



**Upper Mississippi River Basin Association  
Joint Meeting of the  
Water Quality Executive Committee, and  
Water Quality Task Force, and Other Water  
Quality Partners**

**September 25-26, 2024**

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**Agenda  
with  
Background  
and  
Supporting Materials**

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**Upper Mississippi River Basin Association  
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**Agenda**

Please register to receive connection information using the following links:

- September 25:  
<https://us02web.zoom.us/meeting/register/tZ0scOyupjwsG9eTRGk89UnlafnQuhM8ACeH>
- September 26:  
[https://us02web.zoom.us/meeting/register/tZcvceugrT8uEtTT6N44iTVML\\_tco9mSrROR](https://us02web.zoom.us/meeting/register/tZcvceugrT8uEtTT6N44iTVML_tco9mSrROR)

**Wednesday, September 25**

Time	Attachment	Topic	Presenter
1:00 p.m.		Welcome and Introductions	<b><i>Nicole Vidales, Illinois EPA</i></b>
1:05	A1-A10	Draft Approval of the February 1, 2024 WQTF Draft Meeting Summary	
1:10	B1-B15	UMRBA Water Quality Program <ul style="list-style-type: none"><li>• History and Current Priorities</li></ul>	<b><i>Lauren Salvato, UMRBA</i></b>
1:35	C1-C8	Initiate UMRBA Nutrient Work <ul style="list-style-type: none"><li>• Facilitated Discussion</li></ul>	<b><i>All</i></b>
3:05.		Break	
3:30	D1-D2	Communication and Public Participation in UMRBA's Water Quality Program	<b><i>All</i></b>
5:00 p.m.		Adjourn	

## Thursday, September 26

Time	Attachment	Topic	Presenter
8:30 a.m.		Welcome and Introductions	<b>Nicole Vidales</b> , Illinois EPA
8:40	E	Using a Nutrient Lense to look at the Midwest Conservation Blueprint	<b>Alex Wright</b> , USFWS
9:20	F1-F7	USGS Integrated Water Availability Assessments	<b>Lori Sprague</b> , USGS
10:00		Break	
10:30	G1	Producing Cover Crop Seed for Public Lands Benefitting Water Quality and Wildlife	<b>Adam Schnieders</b> , Iowa DNR
11:00	H1-H3	UMRBA Water Quality Program Workplan	<b>All</b>
12:00 noon		Adjourn	

**ATTACHMENT A**

**February 1, 2024 Water Quality Task Force**  
**Draft Meeting Summary**

*(A-1 to A-10)*

**Upper Mississippi River Basin Association  
Water Quality Task Force Meeting**

**February 1, 2024**

**Draft Highlights and Action Items Summary**

**Approval of the WQTF September 20-21, 2023 Meeting Summary**

The UMRBA Water Quality Task Force (WQTF) approved the September 20-21, 2023 draft highlights and action items summary.

**UMRBA Updates**

*How Clean is the River? Report*

On January 9, 2024, UMRBA officially released the *How Clean is the River?* (HCR) report, an analysis of water quality trends on the Upper Mississippi and Illinois Rivers using data collected from 1989 to 2018. UMRBA staff developed and sent out an embargoed press release to its media contacts in advance and sent an email announcement to its existing partnership and a broader list of stakeholder organizations within the basin that may be interested in the report. Lauren Salvato put together a list of media and partner organizations that published information about the HCR report. Some included live interviews on Wisconsin and Minnesota Public Radio, a press release from Missouri DNR, and newsletter posts from the Minnesota Clean Water Council, the Confluence for Watershed Leaders, and the League of Women Voters. The Milwaukee Journal Sentinel published an article on the report and many affiliated newsrooms picked up the article. Salvato received queries about when the next report would occur. The WQTF suggested the potential for 10-year cycles of the report. Robert Voss said all the R code has been saved and future efforts should be faster.

*Gulf Hypoxia Program*

As of January 30, 2024, UMRBA received the official agreement with USEPA to receive funding through the Bipartisan Infrastructure Law's Gulf Hypoxia Program. During summer 2023, UMRBA was invited to submit a workplan as the Hypoxia Task Force Sub-Basin Committee for the Upper Mississippi River Basin (UMRB). Some of the workplan priorities include the creation of an Upper Mississippi River (UMR) Nutrient Reduction Strategy, an interstate system for continuous learning (also known as adaptive management), and an interstate communications strategy. UMRBA will participate in the Hypoxia Task Force and integrate the Sub-Basin Committee's actions into other interstate water planning.

*UMR Interstate Water Quality Monitoring Plan – Fixed Site Implementation*

On January 31, 2023, the UMRBA WQTF met for a working session to plan out details of implementing its fixed site network, a portion of its UMR Interstate Water Quality Monitoring Plan, from October 2025 to September 2026. Most of the meeting was spent comparing state laboratory methodologies. The WQTF decided that each state agency will process its own samples and will convene multiple discussions to ensure that results are comparable across state agencies.

### *Potential UMR Recreation Survey*

During December 2023, UMRBA staff met with USEPA Region 5's Micah Bennett and Mike Paul, the USEPA national HAB lead, about ways USEPA could support a UMR recreation survey. The N-STEP program is a mechanism to provide technical support (from Tetra Tech, USEPA's contractor). The program has rolling proposal submissions, and the average project is funded in the tens of thousands of dollars. N-STEP can be used to fund two of three phases of the project. First, use funding to develop a sampling assessment and protocol. The second is to implement the survey, although USEPA cannot by law survey the public. The third phase can be funded by N-STEP for assistance with analyzing and synthesizing the results in a report.

USEPA's interest is in states adopting numeric nutrient criteria that come from efforts like a recreation survey, and in the application, the WQTF will have to write how the information will be used. There does not need to be a commitment to adopt criteria, but the use of the information will have to be explicitly included. Salvato asked the WQTF their thoughts on whether N-STEP was a good funding option to pursue.

Voss said for the southern UMR states that developing numeric nutrient criteria would be challenging. He suggested that general narrative criteria would be more palatable for most states as they have more flexibility in how narrative criteria are applied. The conversation would be more approachable with Missouri's stakeholders if the data indicated that levels of turbidity are preventing recreation use. Kendall agreed with Voss and added that Iowa would likely use the information for its waters in need of further investigation list. The waterbody could be added to the 303(d) list but not necessarily be designated as impaired. Shawn Giblin emphasized the power of pairing water data with user perception data. Kim Laing and Erica Becker agreed.

Albert Ettinger acknowledged the reluctance to adopt numeric nutrient criteria, including in Illinois. He asked because state agencies still have to write permits, are there formulas to write permits in the absence of criteria? Can the narrative criteria be translated to permit limits? Voss replied that Missouri DNR uses narrative conditions such as color changes. DNR conducts waste allocation studies to look at up and downstream facilities to see effects on a stream – e.g., diurnal pH swings and dissolved oxygen (DO) changes over 24- and 48-hour periods. Often where DO or algal issues are observed, modeling is done to see what limits permitted facilities need to obtain water quality standards or narrative criteria. Ettinger has observed that once effects are measured, there is already a huge problem – e.g., a stream bed has too much phosphorus and it becomes too challenging to remove. Voss replied that streams have bounced back when facilities reduce nutrients entering waterways. Ettinger asked if the data is publicly available and can be shared. He has not observed such examples in Illinois. Voss said the examples provided are from smaller streams (headwaters up to size three). It is challenging in large streams that have more point source and nonpoint source influences. There is too much noise in the data. Mike Kruse said Missouri also has total phosphorus effluent regulations applicable to major facilities, and nitrogen-related limits applicable to water bodies having a drinking water supply designated use.

## Emerging Contaminants

### *Burrowing Mayfly Status and Trends*

Giblin compared burrowing mayflies to canaries in the coal mine, as the species can serve as a strong indication of the UMR's health. Since the 1980s many have observed mayfly hatch declines, and it has been documented in the literature - e.g., Stepanian et al., 2020. A recent paper by Nowell et al. 2024, made the following conclusions:

- There are multiple lines of evidence indicating pesticides affect stream invertebrate communities
- Bifenthrin, chlordane, fipronil and imidacloprid were observed to be important regional stressors
- The weight of evidence suggests that insecticides are a probable cause of stream invertebrate impairment

Giblin has talked to many experts about the top contaminants of emerging concern, including USGS's Steve Corsi. The experts all generally feel like these are the most problematic for aquatic ecosystems:

- Bifenthrin in sediment
- Neonicotinoids, fipronils, and pyrethroid degradates in water
- PFAS
- Newer seed coatings that change quickly (insecticides and fungicides)

Neonics are the most widely applied insecticides globally. Bifenthrin has been ramping up in use over time in the U.S., particularly concentrated in the Midwest.

Benthic macroinvertebrate sampling was brought back to LTRM after a lapse of funding between 2004 and 2023. The plotted results indicate that many of the pools have all-time lows of mayfly abundance. A lot of silt in the backwater areas has washed away, and there is likely a habitat shift driving the mayfly decline.

Wisconsin DNR stream ecologist Mike Miller and Giblin developed studies to study neonicotinoid concentrations. Giblin selected sites on the UMR at major tributaries (from the St. Croix River to the Platt River) and sampled at L&Ds 3 through 11. Sampling occurred during summer 2021, fall 2021, and spring 2022. The USEPA chronic benchmark is 50 ng/L. However, Giblin used different benchmarks found in the literature when comparing his results. At all sites sampled for total neonicotinoids, none of the sites exceeded the Morrissey et al., 2015 35 ng/L chronic benchmark. Total neonicotinoids include clothianidin, imidacloprid, dinotefuran, acetamiprid, and thiamethoxam.

Miller's portion of the study was a land use stratification design of urban, vegetated crops, row crops, and other land use types (i.e., everything that outside of urban and crop land use types). He produced

box plots of total neonicotinoid concentrations and found that the mean for vegetable production was above the acute toxicity level ( $\geq 200$  ppt according to Morrissey et al., 2015). The row crop and urban box plot means were right about the chronic toxicity level ( $\geq 35$  ppt  $\leq 199$  ppt, Morrissey et al., 2015). Of 122 sites sampled, one or more neonicotinoids were detected at 63 sites, and clothianidin was detected at 61 sites. For vegetable production, 95% of the time total neonicotinoid concentrations exceeded the 35 ppt-199 ppt benchmark and 45% of the time the total neonic concentrations were  $\geq 200$  ppt.

Giblin partnered with the USEPA ORD laboratory to do a wider screening of 31 chemicals in water and sediment. In June 2022, Giblin sampled the same tributary and L&D sites. Based on detections, the top five most detected chemicals were atrazine, metolachlor, acetochlor, sulfentrazone, and clothianidin. The sediment data are still being finalized.

Giblin concluded that this research and others previously cited allow to develop a prioritized list of emerging contaminants. Dan Kendall is the current water quality tech section chair of UMRCC and is working to develop a prioritized list.

In response to a question from Coreen Fallat about any conversations with the Wisconsin DATCP's Bureau of Agrichemical Management, Giblin responded that he is planning future conversations. Nicole Manasco asked Giblin's thoughts on updating sediment quality guidelines. Giblin responded that the discussion and updates should happen more frequently, perhaps on a decadal basis. Wisconsin DNR reviews sediment parameters on a three-to-five-year basis. In response to a question from Salvato about the type of vegetable that has such high uses of clothianidin and imidacloprid, Giblin said that is primarily from potato production in the central sands region of the state. Voss reflected on Giblin's comment about mayfly densities being impacted by sediment and flow. Does Giblin think it is just the fine sediment washing out? Total suspended solids have also been reduced by improved land management practices. Could that be a factor or is it just flow and flushing? Giblin responded that he needs to take a closer look at habitat. It is clear there are substrate changes, but more focused studies will be needed. Voss observed that the location of burrowing species can be patchy. Were the same sites targeted every time? Giblin said they used a probabilistic sampling approach within targeted continuous backwaters. He selected 150 sites to ensure statistical confidence.

### **Investigating the Distribution and Value of Water Quality Benefits along the Mississippi River**

Erin Niehoff works for Dr. Bonnie Keeler's laboratory at the University of Minnesota. She presented the importance of measuring the values considered for water. However, not all values can be quantified – e.g., religious values and historical roots. Studies that gather this information can help policy makers design programs and policies equitably.

Questions that motivate this study are as follows:

- Are policies designed to improve water quality in the Mississippi River efficient? Are they equitable?
- Are they attentive to issues of environmental justice?
- Whose values are valued in policy and programs?



The study includes several layers and approaches: 1) a non-market valuation survey, 2) geospatial data on water contaminants, 3) community engagement and qualitative data analysis, and 4) deploying mobile technologies and community science. The non-market valuation survey is an online contingent survey that will be administered across 2,000 households in counties and parishes bordering the Mississippi River. There will be a community engagement component as well. Keeler's laboratory is using environmental justice tours to explore other values about environmental concerns and how those concerns interact with water. Niehoff has attended tours in Minneapolis, St. Louis, Memphis with upcoming plans for Baton Rouge and New Orleans in 2024.

For the geospatial data on water contaminants, the approach utilizes the risk screening environmental indicator (RSEI) score, which takes into account the fate and transport of contaminants, the size and location of exposed populations, and the chemical's relative toxicity. The lower the RSEI score, the lower the risk. Niehoff commented that there is a lot of variation in contaminants going into the river.

For the community engagement and qualitative data analysis, Keeler's former post-doctoral student used and coded over 600 interviews collected from Relay and Paddle Forwarded expeditions. The coding scheme focused on use, perceptions, and perceived threats to the river. This analysis can help reveal where gaps exist in local, state, and federal policies.

The mobile technology portion is a nontraditional survey method that consists of posting signs on the river and partnering with organizations and agencies to deploy the signs. Those interested in participating in the survey can answer questions via text message and stop answering questions whenever they want. As data come in, Keeler's laboratory can gather and synthesize the data. Right now, signs are posted in English but in future years, more signs will be available in other languages.

Niehoff is looking for more partnerships to spread the distribution of signs. Partners can add two of their own questions if they want to. Niehoff displayed an example of synthesized data at a chat bot deployed at Como Lake in St. Paul, Minnesota. The graph displays how water quality perceptions change with actual water quality measurements in a given year.

Salvato asked what Niehoff is looking for in a partner. Niehoff said it is primarily interest to participate. The study will pay for the post, signs, and shipment. They will even help with installation if it is near the Twin Cities Metro Area. Voss said Missouri doesn't have a lot of riverside parks but there are a number of boat ramps and access points. Missouri Department of Conservation (MDC) manages a lot of the boat ramps. Niehoff said those locations would work and would appreciate a connection to MDC staff. Overlook spots of the river are great too. Giblin also offered to connect Niehoff with local nonprofits in the La Crosse area. In response to a question from Salvato about the time period of data collection, Niehoff said that signs will be posted through spring 2024 and data collected through sometime in 2025.

### **Toxic Cyanobacteria/Harmful Algal Blooms**

#### *2023 Beach Monitoring: Analyzing Multiple Cyanotoxins (Anatoxin, Saxitoxin, Microcystin)*

Kendall presented the history of Iowa's beach sampling program, which consists of routine water quality monitoring at state owned parks and beaches from Memorial Day through Labor Day. Since 2000, *E. coli* has been monitored. Microcystin sampling was added in 2006. In 2023, anatoxin and saxitoxin sampling were added, with the goal of understanding concentrations of both toxins in the state and whether they

correlate with microcystin blooms or are produced independently. Clean Water Act Section 106 funding was used to pay for the analysis.

USEPA does not have recommended recreational advisory levels for anatoxin and saxitoxin. Iowa DNR utilized the World Health Organization's (WHO) values for advisory triggers - 60 ppb for anatoxin and 30 ppb for saxitoxin. Some states have developed their own advisory levels and those vary widely from the WHO's recommended advisory levels.

Anatoxin detections were found in a few Iowa lakes, but they did not correlate with microcystin levels. Saxitoxin levels were below even the lowest advisory level, developed by New Jersey – 0.6 ppb. Saxitoxin levels did not correlate with microcystin levels. Based on these results, Kendall said only anatoxin will be added to Iowa's beach monitoring program. Kendall added there will be future discussion in Iowa about formalizing anatoxin recreational advisory levels.

Salvato asked Kendall how Iowa DNR will pay for anatoxin monitoring moving forward. Kendall said Section 106 money was used to build laboratory capacity, which reduces the cost of processing samples. Giblin appreciated seeing the algal toxin results. Wisconsin is experiencing issues with microcystin and anatoxin as well. There is a wide range of guidance, and it would be nice to have USEPA's values developed. Salvato recalled from Mike Paul's presentation during the WQTF's fall 2023 meeting that there was not a timeline. Bennett said that staff turnover and lack of expertise have contributed to the delay. As USEPA regions get questions about the recreational advisory levels, the regions continue to make requests to headquarters. Bennett also shared that there is a version of the latest Harmful Algal Bloom and Hypoxia Research and Control Act language that includes directed funding to USEPA for the first time. There is no certainty, but if the language passes then much of the funding would likely be passed to states.

### **Upper Mississippi River Monitoring**

#### *Summer 2024 Monitoring Plans*

*U.S. Geological Survey* – Dr. Luke Loken shared that the purpose of the study “Spatial patterns in water quality and cyanobacteria across connectivity gradients and flow regimes in the Upper Mississippi River” is to increase understanding in how water quality varies across connectivity gradients – e.g., from main channel to isolated slough and backwater habitats. Chlorophyll-a may differ in magnitude, which affects the availability of organic matter. Organic matter likely settles more in backwater areas and is transported faster within the main channel. This has a variety of other consequences as it relates to carbon dioxide, oxygen, and methane concentrations. Tributary inputs make this all even more dynamic and variable based on flow.

The Upper Mississippi River Long Term Resource Monitoring (LTRM) has a rich dataset, but this study can build understanding of how other pools function similarly to those well studied and consistently studied LTRM pools.

The research questions are as follows:

- How do lateral connectivity, flow regimes, and tributaries jointly influence spatial patterns in water quality within the Upper Mississippi River?

- How variable are concentrations of chlorophyll-a and phycocyanin within the river?
- What hydrologic and geomorphic features overlap with elevated densities of total and potentially toxic phytoplankton?

The data are collected using Fast Limnology Automated Measurements (FLAMe), a mobile sampling platform designed to measure surface conditions across individual rivers and lakes. Traditional sensor technology is coupled with a global positioning system (GPS) to produce high resolution maps of surface water chemistry. The maps generated identify point source locations, infer processing rates, and produce distributions of surface water conditions. Sensors that will be used in this study are temperature, conductivity, pH, dissolved oxygen, turbidity, chlorophyll, blue green algae, dissolved methane, dissolved carbon dioxide and nitrate. There is potential to add more sensors in the future.

During May through October 2024, Loken and collaborators will conduct multiple latitudinal surveys of connectivity gradients in six pools across the hydrograph. The timeframe is approximately the first full week of each month in Pools 10, 13, 18-21. The second portion of the study is conducting one longitudinal survey from Pool 10 to 26 during “peak” algal biomass in late July or early August 2024. Loken is looking for additional collaborators. They will be in the field and can add additional samples to this effort.

Manasco shared two future projects she was aware of in Pool 19. One will be funded under the Section 204 authority and another one under the Navigation Ecosystem Sustainability Program. Salvato asked how Loken anticipates low flow will impact excursions during summer 2024. Loken said he and collaborators tried to pick a range of flow conditions, but they have to lock in some dates to plan their sampling schedule. Salvato recalled during the kickoff meeting a discussion about adding an intensive analysis in one more pool. Has the pool been selected yet? Loken said they would like to add a pool next to 10 or 13 to have continuity between pools. Kathi Jo Jankowski added that she and collaborators have been trying to choose pools based on the location of ongoing or future restoration projects, location of major tributaries, and having a good span of that region of the UMR, for additional context. If anyone has additional thoughts, Jankowski would be happy to hear them. Giblin suggested pool 11. It is the final pool in Wisconsin waters where islands have not been restored in the lower third of the pool. Lower Pool 11 will likely be a future restoration project location, and some pre-project data would be useful.

*Minnesota* – Laing said in 2023, Minnesota PCA began monitoring the headwaters of the Mississippi River to St. Anthony Falls. Previous sampling efforts took place in 2017: <https://www.pca.state.mn.us/sites/default/files/wq-iw8-08ab.pdf>. In 2024, monitoring will be conducted on the great river portion of the UMR (south of St. Anthony Falls to the border with Iowa). About a year ago a workgroup was formed to define the scope and what needed to be sampled. While the details are being ironed out, Laing said PCA will leverage existing chemistry data collected by partners. Additional monitoring will be brought on to supplement existing datasets. In total, PCA will add fifteen biological sites and seven chemistry sites and utilize its large river sampling approach.

Additionally, with some of Minnesota’s 604b funds, PFAS monitoring will be conducted longitudinally at 45 sites from Lake Itasca and downriver five times during summer 2024. Both a communication strategy and monitoring strategy are in development.

*USEPA Region 7* – Region 7 is developing a monitoring strategy for both the Missouri and Mississippi Rivers as part of its regional water monitoring strategy and to stand up a longer-term monitoring effort.

This would allow Region 7 to go out and routinely sample big river samples. The monitoring plan is near completion.

Missouri DNR and UMRBA asked for analytical partnership to increase the understanding of PFAS on the UMR and to sample at three sites on behalf of Missouri DNR. David Pratt said he will have more information next week once he meets with staff from USEPA Region 7's laboratory. He will ask about their capacity to analyze samples for the UMR and the field service branch's capacity to do field collection.

Region 7's laboratory will have the equipment up and running for the 1633 PFAS method in April or May 2024. Salvato asked if the plans for monitoring in summer 2024 include PFAS? Pratt responded that PFAS data collection is the primary focus for 2024.

### **Shared Water Quality Assessments for the Upper Mississippi River**

Salvato recalled that during the fall 2023 meeting, the WQTF prioritized work for the next two fiscal years. One of those priority topics was how to approach developing shared water quality (WQ) standards and beneficial uses on the UMR. To host an initial conversation, a short survey was designed for each state agency to complete in advance. The questions were as follows:

- Please describe (very broadly) the process of WQ standards development in your state.
- What is working well (e.g., scientific development process) and what is not working well in the development and approval of water quality standards (e.g., administrative law process)?
- Has your state adopted the CWA reaches for the UMR since they were developed in 2003 ([link](#) to report)? Please describe why or why not.
- During its last triennial review of WQ standards with USEPA what major changes occurred?
- Would updating any of the report or figures and tables from State's Approaches to Clean Water Act Monitoring, Assessment, and Impairment Decisions be helpful in future conversations with the WQEC and/or the WQTF? Please elaborate which figures and tables.
- What do you view as a potential path forward for UMRBA's members states developing shared water quality standards e.g., focus on recreational use as a pilot for managing interstate waters?

Reviewing the responses, Salvato observed some similarities:

- Most states adopted the CWA reaches in some form
- The rule making process sounds similar across states
- Challenges associated with the rulemaking process included the labor-intensive nature of standards development, having a backlog of rules to update (also related to staff capacity), and administrative law review.

- Most states were planning to focus on nutrients standards developments in the next five years

Some differences observed in the responses were as follows:

- How to approach shared standards for the UMRB states received a wide range of answers
- A range of responses were received about updating the 2002 Upper Mississippi River Water Quality: the States' Approaches to Clean Water Act Monitoring, Assessment, and Impairment Decisions report. Note I was asking this question to be able to assess UMRBA's resources to make the updates.

Salvato asked for general reflections on the survey results and what the WQTF envisions as next steps. Kendall understood that the CWA reaches were not adopted because Iowa DNR's existing reaches were similar enough. Kendall suggested reevaluating the reaches and uses each state has selected. He sees that as an easier next step. Getting to shared nutrient standards would be very difficult.

Voss suggested updating some tables and figures in the interim. More states are looking at how economic growth can be bolstered with improvements in water quality. That is why Voss suggested avenues of commercial sport and fishing. If there is any way to tie aquatic life use to economics that may be a path to pursue. Missouri also has a lot of public water suppliers that draw from the river. Many of the river's uses depend on the ability to provide potable water. Laing agreed it would be helpful to update some of the reports and figures to understand approaches of what is similar for monitoring, assessment, and impairment decisions.

Voss said his attention was drawn to the lack of staff capacity. An effort like this for UMRBA would be a struggle. Giblin and Becker agreed. Giblin said Wisconsin adopted the CWA reaches, and it has improved the state's assessment. He has observed that states have gotten better at pooling data sets over time. That should be a continual point of emphasis.

### **Administrative Items**

#### *Future Meeting Schedule*

The WQEC-WQTF meeting is scheduled for September 25-26, 2024 in the Twin Cities, Minnesota.

## Participants

Erica Becker	Illinois Environmental Protection Agency
Alex Terlep	Illinois Environmental Protection Agency
Dan Kendall	Iowa Department of Natural Resources
Kim Laing	Minnesota Pollution Control Agency
Mike Kruse	Missouri Department of Natural Resources
Robert Voss	Missouri Department of Natural Resources
Micah Bennett	U.S. Environmental Protection Agency, Region 5
Ed Hammer	U.S. Environmental Protection Agency, Region 5
Cary McElhinney	U.S. Environmental Protection Agency, Region 5
Kathy Roeder	U.S. Environmental Protection Agency, Region 5
Kathryn Vallis	U.S. Environmental Protection Agency, Region 5
Diane Tancl	U.S. Environmental Protection Agency, Region 5
Dane Boring	U.S. Environmental Protection Agency, Region 7
Todd Phillips	U.S. Environmental Protection Agency, Region 7
David Pratt	U.S. Environmental Protection Agency, Region 7
Jared Schmalstieg	U.S. Environmental Protection Agency, Region 7
Anna Hess	U.S. Environmental Protection Agency, Great Lakes Toxicology and Ecology Division
Lauren Salvato	Upper Mississippi River Basin Association
Coreen Fallat	Wisconsin Department of Agriculture, Trade, and Consumer Protection
Tim Asplund	Wisconsin Department of Natural Resources
Shawn Giblin	Wisconsin Department of Natural Resources
Gina Laliberte	Wisconsin Department of Natural Resources
Erin La Russe	U.S. Army Corps of Engineers, Rock Island District
Davi Michl	U.S. Army Corps of Engineers, Rock Island District
Nicole Manasco	U.S. Army Corps of Engineers, Rock Island District
Carl Schoenfield	U.S. Army Corps of Engineers, Rock Island District
Jim Duncker	U.S. Geological Survey, Central Midwest Water Science Center
Kenna Gierke	U.S. Geological Survey, Upper Midwest Environmental Science Center
Kathi Jo Jankowski	U.S. Geological Survey, Upper Midwest Environmental Science Center
Sophia Lafond-Hudson	U.S. Geological Survey, Upper Midwest Water Science Center
Luke Loken	U.S. Geological Survey, Upper Midwest Water Science Center
Paige Mettler	National Great Rivers Research Center
Erin Niehoff	University of Minnesota
Madeleine Castle	Office of Senator Hawley
Albert Ettinger	Mississippi River Collaborative
Doug Daigle	Louisiana Hypoxia Working Group
Debbie Neustadt	Sierra Club
Alicia Vasto	Iowa Environmental Council

## **ATTACHMENT B**

### **Upper Mississippi River Basin Association's Summary of Water Quality Initiatives**

*(B-1 to B-15)*

**Upper Mississippi River Basin Association**  
**Summary of Water Quality Initiatives and Organization**  
**From 1981 to 2020**

(Working Version 7-24-2020)

Note: This summary will be continually updated, and UMRBA staff will be asking for review by individuals who were involved in the work at various points in UMRBA's history.

**Purpose**

This historical summary of Upper Mississippi River Basin Association's (UMRBA) water quality work serves two purposes. More immediately, it should provide a basis of understanding needed among WQEC to effectively provide input into strategic planning for UMRBA's water quality work. Secondly, UMRBA staff will update this document every few years and provide it as a resource to new WQEC and WQTF members.

**Brief Overview**

UMRBA established an Upper Mississippi River (UMR) Water Quality Initiative in 1992 in order to design a regional, integrated water quality protection strategy with goals and objectives for future action. The Initiative focused on two primary issues: sedimentation and toxic pollution. Ultimately striving for a regional water quality protection program, the states set the following vision:

*Recognizing the Upper Mississippi River as a unique and nationally significant ecosystem, the five member states of the Upper Mississippi River Basin Association are committed to ensuring the long-term viability and balanced multiple use of the river as a sustainable, diverse, and healthy resource for the benefit of the nation's and region's economy and ecology. Toward this end, the Basin states will work cooperatively with both the public and private sectors to maintain and enhance the river's water quality based on an understanding of the Upper Mississippi River's integral relationship to its tributaries and surrounding lands.*

As a first step in implementing the Initiative, UMRBA hosted regional discussions among water quality experts focused on defining quantifiable criteria for toxic pollutants and sediment/sedimentation and targeting reduction in the river and tributaries. These resulting recommendations underscored the need for significant resources and effort to successfully organize and implement a successful water pollution control strategy for the UMR, and that a strong expression of the states' commitment at the highest policy level will be required to compel meaningful federal investment. This led to UMRBA's first attempt at establishing the WQTF in 1993 to create a long-term water quality protection strategy for the river as well as to address more immediate issues, such as the CWA reauthorization.

For a variety of reasons, the WQTF was not sustained but was revived 1998, when a variety of issues were requiring interstate coordination – i.e., nutrients and Gulf of Mexico hypoxia, source water protection, unified watershed assessments, 303(d) listings and TMDLs, and biocriteria. The UMRBA Board also favored a standing committee, in part, to gain influence with the US Environmental Protection Agency (USEPA). Using a 1997 Joint Governors' proclamation to work through UMRBA, the Association established a partnering agreement between UMRBA and USEPA that ultimately led to short term funding of project-specific work.



In the early 2000s, UMRBA started to build the foundation of interstate water quality coordination by identifying and explaining the differences among the states' policies and programs – e.g., designated uses and 305(b)/303(d) assessments. Given that the Hypoxia Task Force focused on nutrient-related issues, UMRBA focused its attention on impaired waters. In 2003, the UMR states formally adopted an interstate MOU agreeing to utilize a common set of assessment reaches for use in the development of their CWA 305(b) assessments and 303(d) impaired waters listings. The use of uniform assessment reaches was viewed as a major accomplishment to facilitate interstate comparisons and to provide a common foundation for ongoing and future interstate coordination efforts.

A 2004 UMRBA report shared the states' observation that interstate waters are inherently challenged within the USEPA's CWA construct, which provides flexibility to the states to implement a national framework. A few noteworthy (and relevant) conclusions in the 2004 report included the following:

- Enhanced consistency and coordination of water quality management on the UMR is both necessary and possible
- Despite the potential for enhanced consistency, there are limitations to achieving uniformity – e.g., intrastate consistency consideration, state law and regulation, and time and resources
- Developing TMDLs on interstate waters (e.g., UMR) will be a significant challenge due to scientific complexity, differences in state standards and impairment listings, political and policy limitations, lack of resources and priority, and the absence of a mechanism for interstate coordination

This report led to the Association's focus on enhancing consistency in the states' fish consumption advisories (FCAs) and sedimentation-related impairments. While the resulting 2005 report maintained that there should be consistent FCAs for the UMR (lack of consistency generates confusion and unfavorable public perception), the CWA Section 305(b) assessment and the Section 303(d) listing process should be revisited after obtaining consistency in data and fish consumption advisories.

UMRBA's evaluation of sediment-related impairments in subsequent years resulted in a suite of "consensus statements," conclusions, and recommendations. Much more detail can be found in the 2007 issue paper on sediment-related water quality criteria for the UMR. As a basic summary, the consensus statements represented shared understandings – e.g., "the existing sediment regime is not in equilibrium and net deposition is occurring in certain areas of the river and its backwaters." Recommendations included that states and USEPA, working through UMRBA, should express their shared commitment to working on these issues through an MOU and develop:

- A guidance document for the states to develop sediment-related water quality criteria for the UMR
- A white paper evaluating alternative approaches to address bedded sediment on the UMR
- A list of research needs to help guide further investigations regarding sediment-related water quality problems on the UMR

In 2005, UMRBA initiated a study to evaluate the feasibility of establishing an interstate structure on the UMR with the capacity to coordinate and/or administer CWA water quality programs. The 2006 *Organizational Options* report recommended the establishment of an interstate water quality agency for the UMR that coordinates and works on behalf of the states to fulfill their responsibilities under the CWA, with an initial focus on water pollution control activities. The responsibility should be shared among the states and USEPA, under its Section 103 obligations. The states expected that USEPA would provide financial support, actively participate, and recognize

the legitimacy of the interstate consultation processes and products that result. The report outlined an incremental process to establish the interstate agency, building upon the existing UMRBA. The first step was to create the WQEC to provide policy direction for the technical work of the WQTF, ensuring that the products and efforts of the WQTF are recognized and incorporated, as appropriate, into the water quality programs of the states' environmental protection agencies.

The report concluded that there are critical unmet needs that can be best addressed by the UMR states working together. States can maximize their limited resources by pooling them, thereby avoiding unnecessary duplication of effort, adding value through consolidation or collaboration, and leveraging outside funding sources to advance water quality research and management efforts on the UMR. In addition, by working together on the UMR, through the UMRBA, the states can increase the transparency and predictability of the regulatory process, enhance public understanding and confidence, and reduce the states' vulnerability to legal challenges that may arise as a result of regulatory inconsistencies.

The UMR states commitment was further expressed in a 2007 joint Governors proclamation expressing support for a coordinated approach for protecting the UMR's water quality and requesting that the federal government join as a partner. The Governors stated their commitment to protecting the river's water quality and to doing so in a coordinated manner – i.e., coordination of water quality monitoring, assessment, and standards for the UMR. The Governors called for federal investment commensurate with other nationally significant waterbodies (e.g., Ohio River, Great Lakes, and Chesapeake Bay) and urged Congress to provide the necessary resources for a successful UMR water quality program and USEPA to support the effort through involvement of its Regions and by establishing dedicated funding within its budget.

In 2007, the WQEC developed a one-page proposal outlining the need for \$200,000 annually from USEPA to support UMRBA's water quality work. While the WQEC was putting together a strategy to "ramp up" the Association's water quality efforts and proposed considering an additional water quality staff, the UMRBA Board was cautious that funding to support UMRBA's work not come at the expense of other funding streams. The WQEC sought supplemental USEPA funding for UMRBA's work (i.e., would not come from the states' Section 106 grants). UMRBA has received a few USEPA grants over the past decade for project-specific work. At this time, the states were providing UMRBA with \$20,000 for a voluntary water quality assessment. This assessment has remained the same, but is being adjusted to account for a one-year inflation starting in FY 2021.

Subsequently, from 2008 to the present, UMRBA has focused on developing a shared assessment of the UMR, publishing the Interstate Water Quality Recommended Monitoring Plan in 2014 and coordinating two pilot projects.

In 2017-2018, the WQEC agreed to prioritize its work on the interstate water quality monitoring and assessment work and the states' nutrient reduction strategies as well as HABs, chloride, and emerging contaminants.

## **Detailed Summary**

UMRBA was formed in 1981 by the Governors' of Minnesota, Wisconsin, Illinois, Iowa and Missouri to coordinate the states' river-related programs and policies. UMRBA has engaged in water quality issues to varying degrees since its inception, but overall, has grown and evolved with time.

### Assessing the UMR's WQ Condition (1980s)

In 1989, UMRBA published the report, *How Clean is the River?*, to describe the water quality condition on the Upper Mississippi River. The report acknowledged that the states' water quality standards affect the way they

determine and describe water quality – i.e., “a state with less restrictive standards will likely consider the water quality of the river to be better than that described by a state with more restrictive standards.” Fewer standards will likely result in fewer exceedances. Thus, the states’ descriptions of water quality vary depending on the number, type, and severity of the standards.

Acknowledging the complexity and dynamic nature of the river system, the report concludes that no single monitoring approach was sufficient and examined water quality conditions through five different methods. Using USGS National Water Quality Assessment datasets spanning 1972 to 1986, the report evaluated the UMR’s water quality condition by exceedances of standards, support uses (i.e., national goals), quality of the fishery, sediment quality, and spatial and temporal trends. It found that 69 percent of the river (approximately 583 miles) has water quality problems, with the majority of those problems concentrated at the upstream and downstream ends of the river. Stretches of the river with the best water quality were between L&Ds 10 and 19 as well as L&Ds 20 and 21 – i.e., away from the major metropolitan areas and major tributaries (Minnesota, Illinois, and Missouri Rivers). The most pervasive water quality problem was the degradation of the fishery resource. This report set the course in subsequent years for UMRBA’s focus on sedimentation and toxic pollutants.

Another notable water quality trend publication was produced by the Upper Mississippi River Conservation Committee (UMRCC) in 2002, which evaluated 11 water quality parameters from 1980-1999 utilizing state and federal datasets. One of five recommendations provided in the report was for the states and federal agencies to coordinate consistent sampling and analysis of contaminant concentrations in fish from the Upper Mississippi River mainstem at five-year intervals, noting that the lack of a uniform approach limits the ability to assess temporal or spatial changes.

#### Origins of UMRBA’s WQ Program (1990s)

UMRBA established a UMR Water Quality Initiative in 1992 in order to design a regional, integrated water quality protection strategy with goals and objectives for future action. The Initiative focused on two primary issues: sedimentation and toxic pollution. Ultimately striving for a regional water quality protection program, the states set the following vision:

*Recognizing the Upper Mississippi River as a unique and nationally significant ecosystem, the five member states of the Upper Mississippi River Basin Association are committed to ensuring the long-term viability and balanced multiple use of the river as a sustainable, diverse, and healthy resource for the benefit of the nation’s and region’s economy and ecology. Toward this end, the Basin states will work cooperatively with both the public and private sectors to maintain and enhance the river’s water quality based on an understanding of the Upper Mississippi River’s integral relationship to its tributaries and surrounding lands.*

Strategies to address those issues included establishing quantifiable reduction goals followed by the identification and prioritization of sources of pollution. Additional strategies for both issue areas included targeting sediment and toxic pollutant reduction, coordinating monitoring and existing “reduction” programs, conducting a public information and education campaign, and gaining agreement among public agencies, industry, agriculture, environmental groups, and other interested parties on how to implement sediment and toxic pollutant reduction in targeted areas.

UMRBA hosted two regional workshops in February 1993, with one focused on sedimentation and the other on toxic pollution. This was the first step in implementing the Initiative. The agendas were framed around the strategies. More foundational and relevant findings and conclusions are as follows:

- Toxic pollutants were prioritized based on their concern for a) human health and b) riverine biota. The primary toxic substances of concern related to human health were PCBs and chlordane due to fish consumption. Atrazine and nitrate were of greatest concern for the risks they pose to drinking water. It was noted that dieldrin may have surpassed chlordane if the states had adopted USEPA’s risk assessment methods for evaluating fish contaminant data.
- Knowledge of the tremendously complex interrelationships among sediment delivery rates, erosion rates, accumulation rates, sediment contamination, and so forth is limited. While these limitations are undeniable, so too is the practical reality that complete understanding of sediment delivery and movement is unlikely to be achieved. Therefore, a set of considerations were outlined for establishing reasonable goals. Those considerations remain relevant today. For example, given imperfect knowledge, any sediment reduction effort is likely to be an iterative process and interim reduction goals could be reviewed and adjusted. Participants at the sedimentation workshop set the following interim qualitative goal: “minimize sedimentation rates to sustain and improve human, fish, and wildlife resources for the foreseeable future.”
- Significant resources and effort are required to proceed further with the development of a water pollution control strategy for the UMR, and cannot be accomplished successfully in an *ad hoc* fashion. While there are a number of federal-level opportunities for support that could be pursued (e.g., CWA reauthorization, farm bill), federal support is not likely to be forthcoming absent a strong expression of state support. Participants recommend that each basin state make a clear and definitive commitment to this effort at the highest policy level.

#### Establishing an Interstate WQ Program (1997-1999)

UMRBA initially formed the WQTF in 1993 to create a long-term water quality protection strategy for the river as well as to address more immediate issues, such as the reauthorization of the Clean Water Act (CWA). The WQTF was not sustained for a variety of reasons, including other priorities and Association resources.

UMRBA “revived” and basically created a new the WQTF in 1998 with its first meeting held on April 8, 1999. The UMRBA Board sought enhanced interstate coordination on water quality issues, specifically nutrients and Gulf of Mexico hypoxia, source water protection, unified watershed assessments, 303(d) listings and TMDLs, and biocriteria. At the time, USEPA was in the process of writing letters to the directors of each of the state environmental quality agencies, requesting that they support the formation of a group to deal specifically with biocriteria for the UMR. The UMRCC also expressed interest in working cooperatively with UMRBA on biocriteria. The UMRCC acknowledged that it was comprised of volunteers and, therefore, are limited in their ability to function at the direction of another organization. Additionally, UMRCC can provide technical expertise, but needed the partnership of UMRBA to address policy and regulatory issues. A higher level of management support was needed for the establishment and adoption of biocriteria. The UMRBA Board also favored a standing committee, in part, because of the lack of influence which the states have with USEPA. The request to the states was to appoint a policy-level individual to serve on the WQTF.

In 1997, the UMR state governors published a joint proclamation that outlined a suite of principles for integrated river management and reaffirmed their individual and collective support for UMRBA as the forum to unify the states’ river-related policies and articulate their mutual concerns and shared vision for UMR management. This joint proclamation, in addition to the elevated water quality issues through the WQTF, was used to established a partnering agreement between UMRBA and USEPA. The agreement was used to seek a USEPA’s commitment to engage in UMR interstate water quality issues and to be responsive to the states’ priorities. It included the following provisions:

- Utilize UMRBA as a coordinating body for UMR related issues
- Inform and exchange ideas related to river management activities, policies, and programs
- Facilitate, coordinate, and cooperate among state and federal agencies with river related interests
- Actively and regularly participate in UMRBA meetings

Building the Foundation for States' Shared CWA Assessments on the UMR (2000 – 2004)

The WQTF was primarily supported by federal and private grants in the 2000s, funding a dedicated, part-time UMRBA staff person to carryout project-specific objectives. In the early 2000s, UMRBA started to build the foundation of interstate water quality coordination by identifying and explaining the differences among the states' policies and programs – e.g., designated uses and 305(b)/303(d) assessments. Section 104(b)(3) grant funding supported this work.

Given that the Hypoxia Task Force focused on nutrient-related issues, UMRBA focused its attention on impaired waters.

In 2003, the UMR states formally adopted an interstate MOU agreeing to utilize a common set of assessment reaches for use in the development of their CWA 305(b) assessments and 303(d) impaired waters listings. The use of uniform assessment reaches was viewed as a major accomplishment to facilitate interstate comparisons and to provide a common foundation for ongoing and future interstate coordination efforts.

UMRBA published a report in 2004 discussing the challenges and opportunities for a coordinated CWA program on the UMR, namely, *the States' Approaches to Clean Water Act Monitoring, Assessment, and Impairment Decisions*. The report recognizes that interstate waters are inherently challenged within the USEPA's CWA construct, which provides flexibility to the states to implement a national framework. The UMRBA WQTF developed the following conclusions:

- Water quality monitoring data on the UMR are currently inadequate for assessing use support and impairments
- The extent to which states utilize UMR water quality data from other sources varies considerably
- Existing chemical and physical numeric criteria are not sufficient to fully assess UMR ecosystem health; additional tools are required, including large river biocriteria, indicators of nonpoint source impairments, and numeric criteria embodied in standards
- There are a variety of inconsistencies among the five states' 305(b) assessments and 303(d) impairment lists for the UMR, resulting from differences in data interpretation and utilization, river functions and uses, and state water quality standards
- Some of the differences stated above are explainable and appropriate; however, the fundamental question is whether those differences lead to unequal levels of protection
- Enhanced consistency and coordination of water quality management on the UMR is both necessary and possible
- Despite the potential for enhanced consistency, there are limitations to achieving uniformity – e.g., intrastate consistency consideration, state law and regulation, and time and resources

- Developing TMDLs on interstate waters (e.g., UMR) will be a significant challenge due to scientific complexity, differences in state standards and impairment listings, political and policy limitations, lack of resources and priority, and the absence of a mechanism for interstate coordination

Building from the 2004 report, in that same year, USEPA awarded additional grant funding to develop recommendations for enhancing consistency in the states' fish consumption advisories (FCAs) and sedimentation-related impairments.

UMRBA evaluated how FCAs are developed, their use in making impairment decisions, the basis for and implication of differences among the states, and options for enhancing consistency. While the resulting 2005 report maintained that there should be consistent FCAs for the UMR (lack of consistency generates confusion and unfavorable public perception), the CWA Section 305(b) assessment and the Section 303(d) listing process should be revisited after obtaining consistency in data and fish consumption advisories. A minimum set of contaminants, fish species, size classes, and sampling locations, periods, frequencies, and preparation procedures should be established. Two more noteworthy follow-on tasks for UMRBA included:

- Establish an interstate work group, including the USEPA, to develop a minimum fish consumption contaminant monitoring program for the UMR
- Host another workshop to revisit the 305(b) assessment and 303(d) listing process after progress is made in obtaining consistency in fish tissue monitoring and issuance of consumption advisories

UMRBA's evaluation of sediment-related impairments resulted in a suite of "consensus statements," conclusions, and recommendations. Much more detail can be found in the 2007 issue paper on sediment-related water quality criteria for the UMR. As a basic summary, the consensus statements represented shared understandings – e.g., "the existing sediment regime is not in equilibrium and net deposition is occurring in certain areas of the river and its backwaters." Recommendations included that states and USEPA, working through UMRBA, should express their shared commitment to working on these issues through an MOU and develop:

- A guidance document for the states to develop sediment-related water quality criteria for the UMR

Guidance was the preferred tool to accommodate the states' varying ability to incorporate changes into standards and the varying speed at which the states' processes can accommodate changes as well as to provide the states with the flexibility needed to adapt and incorporate recommended criteria. This approach also gives the states time to "test" the criteria before committing to statute and/or rule.

- A white paper evaluating alternative approaches to address bedded sediment on the UMR
- A list of research needs to help guide further investigations regarding sediment-related water quality problems on the UMR

### Evaluating Interstate Organizational Options

#### *UMRBA Staffing*

At this time, UMRBA's Executive Director (Holly Stoerker) and Associate Director (Barb Naramore) implemented the Association's water quality-related work. Upon Naramore's pending departure in 2005, the UMRBA Board agreed to create two new positions: a Water Quality Program Director and an Ecosystem and Navigation Program

Director. Dave Hokanson was hired to assume the former position and Naramore was later retained to assume the latter position. After staff transition in 2017-2018, those two positions were renamed to Policy and Program Directors in an effort to acknowledge integrated river management.

### *Strategic Planning Regarding Organizational Options*

In 2005, UMRBA initiated a study to evaluate the feasibility of establishing an interstate structure on the UMR with the capacity to coordinate and/or administer water quality programs under the CWA. The project's purpose was to help the states identify what type of functions they would like an interstate water quality organization to serve and then to explore options for achieving that goal. Of particular interest was whether UMRBA might be eligible to receive CWA Section 106 funds to support such work.

This evaluation is documented in the 2006 *Organizational Options* report, which included the following recommendations:

- The UMR states should establish an interstate water quality agency for the UMR that coordinates and works on behalf of the states to fulfill their responsibilities under the CWA. The interstate water quality agency would be:
  - Dedicated to preventing pollution and protecting and restoring the river's water quality
  - Recognized as the "go to" agency for information on the river's water quality
  - Capable of doing what no single state can do alone

- The primary focus of an UMR interstate water quality agency should initially be on implementing water pollution control activities, under the CWA, on the main stem of the UMR

Although there are a wide variety of water quality problems that may benefit from interstate coordination, it is important to begin by focusing on a well-defined and limited suite of activities. The framework provided by the CWA (i.e., standards, monitoring, assessment, and control strategies) is an excellent start, particularly on an interstate border river.

- The five states and USEPA should share responsibility for funding an interstate water quality agency on the UMR

The states cannot and should not be solely responsible for supporting the work of an interstate water quality agency on the UMR. The USEPA has responsibility under CWA Section 103 (i.e., to encourage cooperative activities, uniform state laws, and compacts between states) and, thus, the states expect USEPA to provide financial support, actively participate, and recognize the legitimacy of the interstate consultation processes and products that result.

A primary question coming into the planning effort was whether UMRBA would be eligible to receive Section 106 funds to support the interstate work. The answer is that only interstate agencies in existence at the time that the CWA was enacted in 1972 are eligible to receive funding under Section 106. Therefore, no interstate organization on the UMR is eligible to receive the funding, even if a new entity was created that had substantial responsibilities under the CWA. The 2006 *Organizational Options* report concludes that this artifact of history puts the UMR at a distinct disadvantage compared to a number of other interstate waterbodies that have equally challenging water pollution control problems to address. It is incumbent upon USEPA to work with the states to find alternative sources of funding.

- An incremental process should be employed to move from the status quo to a future interstate water quality agency on the UMR that has greater authority and capacity to work with and act on behalf of the five states.

That interstate water quality agency should be created by building upon the existing UMRBA. The recommended incremental process was as follows:

- Establish a UMRBA WQEC to provide policy direction for the technical work of the WQTF, ensuring that the products and efforts of the WQTF are recognized and incorporated, as appropriate, into the water quality programs of the states' environmental protection agencies.

While the WQTF was primarily established to address policy-related matters, its work over its first six years required the expertise and experience of technical staff.

- Enhance UMRBA's capacity to address interstate water quality issues by increasing staff and resources devoted to CWA activities

The Organizational Options report noted that other interstate commissions with similar water quality functions as those envisioned for UMRBA have staff that are 3 to 7 times the size of the current UMRBA staff.

- Reevaluate and determine the need for an interstate compact in the future

The report concluded that there are critical unmet needs that can be best addressed by the UMR states working together. States can maximize their limited resources by pooling them, thereby avoiding unnecessary duplication of effort, adding value through consolidation or collaboration, and leveraging outside funding sources to advance water quality research and management efforts on the UMR. In addition, by working together on the UMR, through the UMRBA, the states can increase the transparency and predictability of the regulatory process, enhance public understanding and confidence, and reduce the states' vulnerability to legal challenges that may arise as a result of regulatory inconsistencies.

The WQEC was being established simultaneously as this report was being finalized. Its 2006 Charter provides that its primary focus is on implementing the states' CWA responsibilities on the interstate portion of the UMR main stem. The WQEC's specific roles and responsibilities are as follows:

- Provide a forum for state water quality administrators to discuss policy, programmatic, and budgetary issues related to implementation of the CWA on the UMR
- Discuss and promote the member agencies' perspectives on river-related water quality policy, programmatic, and budgetary issues with USEPA
- Seek to establish a consensus among the basin states' water quality administrators on major issues related to implementation of the CWA on the UMR
- Promote effective joint implementation of CWA responsibilities by the UMR states
- Appoint a representative(s) from their agency to the UMRBA WQTF, which is an interstate working group of water quality agency staff
- Provide policy direction for the work of the UMRBA WQTF and act upon reports forwarded by the Task Force
- Ensure that the products and efforts of the WQTF are recognized and incorporated, as appropriate, into the water quality programs of the States' environmental protection agencies
- Foster coordination between the states' water quality agencies and other state and federal agencies, particularly those represented on UMRBA

*USEPA's Environmental Monitoring and Assessment Program*



USEPA Office of Research and Development (ORD) administered the Environmental Monitoring and Assessment Program (EMAP) to monitor and assess the status and trends of national ecological resources. EMAP aimed to advance the science of ecological monitoring and ecological risk assessment, guide national monitoring with improved scientific understanding of ecosystem integrity and dynamics, and demonstrate multi-agency monitoring through large regional projects. Data were collected from 1990 to 2006, and specifically from 2004 to 2006 on the UMR as a part of EMAP's Great Rivers Ecosystem initiative. The Upper Mississippi River Restoration programs' long-term resource monitoring was contracted to carry out sampling and laboratory analysis.

The program was considered successful in executing a collaborative and statistically-valid monitoring approach. USEPA's goal was to demonstrate large regional projects, but not fund projects beyond the two-year implementation. Following the 2004-2006 sampling, ORD approached the WQTF about responding to its requests for applications (RFA) to use EMAP GRE data in CWA assessments. UMRBA was unable to apply for the RFA because it does not have CWA responsibilities, and the five states did not have the capacity to add additional sampling and analysis to their water quality programs. Additionally, it was not clear that the EMAP GRE data were able to be utilized in states' CWA assessments. Monitoring of the nation's aquatic resources is now being routinely conducted through the National Aquatic Resource Surveys program, under the purview of USEPA's Office of Water.

The EMAP-GRE design was ultimately incorporated into the WQTF's development of the Interstate Water Quality Monitoring Plan. [Note: The Plan will be discussed later in this summary]. USEPA ORD staff, along with Region 5's Pete Redmond and Bill Franz and Region 7's Larry Shephard, aided the WQTF in adapting the interstate monitoring approach for seamless system-wide assessments by aligning the states' management requirements, priorities, and resources (i.e., budgets) with the ecological monitoring and assessment goals for the UMR.

#### *Governors' Joint Proclamation*

In 2007, the UMR state Governors issued a joint proclamation expressing support for a coordinated approach for protecting the UMR's water quality and requesting that the federal government join as a partner. The Governors stated their commitment to protecting the river's water quality and to doing so in a coordinated manner – i.e., coordination of water quality monitoring, assessment, and standards for the UMR. The Governors called for federal investment commensurate with other nationally significant waterbodies (e.g., Ohio River, Great Lakes, and Chesapeake Bay) and urged Congress to provide the necessary resources for a successful UMR water quality program and USEPA to support the effort through involvement of its Regions and by establishing dedicated funding within its budget.

USEPA responded to UMRBA by creating a Mississippi River Team in Region 5 (that mostly consisted of one person, Bill Franz) and including the Mississippi River in its 2009-2014 strategic plan. Unfortunately, the agency's recent strategic planning has overlooked the Mississippi River Basin.

#### *National Research Council's Mississippi River Water Quality Review*

Also in 2007, the National Research Council (NRC) studied the environmental and institutional challenges to improving water quality on the Mississippi River, releasing a report titled "Mississippi River Water Quality and the Clean Water Act: Progresses, Challenges and Opportunities." UMRBA staff provided input into the report's development. The NRC recommended that USEPA and USDA jointly establish a Nutrient Control Implementation Initiative to monitor, research, and implement nutrient reduction projects. Association staff utilized the opportunity to emphasize that UMRBA is the right regional consulting body with long standing relationships in place, citing the 2007 Governor's Proclamation on Water Quality. And, that consistent federal funding is needed to address the water quality issues.

Relatedly, NRCS launched the Mississippi River Basin Initiative in 2009 and the National Water Quality Initiative in 2012.

### *Funding*

In 2007, the WQEC developed a one-page proposal outlining the need for \$200,000 annually from USEPA to support UMRBA's water quality work. While the WQEC was putting together a strategy to "ramp up" the Association's water quality efforts and proposed considering an additional water quality staff, the UMRBA Board was cautious that funding to support UMRBA's work not come at the expense of other funding streams. The WQEC sought supplemental USEPA funding for UMRBA's work (i.e., would not come from the states' Section 106 grants). UMRBA has received a few USEPA grants over the past decade for project-specific work. At this time, the states were providing UMRBA with \$20,000 for a voluntary water quality assessment. This assessment has remained the same, but is being adjusted to account for a one-year inflation starting in FY 2021.

### Implementing the States' Water Quality Priorities (2007 to 2020)

#### *CWA Monitoring and Assessments*

In 2007-2008, the WQEC and WQTF wrestled with the question of whether there should be a unique set of designated uses for the UMR.

In 2009, UMRBA hosted a Clean Water Act-Ecosystem Restoration workshop to explore the potential applications of biological indicators in CWA and ecosystem restoration programs on the UMR. One of the next steps from the workshop, which influenced later work, was for the WQTF to develop biological assessment guidance for the UMR. Around the same time, UMRBA applied for 604(b) funding to explore regional nutrient conversations by focusing on the water quality issues most pertinent to the mainstem UMR and by bringing together policy makers and practitioners from CWA and agricultural conservation programs.

UMRBA contracted with the Midwest Biodiversity Initiative (MBI) in 2010-2011 to evaluate whether any existing biological monitoring programs could help support a future, biology-drive UMR CWA aquatic life use assessment. MBI found that none of the existing programs currently collect biological data on the UMR provide a seamless substitute for the preferred EMAP-GRE approach. MBI advised that, if the states choose to move forward with a sustained effort, they will need to consider if and how to work from existing programs in implementing a future UMR biological assessment, especially if a new "EMAP-GRE like" program is not forthcoming. Ideally a single entity would execute and manage a future UMR bioassessment. The rationale for this approach includes addressing concerns that naturally accompany a multiple entity approach. These concerns include the obvious standardization challenges, but also study design, data management, and data analysis issues. MBI recommends that the single entity option be considered in monitoring strategy development, even if a multiple entity approach is perhaps a more realistic outcome. Moreover, a monitoring strategy blueprint for all aspects of a standardized main channel bioassessment is necessary whether a single entity or multiple entities actually conduct the work. In addition, MBI suggested the following next steps for the UMR states:

1. Develop a UMR-wide CWA monitoring strategy incorporating biological indicators
2. Include an intensive, longitudinal pollution survey design as the core of the strategy for bioassessment
3. Examine programmatic options for implementing such a strategy, identifying the costs and technical pros and cons of each option

4. Use the biological assemblage, biological index, and biocriteria threshold recommendations made here as the basis for an initial biological assessment of the UMR main channel, with future assessments based on a new monitoring program
5. Develop and utilize a data management system that is easy to use and access, and that delivers data in a portable and relational format

In 2011, UMRBA published the *Upper Mississippi River Nutrient Monitoring Occurrence and Local Impacts* report that analyzed and recommended improvements for monitoring and data collection; nutrient sources, concentrations, and trends; CWA designated uses; and CWA implementation. The underlying conversations leading up to the report were that nutrient reduction in the Basin is challenging for a variety of reasons including lag time and nutrient sources, but partnerships, monitoring and transparency to the public are essential components of nutrient reduction. This report, in part, led to UMRBA applying in 2014 for funding through the Regional Conservation Partnership Program. UMRBA was not selected as a recipient.

From 2009-2011, UMRBA utilized an Intergovernmental Personnel Agreement with USEPA Region 5. Peg Donnelly from USEPA Region 5 helped UMRBA and the WQTF produce the *Aquatic Life Designated Uses* report in 2012 that evaluated states' approaches and made recommendations on next steps for UMR aquatic life uses. USEPA Region 5 staff, Bill Franz was particularly key in arranging and securing this funding opportunity. Bill Franz was focused on Mississippi River programs and initiatives and was actively involved in UMRBA water quality committees and the Board.

The culmination of UMRBA's work over time ultimately resulted in the development and implementation of the UMR Interstate Water Quality Recommended Monitoring Plan. [Note: The plan was originally called the CWA Recommend Monitoring Plan]. Through a 2014 UMRBA resolution, the states formally adopted the Plan and committed to securing the resources, developing the infrastructure, and establishing the procedures needed for implementation.

The Recommended Monitoring Plan provides a shared water quality monitoring approach based on the four designated uses of the river – i.e., recreation, aquatic life, fish consumption, and drinking water. The WQTF adopted the EMAP-GRE method in the Plan, and utilized USEPA ORD for consultation during the Plan's development. While the states agreed that the shared monitoring would be implemented from 2013 to 2022, one piloting effort is complete and a second is in progress. The purpose for these pilots is to test and demonstrate the feasibility and effectiveness of the Recommended Monitoring Plan. Minnesota and Wisconsin implemented the first pilot in Clean Water Act Reaches 0-3 in 2016 after about two years of intensive planning. Illinois, Iowa, and Missouri are participating in the second pilot on Reaches 8-9. Relevant documents developed to aid the Reaches 0-3 pilot's implementation included the *Provisional Assessment (2017)* and the *Field Operations Manual (2017)*. Many lessons learned were carried into the Reaches 8-9 pilot. After the conclusion of the Reaches 8-9 pilot, the water quality committees will discuss how the Recommended Monitoring Plan can be implemented and scaled up to the entire UMR and whether there is a dedicated and consistent funding source. Another major consideration is whether the EMAP-GRE method is still suitable for the Recommended Monitoring Plan, given that LTRM crews have been involved in implementing the pilot projects.

#### *Nutrient- and HAB-Related Efforts*

In 2018, Representative Ron Kind (D-WI) approached UMRBA to get feedback on a UMR watershed monitoring network for nutrients and sediment. UMRBA staff, in consultation with the Board and WQEC, responded with the UMR Water Quality Improvement Act that includes a greater focus and emphasis on nutrient and sediment

reduction measures. The Act includes components on 1) sediment and nutrient runoff reduction, 2) sediment and nutrient monitoring network, 3) modeling and research, 4) communications and engagement strategy, and 5) a Mississippi River Program Office. If funded, the Act would bring federal investment to the Mississippi River for the voluntary implementation of conservation practices and establish a program office jointly administered by USEPA and NRCS.

In 2016, UMRBA Board formed the Harmful Algal Bloom (HAB) workgroup, inspired by ORSANCO's November 2015 presentation to the UMRBA Board, describing its response strategies with member states to large scale algal blooms. The group initially consisted of a diverse stakeholder group, including federal agencies, public water suppliers, and more. The HAB Resource Response Manual was developed to help water managers to respond effectively and efficiently if faced with a multi-jurisdictional algal bloom. The workgroup waned and does not currently meet outside of WQTF meetings. Current HAB discussions include annually updating the response manual and sharing information regarding the severity and distribution of algal blooms during the summer season.

In 2019, WQTF members revived the 1989 *How Clean is the River?* report and agreed to update the report to analyze the past 30 years of water quality on the UMR. A publication of the report update is anticipated in winter 2020-2021. In 2020, UMRBA was invited to be a coordinating committee member of the Gulf of Mexico Hypoxia Task Force.

#### *2018-2022 Strategic Planning*

The WQEC agreed to prioritize its work during 2018-2022 on the interstate water quality monitoring and assessment work and the states' nutrient reduction strategies as well as HABs, chloride, and emerging contaminants.

## Resources

[Note: the resources are listed in chronological order].

- UMRBA. 1989. The Upper Mississippi River Basin Charter, A Strategy for Protection of the Region's Water Resources. Website link: <http://www.umarba.org/publications/rivermgt/charterstrategy.pdf>
- UMRBA. 1989. How Clean is the River? An Examination of the Water Quality on the Upper Mississippi River. Website link: <http://www.umarba.org/publications/wq/cleanriver.pdf>.
- UMRBA. 1993. Upper Mississippi River Water Quality Initiative: Report of the Toxic Pollution Workshop. Website link: <http://www.umarba.org/publications/wq/toxicwkshop.pdf>.
- UMRBA. 1993. Upper Mississippi River Water Quality Initiative: Report of the Sedimentation Workshop. Website link: <http://www.umarba.org/publications/wq/sedwkshop.pdf>.
- UMRBA. 1997. Joint Governor's Proclamation on Upper Mississippi River System Management. Website link: <http://www.umarba.org/aboutumarba/jointgov.pdf>.
- UMRCC Water Quality Technical Section. 2002. Upper Mississippi River Water Quality Assessment Report. Website link: [https://archive.epa.gov/r5water/pdf/umr\\_wqa\\_full.pdf](https://archive.epa.gov/r5water/pdf/umr_wqa_full.pdf).
- UMRBA WQTF. 2003. Interstate Assessment Reaches for Upper Mississippi River Water Quality Reporting: Memorandum of Understanding. Website link: <http://www.umarba.org/wq/wqmou.pdf>.
- UMRBA. 2005. Upper Mississippi River Fish Consumption Advisories: State Approaches to Issuing and Using Fish Consumption Advisories on the Upper Mississippi River. Website link: <http://www.umarba.org/wq/fcarpt.pdf>.
- UMRBA. 2004. The States' Approaches to Clean Water Act Monitoring, Assessment, and Impairment Decisions. Website link: <http://www.umarba.org/wq/wq2002rpt.pdf>.
- UMRBA. 2006. Organizational Options for Interstate Water Quality Management on the Upper Mississippi River. Website link: <http://www.umarba.org/wq/orgoptions12-06.pdf>.
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2007. Statement of the Governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin on Water Quality Protection for the Mississippi River. Website link: <http://www.umarba.org/wq/jtgovwq8-07.pdf>.
- UMRBA. 2009. Examining Biological Indicators of the Upper Mississippi River: Applications in Clean Water Act and Ecosystem Restoration Programs. Website link: <http://www.umarba.org/publications/usacenav/umr-bio-indicators7-09.pdf>.

- UMRBA. 2011. Upper Mississippi River Nutrient Monitoring, Occurrence, and Local Impacts: A Clean Water Act Perspective. Website link: <http://www.umrba.org/wq/umr-nutrients.pdf>.
- Midwest Biodiversity Institute, Ohio State University and UMRBA. 2011. Improving Water Quality Standards and Assessment Approaches for the Upper Mississippi River: UMR Clean Water Act Biological Assessment Implementation Guidance. Website link: <http://www.umrba.org/wq/umr-bioassessment.pdf>.
- UMRBA. 2012. Upper Mississippi River Aquatic Life Designated Uses: Improving Protection Under the Clean Water Act. Website link: <http://www.umrba.org/wq/aldur-report2-12.pdf>.
- UMRBA. 2014. Upper Mississippi River Clean Water Act Monitoring Strategy 2013-2022: Recommended Monitoring Plan. Website link: <http://www.umrba.org/wq/cwa-monitoring-plan-2-14.pdf>.
- [Note: The strategy is now referred to as the Interstate Water Quality Recommended Monitoring Plan].
- UMRBA HABs Workgroup. 2016. Upper Mississippi River Harmful Algal Bloom Response Resource Manual. Website link: <http://www.umrba.org/wq/umr-hab-response-resource-manual.pdf>.
- [Note: The HABs manual is updated annually by the WQTF].
- UMRBA. 2016. Minnesota-Wisconsin Field Operations Manual. Website link: <http://www.umrba.org/wq/field-operations-manual.pdf>.
- UMRBA. 2017. Provisional Methodology for Clean Water Act Assessment of the Upper Mississippi River. Website link: <http://www.umrba.org/wq/provisional-umr-cwa-assessment-methodology-updated-july2017.pdf>.
- UMRBA Reaches 0-3 Planning Committee. 2019. Minnesota-Wisconsin Condition Assessment. Website link: <http://www.umrba.org/wq/mn-wi-pilot-wq-condition-assessment1-2019.pdf>.
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## **ATTACHMENT C**

### **Upper Mississippi River Basin Association's Upper Mississippi River Sub-Basin Committee Gulf Hypoxia Workplan**

*(C-1 to C-8)*

# Hypoxia Task Force

## Upper Mississippi River Sub-Basin Committee

### Work Plan for FY 2024 through FY 2026

#### **Grant Information**

U.S. Environmental Protection Agency  
Non-State Member Support for the Gulf Hypoxia Action Plan  
Cooperative Grant Application  
Funding Opportunity Number: EPA-I-OW-OWOW-HTF-02

#### **Grantee Information**

##### Organization

Upper Mississippi River Basin Association  
7831 East Bush Lake Road, Ste 302  
Bloomington, MN 55439

##### Point of Contact

Kirsten Wallace, Executive Director  
Email: [kwallace@umrba.org](mailto:kwallace@umrba.org)  
Phone: 651-224-2880



## **Project Description**

### *Project Description*

The states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin have directed the Upper Mississippi River Basin Association to convene and facilitate its Hypoxia Task Force Sub-Basin Committee for the Upper Mississippi River Basin. Through the project period, and with the available funding, the states have determined that their shared priorities for the Committee are to create an Upper Mississippi River Nutrient Reduction Strategy, an interstate system for continuous learning (also known as adaptive management), and an interstate communications strategy. UMRBA will participate in the Hypoxia Task Force and integrate the Sub-Basin Committee's actions into other interstate water planning.

### *Environmental Results*

Through its workplan, the Upper Mississippi River Basin Association (UMRBA) aims to increase engagement and participation by traditional and non-traditional stakeholders in the Upper Mississippi River Basin (UMRB), more effectively collaborate among states and their executive agencies, and ultimately reduce nutrient pollution in the UMRB.

### *Organizational Information*

UMRBA is the Governor-established forum for interstate water resource planning and management on the Upper Mississippi River, representing the common interests of its member states: Illinois, Iowa, Minnesota, Missouri, and Wisconsin. In part, UMRBA does this by facilitating and fostering cooperative planning and coordinated management and by creating a forum for discussion, study, and evaluation of major issues. UMRBA also serves as the Governors'-designated interstate water quality entity.

Through UMRBA, its member states work together to leverage their capacities and pull together towards common strategies or strategies that are compatible towards a common goal. Within the past few years, the states have collectively agreed to focus on building relationship and enhancing cooperative action across the Upper Mississippi River basin scale – beyond their individual state borders – to accelerate nutrient runoff reduction, including through collaborative implementation of conservation practices.

### *Place of Performance*

Project activities will occur throughout the Upper Mississippi River Basin in the five states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin.

### *Project Period*

UMRBA is proposing that it will accomplish its work plan tasks between October 1, 2023 through September 30, 2026.

**Upper Mississippi River Basin Association  
Hypoxia Taks Force  
Upper Mississippi River Sub-Basin Committee  
Project Workplan**

**Project Approach**

*Background*

The Upper Mississippi River Basin Association (UMRBA) is a Governor-established forum for interstate water resource planning and management on the Upper Mississippi River, representing its member states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin. Through their steady, 40-year commitment to UMRBA, the states have worked diligently with federal partners and stakeholders to advance multi-use management of the river, facilitating and fostering cooperative planning and coordinated management of the Upper Mississippi River Basin's water and related land resources. In acknowledging the complex nature of the river system and array of human uses, UMRBA has always held that river management requires thoughtful and inclusive dialogue among the diverse suite of stakeholder representatives throughout the region.

UMRBA is the interstate, regional collaborative of state agencies implementing the Clean Water Act and nutrient reduction strategies on the Upper Mississippi River and its basin. UMRBA initiates and maintains collaborative decision-making, cooperative action, and information sharing among the five UMRBA member states regarding water quality issues on the Upper Mississippi River. UMRBA provides a policy link between collective actions and individual actions by the states. In fulfilling this role, UMRBA promotes, supports and maintains the Hypoxia Task Force's (HTF) Upper Mississippi River Sub-Basin Committee.

The proposed workplan is in support of USEPA's Goal 5: Ensure Clean and Safe Water for All Communities (Table 1).

*Workplan Approach*

Through this workplan, UMRBA proposes to enhance nutrient management on the Upper Mississippi River's interstate waters through the following set of tasks:

1. Compile the separate state nutrient reduction strategies into an integrated Upper Mississippi River Nutrient Reduction Strategy and identify important interstate actions that will reduce nutrient pollution in the Upper Mississippi River
2. Evaluate implementation of important interstate actions to reduce nutrient pollution in the Upper Mississippi River and incorporate insights into ongoing implementation efforts
3. Communicate with stakeholders and other actors in the Basin about important interstate actions that will reduce nutrient pollution in the Upper Mississippi River and gain their commitment to ongoing implementation efforts

4. Maintain and enhance interstate collaboration that will reduce nutrient pollution in the Upper Mississippi River by supporting the Hypoxia Sub-Basin Committee and its various work teams
5. Integrate the important interstate actions that will reduce nutrient pollution in the Upper Mississippi River with other important interstate actions, such as flood mitigation and resilience planning

**Table 1: UMRBA’s alignment with USEPA’s Strategic Goal 5**

Strategic Goal	Strategic Objective	Proposed UMR Hypoxia Sub-Basin Committee Workplan	Workplan Alignment with USEPA Strategies
Goal 5: Ensure Clean and Safe Water for All Communities	Objective 5.2: Protect and Restore Waterbodies and Watersheds	<ul style="list-style-type: none"> <li>• Compile the separate state nutrient reduction strategies into an integrated Upper Mississippi River Nutrient Reduction Strategy and identify important interstate actions that will reduce nutrient pollution in the Upper Mississippi River</li> <li>• Evaluate implementation of important interstate actions to reduce nutrient pollution in the Upper Mississippi River and incorporate insights into ongoing implementation efforts</li> <li>• Communicate with stakeholders and other actors in the Basin about important interstate actions that will reduce nutrient pollution in the Upper Mississippi River and gain their commitment to ongoing implementation efforts</li> <li>• Maintain and enhance interstate collaboration that will reduce nutrient pollution in the Upper Mississippi River by supporting the Hypoxia Sub-Basin Committee and its various work teams</li> <li>• Integrate the important interstate actions that will reduce nutrient pollution in the Upper Mississippi River with other important interstate actions, such as flood mitigation and resilience planning</li> </ul>	<ul style="list-style-type: none"> <li>• Protect and restore water quality, especially in historically underserved and underrepresented communities</li> <li>• Share water quality data to inform decision making of policies and natural resource management</li> <li>• Inform progress of the Hypoxia Task Force member states to reducing nutrient pollution to the Gulf of Mexico “Dead Zone”</li> <li>• Understand how climate change is impacting nonpoint source pollution and water quality</li> <li>• Amplify and coordinate successful state programs to make further progress in reducing nonpoint source nutrient pollution</li> </ul>

Each workplan action as stated above is in line with USEPA’s strategic goals for sub-basin committees (Table 2).

**Table 2: UMRBA’s workplan tasks and their alignment to USEPA’s strategic goals for sub-basin committees. Each workplan task is associated with strategic goals one through four.**

UMR Hypoxia Sub-Basin Committee Workplan Task	Alignment with Strategic Goals 1-4 for Sub-Basin Committees
<p>Compile the separate state nutrient reduction strategies into an integrated Upper Mississippi River Nutrient Reduction Strategy and identify important interstate actions that will reduce nutrient pollution in the Upper Mississippi River</p>	<ol style="list-style-type: none"> <li>1. Convene regional, state, and other stakeholders not represented on the Task Force, including additional basin states, basin tribes, agencies, and interested parties and organizations to gather input, facilitate peer-to-peer learning opportunities, and encourage collaboration across boundaries</li> <li>2. Help the states engage disadvantaged communities in nutrient reduction planning and activities within their boundaries</li> <li>3. Support states in the respective sub-basins as they implement and coordinate comprehensive nutrient reduction strategies across boundaries. For example, where states are looking to adopt</li> <li>4. Coordinate, consolidate, and improve access to data and present regional progress towards the Action Plan goals</li> </ol>
<p>Evaluate implementation of important interstate actions to reduce nutrient pollution in the Upper Mississippi River and incorporate insights into ongoing implementation efforts</p>	<p>This action relates to all four strategic goals for the Sub-Basin Committee.</p>
<p>Communicate with stakeholders and other actors in the Basin about important interstate actions that will reduce nutrient pollution in the Upper Mississippi River and gain their commitment to ongoing implementation efforts</p> <p>Maintain and enhance interstate collaboration that will reduce nutrient pollution in the Upper Mississippi River by supporting the Hypoxia Sub-Basin Committee and its various work teams</p> <p>Integrate the important interstate actions that will reduce nutrient pollution in the Upper Mississippi River with other important interstate actions, such as flood mitigation and resilience planning</p>	<p>These actions relate to all four strategic goals for the Sub-Basin Committee.</p>

### *Outreach Strategies*

UMRBA and the UMR HTF Sub-Basin Committee will maintain existing relationships and reach out to new individuals and organizations as UMRBA implements the proposed workplan. UMRBA will focus on developing new relationship with individuals and communities that have not been engaged effectively by past pollution reduction activities, such as native nations, ethnically diverse individuals, and economically disadvantaged communities.

UMRBA will utilize social research and professional experience to identify individuals, communities and organizations with whom we want to develop new relationships.

UMRBA will employ communication activities (focused by our communications plan) and convene in-person and virtual meetings (focused by our collaborative management strategies) to enhance participation among existing and new stakeholders.

### *Equity Statement*

As the leading organization in the Midwest dedicated to solving the complex water resource challenges facing the Upper Mississippi River Basin, UMRBA recognizes the essential importance of including all people and communities in the process of creating and implementing solutions to these challenges. UMRBA welcomes, respects, and appreciates all of the ways individuals identify by race, ethnicity, gender identity, sexual orientation, religion, disability, and socioeconomic stratum, and is consistently striving to expand the range of voices, experiences, and perspectives that are heard in the discussions we convene throughout the Basin. UMRBA is also committed to understanding and addressing the impact that its policies and programs have on different people and communities, and working to ensure equity in opportunity and outcomes.

### *Budget Resources*

A quality management plan and quality assurance project plan are not applicable to this workplan.

UMRBA will not be utilizing subawards for this workplan.

## **Environmental Results**

### *Anticipated Outcomes*

- Reduced nutrient pollution in the Upper Mississippi River
- More engagement and participation by traditional and non-traditional stakeholders in the Basin
- More effective collaboration among states and their executive agencies

### *Anticipated Outputs*

- Data, analysis, and information about status and trends in nutrient pollution in the Upper Mississippi River

- Interstate actions that contribute to nutrient pollution reduction in the Upper Mississippi River
- Annual evaluations of interstate actions to continuously improve design and implementation
- Messages, meetings, workshops, and other stakeholder participation opportunities
- Regular meetings of the UMR Hypoxia Sub-Basin Committee and its work teams

*Anticipated Products*

- An integrated Upper Mississippi Nutrient Reduction Strategy
- An Adaptive Management Framework
- An Upper Mississippi Nutrient Reduction Communications Plan
- Notes and records of meetings of the UMR Hypoxia Sub-Basin Committee and its work teams

**Milestone Schedule**

For the project period of October 1, 2023 to September 30, 2026 (federal fiscal years 2024 through 2026), the proposed milestone schedule is as follows in Table 3.

**Table 3: Milestones for accomplishing workplan tasks. An “X” denotes when the tasks are expected to be completed. Note that subtasks associated with each task are potential routes to accomplish the tasks but are subject to change.**

Tasks	FY 2024	FY 2025	FY 2026
Compile the separate state nutrient reduction strategies into an integrated Upper Mississippi River Nutrient Reduction Strategy and identify important interstate actions that will reduce nutrient pollution in the Upper Mississippi River <ul style="list-style-type: none"> <li>• Compare the Upper Mississippi River state nutrient reduction strategies, identifying shared priorities and illuminate opportunities for interstate collaboration</li> <li>• Develop an Upper Mississippi River Basin Nutrient Runoff Reduction Strategy, aligning the states’ priorities for interstate collaboration</li> </ul>	X		
Communicate with stakeholders and other actors in the Basin about important interstate actions that will reduce nutrient pollution in the Upper Mississippi River and gain their commitment to ongoing implementation efforts <ul style="list-style-type: none"> <li>• Develop and implement a communications strategy related to the Upper Mississippi River Nutrient Reduction Strategy Nutrient</li> </ul>	This work is ongoing.		

Tasks	FY 2024	FY 2025	FY 2026
<ul style="list-style-type: none"> <li>Develop a communications strategy and materials regarding the HTF Interim Nutrient Targets in 2025, and implementing strategies and messaging in coordination with HTF members and partners</li> <li>Coordinate with SERA-46 in the development of a HTF Coordinating Committee Communications Plan Mississippi River communications plan</li> </ul>			
<p>Maintain and enhance interstate collaboration that will reduce nutrient pollution in the Upper Mississippi River by supporting the Hypoxia Sub-Basin Committee and its various work teams</p> <ul style="list-style-type: none"> <li>Routinely participate in Hypoxia Task Force meetings and workgroups</li> <li>Attend relevant nutrient reduction strategies meetings in the Upper Mississippi River basin – e.g., Illinois NLRs Annual Meeting</li> </ul>	This work is ongoing.		
<p>Integrate the important interstate actions that will reduce nutrient pollution in the Upper Mississippi River with other important interstate actions, such as flood mitigation and resilience planning</p> <ul style="list-style-type: none"> <li>Convene the UMRBA Board and Water Quality Executive Committee (and other groups) to align priorities and share information and leverage resources as possible</li> <li>Develop information papers describing the overlapping nature of nutrient management with other state water resource priorities</li> </ul>	This work is ongoing.		
<p>Evaluate implementation of important interstate actions to reduce nutrient pollution in the Upper Mississippi River and incorporate insights into ongoing implementation efforts</p> <ul style="list-style-type: none"> <li>Develop and prioritize a suite of learning objectives</li> <li>Develop a proposal(s) for obtaining the desired information (e.g., research or analysis)</li> <li>Develop generalized processes for integrating learned information into nutrient management</li> </ul>		X	X

## ATTACHMENT D

### The International Association for Public Participation's Public Participation Spectrum

*(D-1 to D-2)*



# IAP2'S PUBLIC PARTICIPATION SPECTRUM



The IAP2 Federation has developed the Spectrum to help groups define the public's role in any public participation process. The IAP2 Spectrum is quickly becoming an international standard.

INCREASING IMPACT ON THE DECISION 

	<b>INFORM</b>	<b>CONSULT</b>	<b>INVOLVE</b>	<b>COLLABORATE</b>	<b>EMPOWER</b>
<b>PUBLIC PARTICIPATION GOAL</b>	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
<b>PROMISES TO THE PUBLIC</b>	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

# IAP2 Quality Assurance Standard Process for Community and Stakeholder Engagement:

<b>1</b>	<b>Problem Definition</b>
<b>2</b>	<b>Agreement of Purpose/Context &amp; Identification of Negotiables and Non Negotiables</b>
<b>3</b>	<b>Level of Participation</b>
<b>4</b>	<b>Stakeholder identification and relationship development</b>
<b>5</b>	<b>Project requirements</b>
<b>6</b>	<b>Development and approval of engagement plan</b>
<b>7</b>	<b>Execution of Engagement Plan</b>
<b>8</b>	<b>Feedback</b>
<b>9</b>	<b>Evaluation and review</b>
<b>10</b>	<b>Monitoring</b>
<b>11</b>	<b>Documentation of Evidence</b>



## ATTACHMENT E

### **The Midwest Conservation Blueprint website links:**

- General Information: <https://mcap-fws.hub.arcgis.com/pages/midwest-conservation-blueprint>
- ArcGIS Story Map: <https://storymaps.arcgis.com/stories/15a30ebafbce4f44a1135750bf22105a>

## **ATTACHMENT F**

### **Upper Mississippi River System Integrated Water Availability Assessment Project Narrative**

*(F-1 to F-7)*

# Upper Mississippi River System Integrated Water Availability Assessment

**Principal Investigator:** Dr. John Nieber, Professor, University of Minnesota, St. Paul, MN

## 1) Abstract

The purpose for this cooperative partnership with the U.S. Geological Survey's Integrated Water Availability Assessment is to strengthen the scientific basis for water management decision making through the development of an Upper Mississippi River System Integrated Water Availability Assessment. The long-term vision is to build a comprehensive hydrologic analysis to assess water availability related to the river's many complex and intertwined water uses. This approach will allow for building a framework that illuminates which sub-watersheds have greater effects on river flows in the Upper Mississippi River System (UMRS). The objectives of this project include:

- 1) Estimate the existing hydrologic flows from the basin watersheds into the Upper Mississippi River System navigation channel
- 2) Assess how diversions and consumptive uses affect the hydrologic flows from the basin watersheds into the UMRS navigation channel
- 3) Determine the thresholds of discharge in various reaches at which negative impacts may occur to the UMRS navigation channel (including duration and frequency of occurrence)
- 4) Scope follow-on research goals for assessing the implications of limited water availability analysis for river products and services beyond the UMRS navigation channel – e.g., impacts to drinking water, recreation, and aquatic ecosystem health of the UMRS
- 5) Convene interstate conversations among Illinois, Iowa, Minnesota, Missouri, and Wisconsin technical experts and agency leaders to a) learn the research findings, b) relate the research findings to management and policy decision making and c) recommend principles and policies for cooperative and effectively managing the water resources of the Upper Mississippi River basin

This empirical analysis will include the development of hydrologic assessment report, static maps of results, a communications plan, and research questions for assessing implications to river products and services beyond the UMRS navigation channel – e.g., impacts to drinking water, recreation, and aquatic ecosystem health of the UMRS. This study can be used to inform water supply knowledge and management regionally and nationally, including systems governed by layers of federal, state, tribal, and local jurisdictions and serve as a pilot for other large riverine systems.

## Background

The appointed representatives of the Governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin have collectively determined the research need of estimating long term implications to low water flows on the UMRS given potential sustained or projected changes in water use. The goals for the analysis are to a) analyze hydrologic flow from the basin watersheds into the main channel of the UMRS (defined as the navigable areas of the Upper Mississippi and Illinois Rivers) and b) determine the thresholds of discharge in various reaches of the river at

which point discharge begins to negatively impact the UMRS navigation channel. This information will be used to guide an interstate effort to develop a hydrological flow analysis for the Upper Mississippi River basin.

The states recognized their need to align their diversion and consumptive use water use data to employ a comprehensive analysis at the basin scale. The states queried their respective consumptive use data on surface water and groundwater withdrawals reported from 2017 to 2021, and aggregated and georeferenced the data at a HUC-6 geographic scale. The data was processed into the U.S. Geological Survey (USGS) water use categories and assigned consumptive use coefficients. Additionally, the states queried their respective data of diversions or intrawatershed transfers.

This research proposal is both innovative and achievable. Existing science includes individual assessments of water availability in smaller geographic scales within the basin (e.g., Minnesota DNR, 2022) as well as flow analyses in the river mainstem using stream gages (e.g., Van Appledorn, 2022 and Turner, 2022). Research on hydrologic flow analyses at the basin scale and/or relating data and consumptive uses to water availability on the UMRS has not yet been advanced. Available models such as USGS' estimated water use for thermoelectric (Gorman Sanisaca et al., 2023; Galanter et al., 2023), public water supply (Luukkonen et al., 2023), and irrigation (Martin et al., 2023; Haynes et al., 2023) will be utilized in the research and other regional models of water availability cumulative impact assessments will be diversion leveraged in further developing the research methodologies. Other regional models include the (2023) "Great Lakes and St. Lawrence Governors and Premiers 2016-2020 Cumulative Impact Assessment of Withdrawals, Consumptive Uses, and Diversions" and the "Susquehanna River Basin Commission's Cumulative Water Use and Availability Study" (Balay et al., 2016). The research will also utilize existing data and incorporate the best available science to the extent possible.

The long-term vision is to build a comprehensive hydrologic analysis to assess water availability related to the river's many complex and intertwined water uses. The first building block is to center water flow on the established UMRS navigation channel and associated water depths and discharges. This approach will allow for building a framework that illuminates which sub-watersheds have greater effects on river flows in the UMRS. Subsequent evolutions of the framework would generate knowledge of impacts to the myriad of social and ecological resources.

## **2) Goal and Objectives**

The purpose for this cooperative partnership is to strengthen the scientific basis for water management decision making. The objectives for this project are to:

- 1) Estimate the existing hydrologic flows from the basin watersheds into the Upper Mississippi River System (UMRS) navigation channel
- 2) Assess how diversions and consumptive uses affect the hydrologic flows from the basin watersheds into the UMRS navigation channel
- 3) Determine the thresholds of discharge in various reaches at which negative impacts may occur to the UMRS navigation channel (including duration and frequency of occurrence)
- 4) Scope follow-on research goals for assessing the implications of limited water availability analysis for river products and services beyond the UMRS navigation channel – e.g., impacts to drinking water, recreation, and aquatic ecosystem health of the UMRS

- 5) Convene interstate conversations among Illinois, Iowa, Minnesota, Missouri, and Wisconsin technical experts and agency leaders to a) learn the research findings, b) relate the research findings to management and policy decision making and c) recommend principles and policies for cooperative and effectively managing the water resources of the Upper Mississippi River basin

This analysis can be used to inform the regional and national decision making about water supply management. In particular, this project aligns directly with the mission of the USGS Integrated Water Availability Assessment (IWAA) and its research priority (USGS-RT2-FA2). This is innovative research for a large, complex riverine system that will both inform water supply knowledge and management regionally and nationally, including systems governed by layers of federal, state, tribal, and local jurisdictions. This project can serve as a pilot for other large riverine systems. This proposal would leverage USGS's IWAA's, Integrated Water Science (IWS), including by ensuring the transferability of learned information to interstate waters with state and federal management authorities.

### 3) Research Plan Overview

*Objective 1: Estimate the existing hydrologic flows from the basin watersheds into the main channel of the Upper Mississippi River System (UMRS)*

This estimate involves collection of available and relevant information to generate estimates of water inputs and outputs. Data sources span the Upper Mississippi River Basin Association's (UMRBA) member states, USGS, National Weather Service (NWS) River Forecast Centers and the U.S. Army Corps of Engineers (USACE). The results of this data driven approach will be compared to USGS' water budget and water use modeling products (Gorman Sanisaca et al., 2023; Galanter et al., 2023; Luukkonen et al., 2023; Martin et al., 2023; and Haynes et al., 2023). This direct collaboration with USGS will strengthen this proposal and inform future efforts about the potential benefits and shortcomings of data driven versus modeled approaches.

*Objective 2: Assess how diversions and consumptive uses affect the hydrologic flows from the basin watersheds into the main channel of the UMRs*

This analysis will include calculations of potential shortages that incorporate human impacts to the watershed. Data sources collected include the states' a) diversion data and consumptive use data on surface water and groundwater withdrawals reported from 2017 to 2021 (aggregated and georeferenced at a HUC 6) as well as their b) diversion data equal to the volume of surface water and groundwater diverted into- or out- of the basin.

*Objective 3: Determine the thresholds of discharge in various reaches at which negative impacts may occur to the UMRs navigation channel (including duration and frequency of occurrence)*

The baseline analysis will evaluate how current water uses and hydrologic flows impact the UMRs navigation pool in each of the pools.

*Objective 4: Scope follow-on research goals for assessing the implications of limited water availability analysis for river products and services beyond the UMRs navigation channel – e.g., impacts to drinking water, recreation, and aquatic ecosystem health of the UMRs*

Water availability in the UMRS is impacted by factors such as climate change and the flows contributed from the basin's tributaries. The development of research goals will outline ways to incorporate additional future analyses into the UMRS water availability assessment. For example, the third iteration of the Great Lakes and St. Lawrence Governors and Premiers' Cumulative Impact Assessment of Withdrawals, Consumptive Uses, and Diversions (2023) incorporated the latest International Panel on Climate Change's predictions for the Upper Midwest over a variety of emissions scenarios, and that was utilized to understand how future conditions may impact water supplies.

*Objective 5: Convene interstate deliberations among Illinois, Iowa, Minnesota, Missouri, and Wisconsin technical experts and agency leaders to a) learn about the research findings, b) relate the research findings to management and policy decision making and c) recommend cooperative principles and policies for effectively managing the water resources of the Upper Mississippi River Basin.*

#### **4) Milestones and Expected Outcomes**

##### *Scientific advancement and dissemination*

The project is to develop a framework and methodology for assessing hydrologic flows for a complex, riverine system across multiple uses of the UMRS. This is a new area of work for the UMRS and is innovative. There are some examples to reference, but the available examples are only tangentially related to this project's objectives. This work will be disseminated to UMRBA's member states and their river management partners (e.g., federal agencies, local governments, industry groups, and conservation organizations) as well as to universities, businesses, and other members of the public through a report and other communications efforts hosted by UMRBA.

The outcomes from this project will result in at least one peer reviewed journal publication, aiming for the journal *Water Resources Research*. There will also be two major national presentations (e.g., American Geophysical Union and American Water Resources Association) and one local (e.g., Minnesota Water Resources conference). Several presentations will also be made to local audiences. Other presentations will be given remotely as opportunities arise. It is expected that the project will involve one full-time post-doctoral researcher and two undergraduate students, which will assist with project activities and conduct independent studies that are related to the project.

##### *Products and documentation*

- Hydrologic assessment report, including purpose, process and conclusions. The report will also include appendices documenting the methodology and datasets collected.
- Static maps of the UMRS. Examples include areas affected by a range of discharge conditions, precipitation patterns, diversions and consumptive use by HUC 6, and water use, water capacity, and water availability.
- Meeting summaries of meetings convened by UMRBA with local, state, and federal agency partners.
- Communications implementation plan for disseminating information from the hydrologic flows analyses.
- Research questions for assessing implications to river products and services beyond the UMRS navigation channel – e.g., impacts to drinking water, recreation, and aquatic ecosystem health of the UMRS.



The analysis will inform the appointed representatives of the Governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin as well as other national decisionmakers about water supply management. The project will assess the availability of existing water supplies across the Upper Mississippi River basin. This is innovative research for a large, complex riverine system that will both inform water supply knowledge and management regionally and nationally, including systems governed by layers of federal, state, tribal, and local jurisdictions. This project can serve as a pilot for other large riverine systems. This proposal would leverage data, research, and models developed by USGS’s IWAAs and IWS, including by ensuring the transferability of learned information to interstate waters with state and federal management authorities.

The estimated milestone schedule is below and assumes a project start date of July 1, 2024 (FY 2024 Quarter 3) and end date of June 30, 2026 (FY 2026 Quarter 3). Accomplishments are listed by quarter in parenthesis by the federal fiscal year (FFY). Note that UMRBA will continuously consult its member states leadership and technical experts throughout the process.

FY	Milestone Schedule
2024	<ul style="list-style-type: none"> <li>• Datasets for objective 1 (Quarter 4)</li> </ul>
2025	<ul style="list-style-type: none"> <li>• Depiction of the hydrologic flows analyses in fulfillment of objectives 1 and 2 (Quarter 1)</li> <li>• Initial meeting with states and federal agencies with technical experts (for social, ecological, and economic) in fulfillment of objective 5 (Quarter 1)</li> <li>• Outlined objective 3 (Quarter 2)</li> <li>• Communications plan developed (Quarter 2)</li> <li>• Input from a variety of river users to inform the development of objective 4 (Quarter 2)</li> <li>• Objective 3 completed (Quarter 3)</li> <li>• Presentation completed at the CIROH annual meeting (Quarter 3)</li> <li>• Research goals as described in objective 4 are scoped (Quarter 4)</li> </ul>
2026	<ul style="list-style-type: none"> <li>• Analyses and static maps finalized (Quarter 1)</li> <li>• Presentation completed at the University of Minnesota Water Resources Conference (Quarter 1)</li> <li>• Report and products by UMRBA finalized (Quarter 2)</li> <li>• Published manuscript in peer reviewed journal (Quarter 2)</li> <li>• Meeting with state agency partners is held in fulfillment of objective 5 (Quarter 3)</li> <li>• Research findings are disseminated and state agency responses are documented (Quarters 2 and 3)</li> </ul>

### 5) Dependencies, Risks, and Mitigations

Project success involves dependences on data availability (relevance and accessibility) and partnership alignment between the University of Minnesota (UMN), USGS, and the UMRBA.

The analyses will require that data sources provide the desired data or other relevant information, and that the data are relevant, compatible, and of high quality. Data collection will be a priority in the initial project stages to ensure adequate time for mitigation actions (such as course correction) if issues arise.

UMN and UMRBA are committed to a strong partnership approach throughout the project, including in collaborating with the USGS. Actions to ensure a strong partnership process will include establishing a project team of participating partners and having regularly scheduled meetings to talk about the research process and results. The meetings will include having agendas and supporting materials sent to participants with ample time for preparation as well as maintaining and sharing meetings documentation – i.e., summaries of the discussions.

## 6) Facilities and Research Infrastructure

UMN's portions of the project will be conducted with computational resources (computers and software) available at the University. UMN library facilities and internet connections will also be utilized.

## 7) Data Sharing Plan

UMRBA will ensure that data are properly documented, accessible to states and interested entities, and preserved for future use. Any data submitted by UMRBA's member states or UMN will be stored in a cloud hosting service and locally backed up to servers hosted by UMRBA. Database users will be granted access to database by permission only for the purposes of data analysis, via a login and password combination. Data will be hosted on an encrypted server. UMRBA will ensure data are stored for the long term so they may be used in future water availability assessments. After the report of the water availability assessment is complete, data will be made accessible on UMRBA's website and via appendices in the report.

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**ATTACHMENT G**

**Iowa Department of Natural Resource's  
Farmer-to-Farmer Grant Abstract**

*(G-1)*

The Iowa Department of Natural Resources was awarded a Farmer-to-Farmer grant to produce seeds for row crop and public grounds to protect Iowa's waters and wildlife. For five seasons, nearly a million pounds of rye and triticale seeds were produced on over 7,000 acres of row crop and public grounds. In the process, the Iowa Department of Natural Resources created dozens of partnerships with cooperating farmers and saved hundreds of thousands of dollars doing this work within the agency.

## **ATTACHMENT H**

### **Upper Mississippi River Basin Association Water Quality Executive Council Draft Charter**

*(H-1 to H-3)*

# **CHARTER of the Upper Mississippi River Basin Association WATER QUALITY EXECUTIVE COUNCIL**

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## **Purpose**

The purpose of the Upper Mississippi River Basin Water Quality Executive Council (WQEC) is to facilitate collaborative decision-making, cooperative action, and information sharing among the States of the Upper Mississippi River Basin (Illinois, Iowa, Minnesota, Missouri, and Wisconsin) with regard to water quality issues on the Upper Mississippi River, and to provide a policy link between collective actions and individual actions by the States and Federal government.

## **Authority**

The WQEC was established by resolution of the Upper Mississippi River Basin Association (UMRBA) on August 24, 2006, consistent with Section V of the UMRBA Bylaws, which empowers UMRBA to establish committees.

Each agency with representation on the WQEC participates under the auspices of its own authorities governing interagency coordination and water protection. Participation does not restrict any individual agency or State's authority to issue permits, manage programs, set water quality standards, operate projects, or fulfill other individual agency mandates. The views expressed and actions taken by individual agency representatives and by the WQEC are not binding on any agency, unless the member agencies explicitly enter into a binding agreement.

## **Membership**

Membership of the WQEC shall be composed of the water quality administrator(s), or equivalent, of each of the following agencies:

Illinois Environmental Protection Agency  
Iowa Department of Natural Resources  
Minnesota Pollution Control Agency  
Missouri Department of Natural Resources  
Wisconsin Department of Natural Resources

Members shall be appointed by the directors of the agencies named above. In the event that a member is unable to participate in a meeting of the WQEC, he or she may designate another

staff person to act on their behalf, on a temporary basis. The directors of the agencies and/or their duly appointed member representative may designate nonvoting members of the WQEC from within their respective agency or State.

Regions 5 and 7 of the U.S. Environmental Protection Agency shall be invited to serve as nonvoting members of the WQEC. Each of the two Regional Administrators shall be requested to appoint a representative from their agency to participate in and assist the WQEC.

The WQEC may invite federal liaisons to the UMRBA, or representatives on behalf of their respective agency, to participate in or provide advice to the WQEC.

### **Scope of Mission**

The primary focus of the WQEC shall be on implementing the States' water quality responsibilities, including under the federal Clean Water Act, on the interstate portion of the main stem of the Mississippi River, north of its confluence with the Ohio River. Basin-wide matters related to water quality or water protection may also be addressed by the Committee, as mutually agreed upon by the Committee members or as requested by UMRBA.

### **Roles and Responsibilities**

- Promote effective interstate implementation of Clean Water Act responsibilities by the States on the Upper Mississippi River.
- Seek to establish a consensus among the basin states' water quality administrators on major issues related to interstate and intrastate implementation of the Clean Water Act and other water quality responsibilities on the Upper Mississippi River.
- Provide a forum for state water quality administrators to discuss policy, programmatic, and budgetary issues related to interstate and intrastate implementation of the Clean Water Act and other related water quality programs on the Upper Mississippi River.
- Foster coordination between the states' water quality agencies and other state and federal agencies, particularly those represented on the UMRBA.
- Discuss and promote the member agencies' perspectives on federal water quality policy, programmatic, and budgetary issues relevant the WQEC.
- Establish standing committees and/or working groups to advance priorities of the WQEC. Appoint a representative(s) to, and provide direction for the work of, any established committees and/or work groups. Consider action in light of the findings and recommendations of any committee or working group.
- Ensure that the products and efforts of the WQEC and its committees or work groups are recognized and incorporated, as appropriate, into the water quality programs of the States' environmental protection agencies.



## Operation

The position of WQEC Chair shall rotate on a biennial basis among its members. The duties of the Chair shall include presiding at meetings of the Committee; consulting with UMRBA staff in preparation of agendas, materials, and work plans for the Committee; and reporting to UMRBA on the activities of the Committee.

The WQEC shall meet quarterly and on an as-needed basis.

The WQEC shall regularly communicate with the UMRBA Board and its established committees and working groups. At least one meeting per year shall be held in conjunction with a quarterly meeting of the UMRBA and one meeting per year shall be held in conjunction with its established committees and working groups.

Whenever possible, the WQEC will attempt to achieve unanimous consent among its members, particularly on matters of policy.

Reports, policy papers, or position statements resulting from the deliberations of the Committee shall be forwarded to the UMRBA Board for its consideration and action.

The UMRBA shall provide staff support to the WQEC, including making meeting arrangements, preparing meeting agendas and summaries, preparing background materials, developing draft reports and policy papers, and other activities as assigned by the Committee, consistent with staff capacity as reflected in UMRBA's budget.

The WQEC shall prepare an annual work plan and estimate of funding needs for consideration by UMRBA in development of the annual UMRBA budget. Sources of funding to support the WQEC may include special assessments on the Committee's participating state agencies; UMRBA dues that support UMRBA's general operations; and grants, cooperative agreements, or contracts from outside sources.

The cost of participating in the WQEC and its committees and working groups shall be the responsibility of the state agencies. Up to \$3,500 per state per year will be available for travel reimbursement for members of the WQEC, its committees, and its working groups. Funding for state participation and travel may be covered by the terms of a grant or cooperative agreement that UMRBA secures to support the work of the WQEC, the WQEC committees, and the WQEC working groups.