin suggested that eagle blood draw as a way to continue PFAS sampling. Kendall said he is interested in sampling to better understand the trophic transfer of PFAS in the food chain.

Action Items

- **UMRBA will monitor and report on PFAS legislation and administration policy at the state and national levels.**
- **UMRBA will distribute PFAS information and links.**

Interstate Water Quality Monitoring Pilot Updates

Reaches 0-3 Pilot

Salvato announced that the Reaches 0-3 Pilot Condition Assessment and Evaluation Reports are published and ready to distribute. UMRBA will draft a press release and distribute to various news outlets such as Big River News and the Waterways Journal. Additionally, Wallace said UMRBA has good relationships with Congressional members and can inform them of the results and value found in this pilot. Good and Giblin recommended a summary document that caters to a non-technical audience – i.e., river users.

Anderson said MNPCA's communication staff can assist in developing and publishing the pilot news release. Timing of messaging is important as Minnesota is getting attention for the Lake Pepin TMDL. Sobotka offered to send the finalized documents to the UMRCC water quality technical section.

Reaches 8-9 Pilot

Members of the WQTF and Reaches 8-9 planning committee discussed questions and ideas for strategically implementing the Reaches 8-9 pilot given insights from the Reaches 0-3 pilot. Key reflections and recommendations are as follows:

- 1) Rather than a full evaluation report, develop a brief summary of the lessons learned in implementing the Interstate WQ Monitoring Plan. Publish a similar condition assessment as the Reaches 0-3 pilot.
- 2) The condition assessment should be written for a technical audience with a supplementary publication for interested individuals and organizations – e.g., interested public, legislators and staff.
- 3) Compelling messages include the utility of data beyond CWA purposes (e.g. chloride and other containments of interest) and opportunities to leverage existing monitoring in the states – e.g., nutrient and sediment monitoring.
- 4) Data analysis and report writing took about one FTE over one month in Wisconsin.
- 5) Data collection forms developed by the pilot planning committee is helpful for ensuring consistent sampling methods and reporting.
- 6) Sampling sites for the Reaches 0-3 pilot was done through a desktop exercise using Google maps. It was important to have nearly all of the planning work completed prior to field sampling given other responsibilities for sampling crews.

Action Items

- **UMRBA will draft a press release for the Reaches 0-3 documents to target audience members with a limited scientific understanding.**
- **UMRBA will send the Reaches 0-3 press release to news outlets and magazines.**
- **Pam Anderson will request assistance from MNPCA's water communication editor for additional ideas on distribution of Reaches 0-3 documents.**
- **Molly Sobotka will send the final documents to the UMRCC WQ Tech Section.**

Administrative Items

- The joint WQTF-WQEC is scheduled for June 4-5, 2019 in the Quad Cities.
- The next WQTF in-person meeting is scheduled for September 17-18 in Quincy, Illinois.

Attendance

Gregg Good	Illinois Environmental Protection Agency
Dave Bierman	Iowa Department of Natural Resources
Roger Bruner	Iowa Department of Natural Resources
Andy Fowler	Iowa Department of Natural Resources
Daniel Kendall	Iowa Department of Natural Resources
Randy Schultz	Iowa Department of Natural Resources
Adam Thiese	Iowa Department of Natural Resources
Susie Dai	Iowa State Hygienic Laboratory
Pam Anderson	Minnesota Pollution Control Agency
Molly Sobotka	Missouri Department of Conservation
John Hoke	Missouri Department of Natural Resources
Robert Voss	Missouri Department of Natural Resources
Jim Fischer	Wisconsin Department of Natural Resources
Shawn Giblin	Wisconsin Department of Natural Resources
Marcia Willhite	Wisconsin Department of Natural Resources
Karen Hagerty	U.S. Army Corps of Engineers, Rock Island District
T. Leo Keller	U.S. Army Corps of Engineers, Rock Island District
Lisa Matthews	U.S. Environmental Protection Agency
Heather Golden	U.S. Environmental Protection Agency, Region 5
Ed Hammer	U.S. Environmental Protection Agency, Region 5
Kim Harris	U.S. Environmental Protection Agency, Region 5
Meghan Hemken	U.S. Environmental Protection Agency, Region 5
Aaron Johnson	U.S. Environmental Protection Agency, Region 5
Jen Philips-Sanderburg	U.S. Environmental Protection Agency, Region 5
Amy Shields	U.S. Environmental Protection Agency, Region 7
Sandy Morrison	U.S. Geological Survey
Albert Ettinger	Mississippi River Collaborative
Ted Kratschmer	National Great Rivers Research and Education Center
Kathy Hawes	Tennessee Clean Water Network
Rebecca Kauten	University of Iowa
Lauren Salvato	Upper Mississippi River Basin Association
Kirsten Wallace	Upper Mississippi River Basin Association