

February 22, 2022



Upper Mississippi River Basin Association

161st Quarterly Meeting
41st Annual Meeting

Agenda
with
Background
and
Supporting
Materials

Virtual Meeting



Upper Mississippi River Basin Association

February 22, 2022

Agenda

Connection Information:

- Web and video conferencing:
<https://umrba.my.webex.com/umrba.my/j.php?MTID=m1a2bf2497f9f64e8f636e8d62b654cd5>
- Phone connection:
 - Dial-in: 312-535-8110 [Note: In the event that the call line provided is experiencing a high volume of calls, you may also connect by dialing 469-210-7159.]
 - Access code: 2558 489 3926
 - Password: 1234

| Time | Attachment | Topic | Presenter |
|-------------|------------|---|---|
| 8:00 a.m. | | Call to Order and Introductions | <i>Dru Buntin, Missouri DNR</i> |
| 8:05 | A1-25 | Approval of Minutes of November 16, 2021 Meeting | |
| 8:10 | B1-26 | Executive Director's Report <ul style="list-style-type: none">▪ Farewell to Margie Daniels, UMRBA Administrative Assistant | <i>Kirsten Wallace, UMRBA</i> |
| 8:30 | C1-5 | Interbasin Diversion Consultation <ul style="list-style-type: none">▪ Annual Reporting | <i>UMRBA Board Members</i> |
| 8:50 | D1-2 | UMRBA Chloride Resolution <ul style="list-style-type: none">▪ UMRBA Board Consideration of Endorsement▪ UMRS Chloride Trends▪ Chloride Technical Management Workgroup | <i>Dru Buntin, Missouri DNR</i> <i>Lauren Salvato, UMRBA</i> <i>Brooke Asleson, Minnesota PCA</i> |
| 9:10 | | Resilience Planning | |
| | E1-2 | <ul style="list-style-type: none">▪ Basin-Wide Precipitation Trends▪ 2022 UMRS Flood and Drought Forecast | <i>Steve Buan, NWS</i> <i>Mike Welvaert, NWS</i> |
| | E3-6 | <ul style="list-style-type: none">▪ Midwest Drought Characteristics and Predictability | <i>Molly Woloszyn, NOAA</i> |
| | E7-11 | <ul style="list-style-type: none">▪ Missouri Proposed Flood Resilience Program | <i>Jennifer Hoggatt, Missouri DNR</i> |
| | E12-27 | <ul style="list-style-type: none">▪ Channel Maintenance Management<ul style="list-style-type: none">— HQ Guidance on Five-Year Regional Plans | <i>Richie McComas, USACE</i> |
| 10:30 | | Break | |
| 10:45 | | Federal Fiscal Report <ul style="list-style-type: none">▪ Infrastructure Investment and Jobs Act▪ FY 2022 Appropriations and FY 2023 Budget (TBD) | <i>UMRBA Federal Liaisons</i> |
| 12:00 noon | | Lunch | |
| (Continued) | | | |

UMRBA Quarterly Meeting (Continued)
February 22, 2022

| Time | Attachment | Topic | Presenter |
|-----------|------------|---|---|
| 1:00 p.m. | | UMRS Ecosystem and Navigation Management <ul style="list-style-type: none">▪ Navigation and Ecosystem Sustainability Program▪ Upper Mississippi River Restoration Program | <i>Dru Buntin, Missouri DNR, Andrew Goodall and Marshall Plumley, USACE</i> |
| 2:00 | F1-14 | UMR Spills Group <ul style="list-style-type: none">▪ Draft 2021-2027 Strategic Plan▪ 2022 Priorities | <i>Mike Rose, Minnesota PCA and Mark Ellis, UMRBA</i> |
| 2:30 | G1 | Administrative Issues <ul style="list-style-type: none">▪ Election of Officers▪ Future Meeting Schedule | |
| 2:45 p.m. | | Adjourn (See Attachment G for frequently used acronyms.) | |

ATTACHMENT A

Minutes of the November 16, 2021 **UMRBA Quarterly Meeting**

(A-1 to A-25)

DRAFT
Minutes of the 160th Quarterly Meeting
of the
Upper Mississippi River Basin Association

November 16, 2021
Web-Based Conference Meeting

Dru Buntin called the meeting to order at 8:00 a.m. Participants were as follows:

UMRBA Representatives and Alternates:

| | |
|------------------|---|
| Rick Pohlman | Illinois Department of Natural Resources |
| Chad Craycraft | Illinois Department of Natural Resources |
| Dave Glover | Illinois Department of Natural Resources |
| Loren Wobig | Illinois Department of Natural Resources |
| Tim Hall | Iowa Department of Natural Resources |
| Jake Hansen | Iowa Department of Agriculture and Land Stewardship |
| Sam Hiscocks | Iowa Department of Transportation |
| Barb Naramore | Minnesota Department of Natural Resources |
| Katrina Kessler | Minnesota Pollution Control Agency |
| Dru Buntin | Missouri Department of Natural Resources |
| Jennifer Hoggatt | Missouri Department of Natural Resource |
| Chris Klenklen | Missouri Department of Agriculture |
| Matt Vitello | Missouri Department of Conservation |
| Cheryl Ball | Missouri Department of Transportation |
| Steve Galarneau | Wisconsin Department of Natural Resources |
| Jim Fischer | Wisconsin Department of Natural Resources |

Federal UMRBA Liaisons:

| | |
|-------------------|--|
| Brian Chewning | U.S. Army Corps of Engineers, MVD |
| Branden Villalona | U.S. Department of Transportation, MARAD |
| Ken Westlake | U.S. Environmental Protection Agency, Region 5 |
| Sabrina Chandler | U.S. Fish and Wildlife Service, UMR Refuges |
| Mark Gaikowski | U.S. Geological Survey, UMESC |

Others in Attendance:

| | |
|----------------|---|
| Randy Schultz | Iowa Department of Natural Resources |
| Megan Moore | Minnesota Department of Natural Resources |
| Patrick Phenow | Minnesota Department of Transportation |
| Chris Wieberg | Missouri Department of Natural Resources |
| John Hoke | Missouri Department of Natural Resources |
| Sara Walling | Wisconsin Department of Agriculture, Trade, and Consumer Protection |
| Greg Searle | Wisconsin Department of Natural Resources |
| Mike Halsted | Wisconsin Department of Transportation |

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|------------------------|---|
| Jim Cole | U.S. Army Corps of Engineers, MVD |
| Leanne Riggs | U.S. Army Corps of Engineers, MVD |
| Ben Robinson | U.S. Army Corps of Engineers, MVD |
| Thatch Shepard | U.S. Army Corps of Engineers, MVD |
| James Lewis | U.S. Army Corps of Engineers, MVD |
| Ben Robinson | U.S. Army Corps of Engineers, MVD |
| Angela Deen | U.S. Army Corps of Engineers, MVP |
| Steve Tapp | U.S. Army Corps of Engineers, MVP |
| Chris Erickson | U.S. Army Corps of Engineers, MVP |
| Dave Potter | U.S. Army Corps of Engineers, MVP |
| Andrew Goodall | U.S. Army Corps of Engineers, MVR |
| Karen Hagerty | U.S. Army Corps of Engineers, MVR |
| Marshall Plumley | U.S. Army Corps of Engineers, MVR |
| Rachel Hawes | U.S. Army Corps of Engineers, MVR |
| Roger Perk | U.S. Army Corps of Engineers, MVR |
| Chuck Theiling | U.S. Army Corps of Engineers, MVR |
| Davi Michl | U.S. Army Corps of Engineers, MVR |
| Jodi Creswell | U.S. Army Corps of Engineers, MVR |
| Megan Medinger | U.S. Army Corps of Engineers, MVR |
| Jasen Brown | U.S. Army Corps of Engineers, MVS |
| Brian Markert | U.S. Army Corps of Engineers, MVS |
| Shawn Sullivan | U.S. Army Corps of Engineers, MVS |
| Sharon Sartor | U.S. Army Corps of Engineers, Headquarters |
| Kraig McPeck | U.S. Fish and Wildlife Service, Illinois-Iowa Ecological Services |
| Sara Schmuecker | U.S. Fish and Wildlife Service, Illinois-Iowa Ecological Services |
| Matt Mangan | U.S. Fish and Wildlife Service, Illinois Ecological Services |
| Tim Yager | U.S. Fish and Wildlife Service, Winona |
| Jim Duncker | U.S. Geological Survey, Central Midwest Water Science Center |
| JC Nelson | U.S. Geological Survey, Midcontinent Region |
| Kristen Bouska | U.S. Geological Survey, UMESC |
| Jennie Sauer | U.S. Geological Survey, UMESC |
| Jeff Houser | U.S. Geological Survey, UMESC |
| Jennifer Dieck | U.S. Geological Survey, UMESC |
| Jayme Strange | U.S. Geological Survey, UMESC |
| Nate De Jager | U.S. Geological Survey, UMESC |
| Mike Welvaert | National Oceanic and Atmospheric Administration, NWS |
| Tom Streight | Alter River Terminals |
| Olivia Dorothy | American Rivers |
| Kim Lutz | America's Watershed Initiative |
| Nat Miller | Audubon |
| Bob Gallagher | City of Bettendorf, Iowa Mayor |
| Jennifer Kissel | City of Bettendorf, Iowa |
| Phil Stang | City of Kimmswick, Missouri Mayor |
| Eileen McLellan | Environmental Defense Fund |
| Carolyn Mahlum-Jenkins | League of Women Voters/Naiad Consulting |
| Doug Daigle | Lower Mississippi River Sub-Basin Committee (Hypoxia Task Force) |
| Colin Wellenkamp | Mississippi River Cities and Towns Initiative |
| Brandt Thorington | Mississippi River Cities and Towns Initiative |
| Maisah Khan | Mississippi River Network |

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|-------------------|---|
| Eileen McLellan | Mississippi River Network |
| Gretchen Benjamin | The Nature Conservancy |
| Liz Crow | The Nature Conservancy |
| Heidi Mehl | The Nature Conservancy |
| Tom Boland | Wood |
| Kirsten Wallace | Upper Mississippi River Basin Association |
| Mark Ellis | Upper Mississippi River Basin Association |
| Lauren Salvato | Upper Mississippi River Basin Association |
| Andrew Stephenson | Upper Mississippi River Basin Association |

Minutes

Tim Hall moved and Steve Galarneau seconded a motion to approve the draft minutes of the August 10, 2021 UMRBA quarterly meeting as provided in the agenda packet. The motion was approved unanimously.

Kirsten Wallace offered a correction to the May 25, 2021 UMRBA quarterly meeting minutes. Wallace explained that, during the August 10, 2021 UMRBA quarterly meeting, Olivia Dorothy questioned a statement made by Andrew Goodall about whether the L&D 25 lock wall modification was classified as a small-scale efficiency project or part of the lock's modernization. It is the latter – i.e., part of the L&D 25 lock modernization. Given the back-and-forth nature of the subject discussion and the point being raised, Wallace offered that the minutes be corrected by adding a note at the end of the statement that explains that it was an error and to correct the statement. The note would read “[Correction: The L&D 25 lock wall modification is part of the lock modernization project. It was incorrectly stated to be a small-scale navigation efficiency measure.]” Barb Naramore moved and Tim Hall seconded a motion to approve the correction to the May 25, 2021 UMRBA quarterly meeting minutes as read by Wallace. The motion was approved unanimously.

Executive Director's Report

Kirsten Wallace pointed to the Executive Director's report in the agenda packet for a summary of the Association's other work efforts since the August 2021 quarterly meeting. Wallace reported on new announcements since the packet publication and elaborated on a few key developments, as follows:

Wallace recalled that, during the August 2021 quarterly meeting, the Board approved her executing a contract with the Corps for up to \$70,000 to support the 2022 UMRR Report to Congress development. Subsequently, on September 28, 2021, UMRBA executed a \$67,000 contract with the Corps to assist in the development of the UMRR 2022 Report to Congress. Per the contract, UMRBA staff are helping to draft various sections of the report. This includes developing a description of desired future condition of the river ecosystem utilizing various programmatic documents and partner agreements as well as updating and developing new implementation issue assessments. Wallace noted that this revenue to UMRBA is not reflected in the FY 2022 budget as approved by the Board.

UMRR convened a series of workshops in September and October 2021 to 1) determine future hydrologic modeling needs of the UMRS and 2) conduct a vulnerability assessment of aquatic vegetation in the UMRS. Wallace expressed appreciation to the UMRR partners who hosted the workshops, suggesting that this work is important for improving our knowledge and positioning UMRR and the partners well to make smart decisions about river restoration and management.

The UMR Spills Group finalized a draft five-year strategic plan and is scheduled to meet on November 30, 2021 to finalize any remaining details and develop a plan for external review.

Wallace pointed to UMRBA's financial statements on pages B-6 to B-9 of the agenda packet. Steve Galarneau moved and Tim Hall seconded a motion to approve the Association's budget report and balance sheet as included in the agenda packet. The motion was approved unanimously.

UMR Ecosystem and Water Quality Assessments

Kirsten Wallace acknowledged the tremendous lift of our predecessors (i.e., those who worked to imagine UMRR, make it a reality, and continually improve its implementation) to advocate and resource long term monitoring as well as the incredible people in our partnership who work to make it all happen. We now benefit by having extensive knowledge of the Upper Mississippi River ecosystem and water quality conditions. We have in-depth knowledge of the river's complexity and what is challenging it and where, and how we've improved the river and where. Additionally, the states have long term ambient monitoring programs that allow for long term analysis on a number of important water quality parameters.

UMRR Long Term Resource Monitoring Status and Trends

Jeff Houser provided a deeper review of what the Upper Mississippi River Restoration program has learned about the river through the process of developing the program's third long term resource monitoring status and trends report. While the content is complete, the publication process is taking longer than anticipated. USGS anticipates having the report published in 2022, but until that happens, it is not considered as having final agency approval and therefore the information provided today should be viewed as provisional.

Houser reminded that the purpose of UMRR's long term resource monitoring is to tracking and better understanding the ecological conditions in the Upper Mississippi and Illinois Rivers. That primary focus drives everything about how the program is structured and what the program aims to address. Houser acknowledged the extensive contributions among broad partnership that is highly functional and collaborative, involving multiple federal agencies and the five Upper Mississippi River states. This partnership has allowed for the expansive monitoring network and research and analysis capabilities.

Houser said the purpose of the status and trends report is to provide a clear, quantitative assessment of what we know of how the Upper Mississippi River ecosystem is doing (i.e., where and how it has changed over time), how we know that, and why it matters. It does not provide a "grade" in terms of how it compares to desired future conditions. This assessment is based on a collection of about 40 indicators within four main topics: 1) hydrology, 2) geomorphology (i.e., sedimentation and changes in land), 3) floodplain land cover, and 4) water quality, aquatic vegetation, and fisheries, which are all collected from long term monitoring within the UMRR's six study reaches.

In summary, the Upper Mississippi River System is a large and diverse ecosystem with many regional differences. The most widely observed trend throughout the system is there is more water more of the time (i.e., discharge is increasing) and there is a variety of resulting implications. Concentrations of nutrients (total nitrogen and total phosphorus) remain high throughout the system. Floodplain forest area has declined in much of the Upper Mississippi River System, total phosphorus has declined while total nitrogen has not, and water clarity has increased resulting from declines in total suspended solids and turbidity. In some areas, aquatic vegetation has increased significantly and interacts with water

clarity and lentic fishes have increased. Where invasive carps have proliferated, they have dominated and changed the ecosystem. Forage fish, which exist in the middle of the food web, have decreased and this decline has some overlap with the proliferation of invasive carps. Additionally, in some areas, sediment has accumulated in backwaters.

Houser elaborated on those findings as follows:

Hydrology: Overall, there has been a broad and sustained increase in discharge. While in a couple of places, an aspect of hydrology is stable, there have been no declines anywhere. Additionally, there has been a seasonal shift in peak flows from April to May or June. There are a variety of implications to the ecosystem. Hydrology is the main driver for sediment disposition and erosion, affecting the overall structure of the river. Higher discharge more of the time affects habitat suitability in off-channels and backwaters by altering their connection to the main channel and thereby the water velocity, temperature, and dissolved oxygen. Prolonged high water levels through most of 2019 appear to have led to extensive floodplain forest mortality.

Floodplain land cover: Floodplain forest area has declined everywhere except for the unimpounded portion of the river system. This decline is probably the result of several things. One important factor appears to be the high prevalence of herbaceous invasive plants that quickly take over the forest floor after tree mortality, limiting the ability for native hard wood trees to reestablish. Houser reminded that the land cover/land use data set used in this report is from 2010 and therefore the 2019 mortality is not included in this assessment. USGS is processing the 2020 land cover/land use dataset, which will provide further insight into the forest condition.

Water quality (suspended solids, total phosphorus, total nitrogen): Analyzing the water quality data via long term flow-normalized concentrations allows for understanding how concentrations of sediment, phosphorus, and nitrogen are changing in absence of variability in discharge. LTRM monitors in a collection of tributaries to better understanding how the watershed influences conditions in the river. Throughout the Upper Mississippi River System, suspended solids have decreased over time with the exception of Pool 13. The overall decline from many tributary inputs is not as great as the decline being detected in the river, suggesting that there is something else adding to the decline. Later in this presentation, Houser explains the feedback loop with aquatic vegetation.

Total phosphorus is very similar to the suspended solids trend, which is not surprising given the high affinity particles that make up suspended solids – i.e., typically about half. Those two parameters are highly correlated. Additionally, major improvements at wastewater treatment plants are reflected in the long term changes. On the other hand, nitrogen is much more variable among the different parts of the Upper Mississippi River System. There are very few significant trends. However, for both total phosphorus and total nitrogen are still both generally greater than benchmarks USEPA Ecoregion recommendations.

Aquatic vegetation – In the Upper Impounded Reach, the increasing trend in aquatic vegetation is the most obvious change in the last 25 years. The basic pattern is a steady increase through 2010, followed by stable conditions in Pools 4 and 8 and a recent decline in Pool 13. Submersed aquatic vegetation remains scarce in the other parts of the system.

Fisheries – Forage fishes have declined over the period of record. These fish occupy the middle part of the food web and are important conduits of energy for invertebrates and smaller organisms as well as larger fish. Lentic fish consist of bluegill and large mouth bass, which are typically peoples' favorites. Lentic fish prefer quiet off-channel areas. Lentic fish have increased in three of the study reaches and declined in the

La Grange reach on the Illinois River. The other major change in the Upper Mississippi River ecosystem over the last 25 years is the proliferation of invasive carps, particularly in La Grange and Pool 26. That change has been significant and large. That is probably part of the reason for the decline in forage fish in those areas. The increase in lentic fish in Pools 4 and 8 likely correspond to the increase in aquatic vegetation in those areas and the associated habitat conditions.

Houser explained that there are associations among the various trends that are important for understanding why those changes are occurring:

Relationship between water clarity, vegetation and fish: In the Upper Impounded Reach (Pools 4, 8, and 13), a period of low discharge in the mid-2000s is when much of the dramatic increase in vegetation occurred. When there is low discharge, there is less input of suspended solids from tributaries that results in clearer water. The shallower conditions allow for more sunlight to reach the river bottom. The river current is slower and less disruptive. All of those things have the potential to contribute to increases in aquatic vegetation.

Over the time of that vegetation increase and over a longer period of time, in Pools 4 and 8, there has been a substantial decline in turbidity, which is a major indicator of water clarity and is a function of total suspended solids. There has been a decline in total suspended solids in many (but not all) tributaries, but that reduction in inputs is not enough to explain the trends in water clarity. There are two possible explanations: 1) as vegetation returns, water velocity and wind fetch are slowed, further facilitating plant growth. The plants anchor sediment and improve water clarity. Those feedback loops within those variables can help to sustain conditions. 2) The feeding mechanisms of common carp are very disruptive to plants in a few ways, making water more turbid. The substantial decline of common carp over time may have removed their negative impact to vegetation.

The sustainability of these conditions in Pool 13 is uncertain but seems more doubtful. In Pool 13, the decline in common carp has not been as low as Pools 4 and 8 and turbidity has increased again. And, there has been a recent decline in vegetation. UMRR is currently planning a habitat restoration project in Pool 13 to address some of the challenges to aquatic vegetation.

Long term effects of bigheaded carps: Because of its orientation around assessing a broad suite of indicators, LTRM has been able to provide interesting insights in how bigheaded carp have affected the river in areas where they have proliferated. There have been numerous studies in the La Grange Reach using LTRM data to better understand those long term changes. The results have shown declines in native filter feeding species, sport fishes, and overall native fish communities. Invasive carp are filter feeders, and there has been a notable decline in both zooplankton and phytoplankton. LTRM has also detected other shifts in the fish community composition and overall ecological conditions.

Houser discussed a specific example of how LTRM's longevity of data collection can provide very important insights. LTRM measures the total length of fish it captures through electrofishing. There are a few years where there is an enormous number of very small invasive carp and over time those classes can be tracked through time as their sizes get bigger. Comparing against hydrologic conditions, the data show that the timing of the spring flood can trigger a large spawning event.

In summary, the Upper Mississippi River System is a large and diverse ecosystem with many regional differences. There is no single answer that can be provided to the question of how is the river doing. The hope is to summarize the current knowledge to inform all sorts of restoration and management

purposes, including for providing context for work to define a desired future condition for the river ecosystem.

Houser recognized the inherent difficulty in assembling 25 years worth of data collected over six study reaches, five states, and multiple federal agencies. He acknowledged how truly remarkable it is to have this partnership that is able to function in a collaborative way and do things that we could not accomplish as individual agencies. Houser specifically mentioned the tremendous work done by state field stations, which collect data in all sorts of conditions and are involved in the analysis and writing related to the data. This infrastructure of field stations in terms of equipment and expertise is remarkable. Houser showed an image of a single episode of stratified random sampling in Pool 13 to exemplify the magnitude of data collection. Houser acknowledged the contributions of UMESC staff who help turn the data into knowledge and understanding.

Houser said UMESC staff hope the report will be available in early 2022. Houser encouraged comments or questions be submitted to him.

In response to a question from Dru Buntin, Houser and Jennie Sauer said the 2020 land cover/land use covers the floodplains as legislatively-defined Upper Mississippi River System. Mapping has been completed for Pools 4, 8, 13, 26, and half of the Unimpounded Reach, is anticipated to be completed for the La Grange Pool in December 2022, and is planned to be initiated for the second half of the Unimpounded Reach in FY 2022. Field work has been completed for Pools 9, 10, 11, 12, and Alton Pools. An unexpected retirement has reduced mapping capacity. USGS is moving forward with recruitment to hire another mapper.

UMRBA Water Quality Assessment

Kirsten Wallace summarized UMRBA's recent assessment of water quality conditions on the river. Wallace reminded that UMRBA was specifically tasked by the Governors to serve as its interstate water quality entity.

A first major initiative of UMRBA was a deep dive study to describe the river's water quality conditions. Wallace said the resulting 1989 How Clean is the River? Report found that 69 percent of the river had water quality problems, with most of the degradation at the upstream and downstream ends of the river. The best water quality was between L&Ds 10 and 19 and L&Ds 20-21 – i.e., away from the major metropolitan areas and major tributaries (Minnesota, Illinois, and Missouri Rivers). The biggest impact in the areas associated with lesser water quality was the harm to the fish. The How Clean is the River? Report was used to set the course in subsequent years for UMRBA's focus on sedimentation and toxic pollutants.

In 2019, UMRBA's Water Quality Task Force reflected on this report, observing that a lot has changed since then and decided to reassess the long term trends in water quality. This report picks back up from where the 1989 report concluded in terms of the trend period, evaluating trends from 1989 to 2018 and using flow-adjusted trend analyses, which allows for measuring the trends in concentration that are not simply correlated with river flows. The analysis uses ambient water quality data collected by Minnesota Pollution Control Agency, Wisconsin DNR, and Illinois Environmental Protection Agency as well as the UMRRA's long term resource monitoring as well as long term continuous flow records from gages maintained by USGS and the Corps. UMRBA anticipates publishing the results of this report in late winter/early spring 2022.

The How Clean is the River Report? evaluated the 23 water quality parameters. Some of the trends are very encouraging and some are concerning. Wallace summarized a few of the findings as follows:

Nutrients: Consistent with other studies, total phosphorus and ammonia are decreasing. Historically, there has been greater focus on regulating these two nutrient forms than other nutrients. Total nitrogen and nitrate and nitrite trends are increasing in the northern stretches of the Upper Mississippi River and are more variable or less statistically significant in the southern half of the river. There are some decreases in nitrogen in the Illinois River and nitrate and nitrite in the middle portion of the Upper Mississippi River.

Total suspended solids: Turbidity is decreasing in most places throughout the Upper Mississippi River. This trend is consistent with UMRR long term monitoring. This trend is likely in response to soil erosion measures implemented in the river and throughout the watershed.

Chlorophyll: Unlike some of the other parameters, chlorophyll, which is an indicator of algal biomass, showed a very clear split in trends, with the northern half of the Upper Mississippi River showing decreases and the southern half of the river showing increases. Chlorophyll may be increasing in the southern reaches because the catchment area is larger and therefore the concentrations of nutrients are still likely high enough to support algal growth despite overall reductions.

Temperature: Water temperature is trending downward throughout the Upper Mississippi River System. This trend corresponds with the increasing trend in available oxygen since colder water can hold more oxygen.

Heavy metals: Heavy metals are often bound to sediment in the environment. Decreases in suspended solids may be contributing to downward trends in heavy metals such as zinc, aluminum, and copper. The increasing trends in lead concentrations were surprising. There is not a clear explanation as to why. UMRBA staff are working with state experts to review the data and/or evaluate potential sources.

Sulfate and chloride: The widespread increases in sulfate and chloride are not surprising and reflect the states' priorities to focus on loading reductions.

Wallace listed the important takeaways from the results as follows:

- These results are consistent with other studies including UMRR long term resource monitoring.
- While the 1989 results led UMRBA to focus on toxic pollutants and sediment; the focus for UMRBA now is on nutrients and chloride and the new report confirms that that is the right focus.
- The more encouraging trends for toxic pollutants, sediment, and phosphorus provide evidence that the work that has been accomplished in managing water quality is beneficial and that the approaches taken have been effective.
- Long term monitoring is incredibly valuable for understanding the effectiveness of management and where to invest to have the biggest impact.
- While water quality is an aspect of UMRR's long term monitoring, it provides very helpful knowledge beyond its intent and programmatic mandate.

Wallace said UMRBA anticipates publishing the How Clean is the River? Report in early 2022. UMRBA is

partnering with UMRR and America's Watershed Initiative to package and communicate these results so that they can be meaningful to key people and organizations.

Wallace expressed appreciation to Missouri DNR staff Erin Petty, who pulled the results together and is helping to write the report. Additionally, Wallace thanked the UMRBA Water Quality Task Force for encouraging this report to be a priority and to Illinois EPA's Gregg Good for surfacing the 1989 report that triggered this assessment.

Wallace acknowledged the next hurdle making all of this information accessible and understandable to support decision makers and the public's use of the river.

UMRBA Water Quality Executive Committee Report

UMRBA Draft 10-Year Water Quality Program Plan

Katrina Kessler, Chair of the UMRBA Water Quality Executive Committee (WQEC), reported on UMRBA's water quality program in 2021 and provided an outlook for planned efforts in 2022. Of particular note, the WQEC developed a draft 10-year program plan that will help guide where the states prioritize resources over the near term with a long term vision in mind. Kessler thanked Wisconsin DNR for providing volunteer facilitation support by Dan Helsel.

Over the course of one and a half years, the WQEC held several strategic planning sessions, focusing on "what business should UMRBA be in and why?" and the answer involved a series of strategies related to monitoring, assessment, research, partnering, communications, and aligning the states' water quality programs in the river and watershed.

Kessler acknowledged that significant achievements have been realized, with long term monitoring showing improvements over time in some water quality parameters in the Upper Mississippi River System. These trends have shown what can be accomplished through a mix of voluntary and regulatory measures. The primary WQ problems facing the region today are related to nutrients, sediment, and chloride, which may be exaggerated by the changing climate and hydrology. The draft 10-year water quality program plan reflects the states' needs in advancing their responsibilities for CWA and nutrient reduction strategies and the states' shared concerns regarding HABs, emerging contaminants, and chloride among other parameters.

Kessler reported that the draft plan has been reviewed internally within the WQEC's respective agencies. Next steps after incorporating that feedback are to request review a) by a broad array of stakeholders and b) the UMRBA Board.

Kessler said the draft 10-year UMRBA WQ program plan involves five goals relating to better understanding water quality conditions and trends, improving water quality conditions (aligning the states' programs at a regional, interstate level), maintaining effective forums for interstate cooperation, building new and strengthening existing strategic partnerships, and securing resources to effectively implement the other goals. Kessler acknowledged that the plan is ambitious, particularly considering existing levels of funding. But the work is necessary, and the hope is that the plan strategically positions UMRBA to compete for various funding opportunities.

2021 Highlights

Kessler mentioned highlights of UMRBA's water quality work in 2021 as follows:

- On April 9, 2021 and April 13, 2021, UMRBA hosted a workshop on progress tracking related to the states' implementation of their respective nutrient reduction strategies. WQEC members and state staff who work on the nutrient reduction strategies took deep dives into four topics related to progress tracking: measuring nutrient reduction from BMP implementation, capturing private investment in BMPs, monitoring water quality to detect changes in nutrient reduction, and incorporating new datasets.
- The WQEC developed a chloride resolution in consultation with the state DOTs. The WQEC will be reviewing the feedback in the next month and anticipates bringing that in front of the Board for consideration of endorsement during its February 2022 quarterly meeting.
- The Hypoxia Task Force Coordinating Committee meets monthly and has arranged working groups focused on advancing specific priorities, such as monitoring, communications, ecosystem, social metrics, and so on. WQEC members, other UMRs state staff, and UMRBA staff are actively involved in the working groups. The HTF is scheduled to meet December 13-14, 2021 virtually. UMRBA and the states are preparing for presentations and various remarks. UMRBA and USGS will be presenting on the nutrient trends from both the UMR Status and Trends and the UMRBA How Clean is the River? Reports. Of particular note, the Hypoxia Task Force Coordinating Committee is meeting to discuss the funding specifically directed to the Hypoxia Task Force states in the infrastructure package as well as the other funding made available through USEPA, USDA, and other federal agencies that could be used for nutrient reduction. This is in addition to, but can be leveraged with, the American Rescue Plan funds, annual federal appropriations, and the reconciliation bill as well as state financing. Kessler recognized that this is a unique moment where significant progress can be advanced on the Gulf Hypoxia Action Plan, which aims to reduce nutrient runoff through the watershed.
- UMRBA continues to engage with federal agencies and Congressional members, including with the Federal Water Subcabinet and new Administration officials within USEPA. UMRBA as well as WQEC and WQTF members participate on various regional and national forums.

UMR Interstate Water Quality Monitoring: Reaches 8-9 Pilot Update

John Hoke presented an update on the implementation of the UMR Interstate Water Quality Monitoring Pilot in CWA-defined Reaches 8-9 – i.e., 109 river miles from the Iowa River confluence to L&D 21. This pilot is being implemented in partnership among UMRBA, Missouri, Illinois, and Iowa. Hoke remarked that it has been a truly collaborative project among the state environmental and conservation agencies. He acknowledged the Lauren Salvato's leadership in coordinating the project and ensuring that its implementation is seamless among the states. It has been a very positive experience. Hoke expressed appreciation to Dan Kendall with Iowa DNR for his role as WQTF Chair through most of this project.

Hoke explained that the purpose of the pilot is to test the feasibility and effectiveness of the UMR Interstate Water Quality Monitoring Plan (also known as the UMR CWA Recommended Monitoring Plan). This is the second of two pilots of that plan. Minnesota and Wisconsin implemented a pilot in Reaches 0-3 (i.e., Twin Cities to the Root River confluence) in 2016. The Reaches 8-9 pilot benefitted from the various implementation methods used in the Reaches 0-3 pilot, but deviated as appropriate to reflect the very different characteristics and needs of the river system in the southern portion of the

UMR. While the Reaches 8-9 pilot collected fish tissue samples to assess human health designated uses, it did not collect vegetation and macrophytes as was done for the Reaches 0-3 pilot.

All three states contributed evenly to the project, resourcing \$60,000 in either in-kind contributions or a direct payment to UMRBA which then paid for various aspects of the pilot's expenses. For example, Missouri DNR provided in-kind laboratory analysis so that most, if not all, of the data analysis would be done consistently across the pilot. Iowa DNR provided analysis of cyanotoxins and USEPA Region 5 provided analysis of PFAS samples.

Hoke overviewed project modifications given unforeseen implementation challenges, mostly involving the onset and duration of the COVID pandemic. COVID-related travel constraints delayed the project timeline by a year. The pilot team was able to effectively pivot on the various challenges and identify solutions. Sampling period was postponed and restarted after about a six-month delay. Sampling protocols were implemented with various COVID safety measures. Water suppliers in the pilot area were prepared to voluntarily collect information related to public drinking water designated uses, but were unable to do so because of capacity constraints during the pandemic. The data were able to be collected elsewhere. Additionally, USEPA Region 5 adjusted sampling protocols to combat contamination issues, new tracking protocols were implemented to help combat shipping issues (i.e., lost packages), and the macroinvertebrate sampling size was reduced due to the loss of five Hester Dendy samplers (out of 34 total) in both Reaches 8 and 9.

Hoke provided a status update on the pilot implementation. Data collection is mostly complete with the exception of remaining fish sampling. Laboratory analysis of water chemistry, PFAS, and cyanotoxins is complete. Fish tissue analysis is awaiting the remaining fish collection. Hoke announced that the Missouri Department of Health and Human Services received grant funding to analyze fish tissue for PFAS. The Reaches 8-9 pilot will be able to utilize that funding to detect PFAS levels in the fish already captured in addition to the other parameters that were initially planned for fish tissue analysis. The contractor planned for analyzing the macroinvertebrate samples is no longer available and the pilot team is searching for a new contractor with that capability.

Hoke thanked Andy Fowler of Iowa DNR for developing a database for the Reaches 8-9 pilot that will be available for future use. The field staff are currently entering their respective data into the database and performing QA/QC. Hoke reflected on the amount of consultation to reconcile the various individual state monitoring standards so that the project data would be consistent and also available for other uses in the future. Hoke said John Olsen, formally with Iowa DNR, will serve as a private contractor to analyze the data and write an assessment report.

In response to a question from Dru Buntin, Hoke said staffing constraints was the primary reason that private water suppliers were no longer able to voluntarily collect the water quality data. Additionally, the logistics of getting the samples to laboratories was problematic, especially given their staffing constraints. Hoke noted that the data was collected through another mechanism.

Jim Fischer congratulated Missouri, Iowa, and Illinois for implementing the pilot during a challenging time. Fischer recalled the Reaches 0-3 pilot experiencing similar challenges implementing sampling during record high water conditions. A few Hester Dendy samplers were lost then as well. Fischer asked for Hoke's opinion on whether he believes the Hester Dendy method is appropriate to continue using or if he would suggest considering a different macroinvertebrate sampling method. Hoke noted the inherent challenges of macroinvertebrate sampling on large river systems, but expressed his opinion that the Hester Dendy method is useful. Fischer noted that the southern pilot used the UMRR long term

resource monitoring methods whereas the northern pilot used the EMAP-GRE methods. In response to a question from Fischer, Lauren Salvato said that question will be explored as the analysis and evaluation reports are being developed and the WQTF reflects on the assessment. Salvato noted some feedback from sampling crews that the shorter sampling transects in the LTRM method is beneficial to them from a logistics standpoint. Salvato mentioned that one challenge in the Reaches 8-9 pilot for fish sampling was getting the minimum number of bass in the right size parameters. Fischer said he looks forward to reviewing the analysis and reflecting on both pilots to improve the overarching UMR Interstate Water Quality Plan.

Karen Hagerty noted that UMRR is considering reinstituting macroinvertebrate sampling as part of its long term resource monitoring and is interested in learning from the Reaches 0-3 and Reaches 8-9 pilots. Hagerty noted that the Reaches 8-9 area is a transitional zone for aquatic vegetation and asked if the sampling crews noted the presence of aquatic vegetation. Salvato explained that the UMR Interstate Water Quality Plan calls for vegetation monitoring from Reaches 0-6 (or to Pool 13), but the pilot team did consider sampling anyway because of the limited data there. But, given the intensity of the sampling methods, the Reaches 8-9 pilot ultimately did not include vegetation monitoring.

Navigation and Ecosystem Sustainability Program

Andrew Goodall reviewed the construction-readiness projects under the Navigation and Ecosystem Sustainability Program (NESP) authority. These projects were prepared for construction in FY 2021 under the \$5 million allocation. Navigation-related projects totaling \$12.5 million include the L&D 25 lock wall modification, L&D 14 mooring cell, and Moore's Towhead systemic mitigation project on the Illinois River. Ecosystem restoration-related projects totaling \$10 million include Twin Islands shoreline protection project, Alton Pool Islands, Pool 2 wingdam notching, and Starved Rock habitat restoration and enhancement. Goodall confirmed that all of these projects are anticipated to be construction-ready in FY 2022.

Goodall reported that MVD submitted NESP as a candidate to consider for funding through the Infrastructure Investment and Jobs Act (IIJA). It is anticipated that the Corps will announce IIJA allocations in 30 to 60 days.

Goodall explained that the L&D 22 fish passage tentatively selected plan is being transmitted to Corps HQ for approval. HQ review is required for any fish passage projects nation-wide. Goodall said he anticipates meeting the scheduled milestone of having HQ approval for the LD& 22 fish passage feasibility study by the end of calendar year 2021.

Goodall reported that the Corps District-based river teams recommended 29 habitat projects to advance as a first set of ecosystem investment through NESP. A subset of 12 of those projects were submitted to MVD for review and approval. Pending NESP funding, those projects would start planning and design work. Following MVD's review of the first subset of projects, MVR plans to submit the remaining 17 projects to MVD for review. Goodall reflected on the set of projects, noting that they provide a robust suite of important ecosystem restoration opportunities. Upon approval, these projects will be added to NESP's website. Goodall provided further detail on the first subset of 12 habitat projects, noting that two projects are systemic in nature (forest restoration and water level management).

Dru Buntin noted that there is not currently an existing forum for NESP member agencies to consult on program implementation. Buntin asked for the Corps' perspective on out-year planning for investments in both the navigation and ecosystem components of the program. He acknowledged the tremendous

amount of coordination that has to occur to make NESP as a program and the individual projects a success. Buntin asked what will be the forum for coordination and consultation to ensure that all NESP member agencies are operating effectively together. Goodall recalled that NESP received \$4.5 million in FY 2020 after a long period of not receiving funding and being inactive. The Corps had informal conversations with partners in FY 2020 and FY 2021 and work with partners through the District-based river teams to generate the current list of habitat projects reported on earlier. Goodall reflected that there were some challenges because of the lack of a formal consultation body but said *ad hoc* coordination conversations have occurred. Goodall reported that the Corps intends to prioritize partner coordination accordingly with the additional funding. Goodall said he would envision a coordinating body being convened similar to NECC. He noted the value of having a forum for addressing implementation challenges among other reasons. Buntin added that the states have efforts underway on the river that could benefit from coordination and understanding how best to invest resources and leverage capacities.

Olivia Dorothy asked Kirsten Wallace when a briefing may be scheduled on the NESP 2019 economic update, noting prior requests from UMRBA to the Corps for information on the analysis. Wallace noted that the Board has received a briefing of the economic update in summer 2019. Goodall said the 2019 economic update was released via a FOIA request, but there has been no further instruction to disseminate the update. Wallace said she can raise it with UMRBA's Board as to whether to include the briefing during a future meeting.

In response to a question from Dorothy, Goodall said the NESP website was revamped about 1-2 years ago and he would ensure that relevant program documents are made available. Hagerty described the location of the 2004 navigation feasibility study EIS.

Kraig McPeck reiterated the necessity of reestablishing formal consultation arrangements. Whatever the result of NESP's inclusion in the IIJA work plan or appropriations process, McPeck advised that NESP's member agencies need to be prepared to have deliberations in a formal manner to fully support the program and work together as a group of implementing partners. Goodall expressed understanding and appreciation for McPeck's perspective.

In response to a clarification from Andrew Stephenson, Goodall confirmed that an informal group of NESP's implementing federal and state partners expressed concurrence for the first 12 projects sent to MVD. The Corps notified the informal group of the remaining 17 projects but the group did not express a similar level of concurrence. Gretchen Benjamin asked who was involved in determining the number of projects to submit to MVD out of the 29 projects and which of those projects to submit to MVD. Benjamin asked if there were just Corps staff or if other partners were involved in the decision making. Goodall said other partners were involved in the decision making. Kirsten Wallace and Andrew Stephenson clarified that the Corps identified the 12 projects and presented that list to the informal group of federal and state partners, which in turn voiced support for the submission to MVD.

Mississippi River Initiatives

Mississippi River Cities and Towns Initiative

Chair of the Mississippi River Cities and Towns Initiative (MRCTI) and Mayor of Kimmswick, Missouri Phil Stang announced that Rep. Benny Thompson introduced the MRCTI-backed Safeguarding the Mississippi River Together (SMRT) Act (HR 4729). Mayor Stang cited natural disasters and infrastructure and budget challenges occurring in the river's cities and towns. He explained that MRCTI's intent through this

measure is to establish a comprehensive restoration plan and a national Mississippi River program office for the purposes of restoring the river's ecology, mitigating disasters, sequestering carbon, and making the region more resilient. Mayor Stang said the program office would be placed within USEPA, which would operate the program in close coordination and cooperation with the Secretary of the Interior and in consultation with USDOT, USDA, and USACE. Mayor Stang said MRCTI's intent is collaboration with river-based economies such as navigation, agricultural, tourism, and manufacturing economies. The measures include funding for natural and other forms of infrastructure and states' nutrient reduction strategies. Mayor Stang welcomed UMRBA feedback into MRCTI's legislative proposal.

Mayor of Bettendorf, Iowa Bob Gallagher echoed the sentiments of Mayor Stang regarding MRCTI's member mayors' perspectives on the importance of the legislation and in encouraging UMRBA to provide its member states' joint comments. Mayor Gallagher said MRCTI is also working to address the problems associated with plastic pollution. Noting that the Mississippi River drains 40 percent of the continental United States, the volume of plastic pollution and associated challenges are particularly acute for the cities and towns located along the river. Mayor Gallagher cited research estimating that, if strong measures are not taken, by 2040, about 29 million metric tons of plastic trash will flow into the oceans globally every year. Mayor Gallagher noted that clean up efforts have been occurring for decades, underscoring the need to invest in efforts to prevent plastic pollution from entering the nation's rivers and streams.

MRCTI has partnered with United Nations Environment Programme, National Geographic Society, and the University of Georgia to launch a pilot initiative in three major Mississippi River cities (Baton Rouge, St. Louis, and St. Paul). These cities will promote education and outreach materials about plastics in inland waters and support local data collection events in their communities. In part, data collection is done through the use of a marine debris tracker created by the University of Georgia. The purpose is to help determine what, where, and how plastics make their way into the Mississippi River. It is anticipated that the results will catalyze policy makers, business leaders, and citizens to take action. During April 2021, approximately 75,000 pieces of litter were collected in these major cities through the marine debris tracker, with 75 percent of those items being plastic. The most common items collected were cigarette butts, food wrappers, and beverage bottles. The Quad Cities was selected for a second phase of the pilot. In October 2021, over 25,000 items were collected in the Quad Cities area. The inventory of the collected trash is ongoing.

Mayor Gallagher emphasized the importance of this initiative to river communities. Global waste in inland waters and oceans is an increasingly urgent problem. On behalf of MRCTI, Mayor Gallagher called for coordinated and systemic action to reduce plastic pollution in the Mississippi River.

Dru Buntin emphasized that the relationship between states and local communities is essential. Buntin noted his recent visit to Kimmswick, Missouri with Mayor Stang, indicating that it has helped shaped the State of Missouri's planning around a grant program to work with local governments in advancing joint priorities such as storm water and flood events, recreation and tourism, or ecological restoration projects.

In reference to the SMRT Act, Buntin observed that UMRBA and MRCTI share common objectives but that there are some concerns and questions about how it is structured. Buntin offered to have a conversation about how the proposal is structured. Buntin acknowledged that UMRR is one of the oldest and first big river ecological restoration and monitoring programs in the country and it is important that the program remain a priority for the region in addition to the other priorities covered in the SMRT Act. Buntin said it is particularly important to carefully consider the best mechanism to support federal, state, and local

partnerships in advancing the states' nutrient reduction strategies, including with the stakeholders who would be responsible for implementing the various conservation measures.

Colin Wellenkamp responded that MRCTI concerns with comments shared by Buntin. Wellenkamp said MRCTI referenced UMRBA's work in assembling the SMRT Act. In particular, that includes a priority to reduce nutrient runoff at its source. The SMRT Act includes a grant program that MRCTI believes would help facilitate the states work with farmers. The SMRT Act would work to protect existing authorities and investments. It includes language that existing agencies doing work in the river would not lose their current authorities or budget items and nothing in the Act would usurp current work. Instead, the SMRT Act would create space for the work of federal agencies, states, and various local governments to better coordinate, share information, and support one another. Wellenkamp acknowledged the complexities for local governments in working with eight different federal agencies with some responsibility on the river as well as states and counties. The intent is to facilitate their cooperative action to leverage resources and capacity. Wellenkamp said MRCTI would welcome the opportunity to work with UMRBA to review the proposal.

Olivia Dorothy asked about why MRCTI's agenda topic was expanded from a single topic of plastics pollution as indicated in the preliminary agenda to the generic title of "MRCTI report." Dorothy expressed frustration that MRRRI was not invited to provide a briefing regarding its legislative proposal under this portion of the agenda. Kirsten Wallace explained that UMRBA requested a presentation from MRCTI on its plastics pollution initiative because it is a recent event with newer information. In response to that request, Wellenkamp requested a broader MRCTI briefing that was accepted. Wallace mentioned that MRRRI has briefed the UMRBA Board during a previous quarterly meeting and that UMRBA continues to offer a relationship to discuss MRRRI's legislative proposal similar to the offer just made with MRCTI. Dorothy expressed concern with feedback that she received from a Congressional office about UMRBA's position on MRRRI. Dorothy observed that there are significant differences between MRRRI and the SMRT Act, including how they are structured and relate to existing authorities. Dorothy expressed her opinions related to the SMRT Act, including its geographic focus, relation to existing authorities, and public engagement, particularly among communities of color and low income. Dorothy put forth her concern that UMRBA appears to be excluding environmental groups and the MRRRI proposal in particular in today's panel about Mississippi River initiatives.

Wallace clarified that, in any conversations with legislative staff about either legislative measure, she has clearly articulated that any questions or observations were solely hers as having worked on river policy for many years. UMRBA has not taken a position on either measure except stating a desire to learn more about them. Wallace said she has simply asked questions about what either measure would mean in terms of logistics and other factors. Wallace offered time to talk following the meeting further about MRRRI. The Board has expressed interest in learning more about MRRRI. Rep. Betty McCollum's staff Josh Straka provided a briefing on MRRRI to the UMRBA Board during its August 2020 quarterly meeting. UMRBA requested that presentation shortly after MRRRI was introduced publicly. Shortly after that, Wallace said she reached out to Rep. McCollum's office offering to work with them to learn more and connect MRRRI with other river stakeholders. Wallace said there was no intent to exclude any group from today's discussion. All three groups included on today's agenda had recently finished or launched an event that is relevant to the Board's interest. Buntin said UMRBA has talked about both legislative measures. The states have questions about how they would be implemented. The Board's initial conversations helped Wallace form some of the questions she has asked, but those questions are intended to better understand the measure and inform the feedback and any potential positions that UMRBA and/or the states may want to offer.

Brandt Thorington responded to Dorothy's observations about the SMRT Act and extended an offer to work with UMRBA and the MRRRI coalition. Regarding environmental justice, Thorington said the SMRT Act is endorsed by the NAACP and the National Urban League, sponsored by Rep. Benny Thompson, and is named after civil rights leader Ambassador Andrew Young. Thorington added that the SMRT Act includes a grant program that would advance environmental justice. Wellenkamp added that MRCTI includes a number of mayors that represent some of the most vulnerable and historically neglected communities in the country along the delta area. They had worked with Rep. Thompson to make sure that social equity was a major component throughout the measure. The bill includes a position designated for the Congressional Black Caucus to serve on the federal committee for the Mississippi River national management plan.

Mississippi River Basin Monitoring

Liz Crow shared The Nature Conservancy's (TNC's) efforts to design and secure a Mississippi River Basin comprehensive monitoring system. In the basin, Crow explained that TNC's state chapters work collaboratively towards a shared goal of reducing nutrients entering the Gulf of Mexico by 20 percent by 2025. Crow said she anticipates that goal shifting given timing and new efforts to create a basin-wide monitoring system. TNC's Mississippi River Basin program originally started in 2015-2016. TNC has organized teams of staff from the state chapters relating to science, agriculture, floodplains, government relationships, finance, and leadership.

Crow explained that, while there is incredible monitoring work in the Upper Mississippi River, there are not similar levels of investment in monitoring in other major subbasins of the Mississippi River. Crow and Heidi Mehl explained that TNC's various teams that were focused on the Mississippi River Basin simultaneously began to ask whether the current monitoring programs are adequate to determine levels of risk and the effects of actions to mitigate those risks. This is important for guiding and assessing the effectiveness of TNC's investments. This triggered a robust effort led by TNC and in consultation with partners to design a monitoring system while also exploring how the funding and policy could be secured to support and maintain the proposed system. TNC is committed to working through a robust collaboration of partners to develop a problem statement and find solutions that are feasible and lasting.

Mehl reported that, as a results of TNC Agility Labs designed to collaboratively reach decisions more quickly, three categories of needs were identified: target places and solutions, align funding, and recruit champions and advisors. Ultimately, TNC's north start goal that was defined during the Agility Labs is to "have a fully funded, constructed, and staffed monitoring system across the Mississippi River in the next five years."

Mehl described the process to date. So far, a majority of the work has been in building a coalition. The Agility Lab was held in summer 2020 that kicked off the process. In spring 2021, TNC began announcing this effort more broadly. That was made possible through a Lower Mississippi River Science Symposium hosted by Tulane University and funded by the Charlotte Beyer Hubbell Fund. The Symposium is intended to be an ongoing meeting through which TNC is growing its partnership on this effort. Mehl invited interested people to contact her to join that symposium. TNC's focus in spring and summer 2021 was on building the coalition, with the goal of speaking as a unified voice and acquiring the support and public funding necessary to meet the monitoring goal for the Mississippi River Basin. Growing the coalition will be a continued focus for TNC. Mehl mentioned that UMRBA has been involved in these efforts and is a member of the coalition.

Additionally, TNC distributed a survey broadly to its partners following the Agility Lab to get input on what a sentinel monitoring system should address. Responses generally revolved around these themes: leverage funding available for navigation and flood risk management and resilience to also address ecosystem restoration and water quality and hypoxia in the Gulf of Mexico as well as throughout the Mississippi River system.

TNC held a second Agility Lab with members of the coalition to focus on design principles. The goal for the lab was to “urgently deploy a durable, consistent, integrated, and transparent monitoring system across the Mississippi River Basin that will be a ‘sentinel for the basin,’ providing critical infrastructure for the nation through standardized information on present and future flooding and flood risk, water quality and sediments, and ecosystem health.” Mehl reviewed the principles (e.g. accessible, efficient), design elements (e.g., functionality), and data and information (e.g., real-time data, trends). Mehl emphasized that the monitoring design needs to tell the story of the river and help with adaptive management. TNC is currently convening 1) a technical design group to identify criteria and selection of high priority monitoring sites for stream gauges, including reviewing existing monitoring programs that can be replicated in other parts of the Mississippi River Basin and 2) a support group to identify key stakeholders and decision makers who can be champions of this work and identify sustainable federal funding sources.

Ecosystem Restoration Index

Eileen McLellan recently wrapped up a series of workshops, titled “Landscapes and Riverscapes: Metrics for a Healthy Mississippi River Ecosystem.” The Walton Family Foundation tasked the Environmental Defense Fund (EDF) with developing a metric (or set of metrics) that could connect the work of their various grantees. The Foundation suggested a larger vision of a healthy and resilient Mississippi River basin. The challenge for EDF was in bringing people together to simplify the complexity of the river ecosystem into that set of metrics. McLellan observed that there is a growing recognition of the importance for increased federal investment in the river system.

Leading up to the workshops, EDF conducted an extensive literature review and convened lengthy interviews with various government representatives as well as academic and nonprofit scientists and practitioners. The group of interviewees had a deep and wide ranging knowledge of the river ecosystem.

Pointing to the Mississippi River basin’s expansive geographic area, McLellan identified the two greatest human-induced impacts within the system to be intensive agriculture production primarily in the Upper Mississippi River basin and extensive large-scale river engineering in the Lower Mississippi River alluvial valley and delta. McLellan recognized that, while many stakeholders are familiar with their part of the system, they may not consider the grander scale of the basin and how the various places interact.

McLellan said people tend to value what is seen and measurable – e.g., water chemistry and abundance of biota. These things are typically reflective of ecosystem condition. However, McLellan explained that improving ecological health requires a deeper understanding and recognition that ecosystem condition reflects ecosystem function and resilience. Improving the former will require pulling levers of the latter. Additionally, work needs to focus on the stressors that impact ecological function and resilience. McLellan explained various future trajectories of ecosystem condition over time given management intervention. The idea is to focus on a desired future condition – i.e., designing a future ecosystem that maximizes ecological benefits while recognizing the social and economic needs of the region.

The workshops were focused on convening experts to loosely define that desired future condition. The answer was “we will know we have a healthy Mississippi River ecosystem when we have clean water, thriving wildlife, and vibrant communities.” The resulting goals and targets are as follows:

— Goals:

- Clean water supports people and wildlife (*water quality goal*)
- Rivers and streams flow at levels that support people, fish, and wildlife (*hydrology goal*)
- Habitat is protected and restored (*habitat/biota goal*)

— Targets:

- Nutrient concentrations
- Population of select biota
- Percent of native vegetation – wetlands

McLellan acknowledged that there is a massive amount of work needed to develop numeric values for these targets. She asked for partnership from UMRBA and experts on the Upper Mississippi River to provide technical input.

McLellan explained that a large part of the workshops focused on how the stated desired future condition might be achieved. Participants spent a considerable amount of time discussing indicators of stressors, functions, resilience, and condition, trying to understanding how changes in those various things might change over time.

McLellan explained a conceptual model relating the stressors, impacts, functions (ecosystem services). For example, land use change might include increased percentage of agricultural land. That would likely result in reduced pollutant sinks, impacting hydrologic regulation, biogeochemical regulation, and habitat provision. McLellan defined increased resilience as a) maintaining function under greater levels of stress and b) allowing for greater ecosystem functions under any given level of stress.

McLellan said the workshops generated “leading” indicators that collectively might predict the future of ecological condition. They include 14 indicators of stressors, nine indicators of ecosystem function, and four indicators of ecosystem resilience as well as 17 “lagging” indicators of ecosystem condition. McLellan discussed how the integration of these indicators can provide a basis for an adaptive management framework, helping to evaluate whether management actions are actually resulting in desired change.

Next steps for the Environmental Defense Fund are to develop numeric targets, compare the proposed metrics to other ecological areas, engage with other groups working on similar projects, explore remote sensing approaches, and explore a potential synoptic indicator that would make it easier to communicate about the overall Mississippi River system’s ecological health to the public.

Kirsten Wallace noted that the Environmental Defense Fund had originally proposed developing a single indicator, and asked McLellan to reflect on what has been learned about the complexity of the river system that requires 40 indicators rather than finding one indicator. McLellan said the Environmental Defense Fund recognizes the necessity of having a single, synoptic indicator or restoration index (as a way of combining indicators) building public awareness of the river system and garnering their interest in its management. The use of so many indicators, which also have quite a bit of variation within the system, is

confusing the public. The Environmental Defense Fund intends to build towards that single indicator or index. Buntin said it would be helpful to connect this work to the UMRBA Water Quality Task Force.

Brandon Road Lock and Dam

Loren Wobig said Illinois DNR serves as the non-federal sponsor for the Brandon Road L&D ecosystem project, which is intended to provide a deterrent from invasive carp advancing into the Great Lakes. Brandon Road is a key focal point of control because the dam is very tall and therefore any advancement of an aquatic creature would need to move through the lock in order to transfer between basins. The goal of the Brandon Road ecosystem project is to create a gauntlet of technologies that would deter fish from moving upstream. The technologies include the use of sound, bubbles, sterile channel, electricity, flushing of the lock, and more.

Wobig provided an update of the project in the preconstruction, engineering, and design (PED) phase. The project is being advanced in partnership with the U.S. Army Corps of Engineers and State of Michigan, which is contributing \$8 million to meet the non-federal cost-share requirement as well as providing technical expertise. Almost \$29 million is estimated to complete PED on the first of three construction phases. This funding would allow for designing construction plans for the first iteration as well as achieving a 30 percent design level on the remaining two construction phases.

The PED phase includes various planning meetings and design charrettes, initiating land rights. Initiate land writes (including surveying, testing, and negotiations for securing non-public lands), research related to the innovative project technologies, and outreach with stakeholders and interested parties. Plans include soils and environmental testing to examine concerns related to hazardous waste on properties in the vicinity of the project area.

Wobig explained that, between now and through FY 2024, milestones include completing data gathering and modeling as well as land rights negotiations and acquisition, and completing construction plans and specifications. It is anticipated that a construction contract award for the first increment would occur in FY 2024. Work on construction plans and specifications related to the second and third construction phases would occur in FYs 2024 through 2029.

Wobig said the Brandon Road project is exciting in that it is truly innovative engineering, combining technologies in new ways and incorporating new technologies. He explained the technology and testing, including through the Corps' Engineering Research and Design Center (ERDC) and the three-dimensional pier for the tainter gate section of the dam.

Wobig said a meeting is scheduled with navigation industry representatives on December 2, 2021 at ERDC to view the construction of the physical modeling as it is progressing. Wobig elaborated on some of the outreach initiatives (communication, collaboration, and connection), including through the use of forums, workshops, and a newsletter. Wobig reflected on Illinois' perspective related to public waters. Illinois DNR is charged to jealously guard and vigilantly protect the rights, interests, and uses of the public in any public body of water, including the natural resources thereof. This requires Illinois to ensure that the impacts of Brandon Road to public waters be avoided, minimized, or mitigated. Noting Illinois' floodway use regulations, Wobig explained that the Brandon Road design team has initiated the process of issuing a letter of map revision. This will allow for more flexibility to do work in the approach channel without needing to be concerned of regulatory floodway issues within the state.

Wobig spoke to Illinois' priorities for ensuring social and environmental justice. In particular to the Brandon Road area, Illinois wants to ensure public access is maintained for people who use the river to fish for sustenance.

Wobig reported that Illinois has initiated using the Corps' issue escalation process to resolve impediments to project implementation related to project partnership agreements (PPAs) and the requirement for securing Illinois state permits. Wobig acknowledged the tremendous contributions of many individuals who are working very hard to create the most cost-effective construction project with the least environmental impact.

Wobig noted that the current cost-share funding requirement for Brandon Road is 80 percent federal and 20 percent non-federal cost share. On behalf of Illinois, Wobig made the following requests:

- UMRBA submit letter of support to Senate EPW Committee requesting full federal funding for Brandon Road, copying the Congressional Great Lakes Task Force
- The states of Iowa and Missouri to ask their respective Senators to join Great Lakes States' Senators in supporting full federal funding for Brandon Road due to the Mississippi River Basin wide benefits

Buntin expressed appreciation for the level of coordination occurring recently with the navigation industry. Buntin said he believes Missouri would support Illinois' request, expressing the importance to address the impacts to navigation in the area and the ability to enact two-way control measures. Wobig said the project team has occurred two workshops with the navigation industry that have resulted in important improvements to the project. Wobig mentioned that the project design team is evaluating incorporating deterrents at the upstream side of the lock to prevent movement downstream of aquatic invasive species. Barb Naramore said a letter from UMRBA would be helpful and appropriate. Steve Galarneau expressed support for a letter from UMRBA as requested, but also suggested Illinois consider seeking full federal funding for operations and maintenance in addition to construction and design. Tim Hall said he believes Iowa would support the letter, but would need to get review from Iowa DNR leadership. Wobig said he would be happy to work with Kirsten Wallace to draft a letter for the Board's consideration.

Naramore observed the importance of continuing to evaluate and advance opportunities to reduce the potential for transmission of aquatic invasive species from the Great Lakes to the Mississippi River Basin. She directed that there be consideration regarding a communications strategy for expressing UMRBA's priorities for protecting the Mississippi River Basin. Wobig agreed, citing Illinois' priority for ensuring that the electric barrier located within the Chicago Sanitary and Ship Canal is not diminished as it protects inter-basin movement of invasive carp.

UMRBA Resilience Planning Priorities

Kirsten Wallace recalled that the UMRBA Board met in-person on July 27-29, 2021 to identify joint state priorities related to flood, drought, and sediment to pursue through the Association. UMRBA continues to hold the following long term goals that it developed in 2016, as follows:

- Minimize the threat to health and safety resulting from flooding
- Develop new, or renew existing, comprehensive long-term channel management strategies
- Develop mitigation strategies for multi-year drought events

- Support environmental sustainability, restoration, and water quality goals
- Accelerate reduction in the volume and rate of runoff to the Mississippi River

During the July 27-29, 2021 meeting, UMRBA's Board members reflected on the input received throughout the Keys to the River Report development. One major observation is the immense contributions of the various federal agencies, academic institutions, nonprofit entities, and others. This work will benefit from the region's wide ranging commitment to collaboration both at the regional scales and within the states. UMRBA can leverage those collaborations and utilize knowledge and capacity and learn with them. The Board recognizes the importance of convening trusted experts and various interdisciplinary expertise and skillsets and building a powerful collaborative.

The UMRBA Board identified the following suite of actions to pursue in 2022-2024 to advance the stated goals mentioned previously:

- Strengthen cooperative action (overarching principle)
 - Elevate the perspectives of, and build relationships with, leaders from the diverse cultural, racial, and ethnic communities
 - Build understanding, mutual respect, and empathy among stakeholders and floodplain residents
 - Create and implement an ongoing community engagement plan
- Assess vulnerabilities from flood and drought events
 - Convene and resource an interstate task force to assess resilience to flood and drought events of floodplain communities, economies, and ecosystems, including by developing an assessment of relative risk
 - Estimate long term impacts on water uses and users of long duration low flow conditions
 - Partner with Culver-Stockton on a video of anecdotal stories of vulnerabilities experienced in the floodplain
- Improve knowledge of resilience and assumptions of associated risk
 - Develop a collective scientific understanding of tributary influences on floodplain and main stem dynamics
 - Advocate for federal resources, including renewed flow frequency profiles, Atlas-14, NIDIS, USGS NWGOS, HTF, UMRR/NESP, and UMRBA Interstate (CWA) Monitoring
 - Develop a flood prediction tool to guide planning and mitigation for a variety of organizations and individuals in the floodplain
- Advance long term, systemic navigation channel planning
 - Develop implementation assessments for three to five of the most impactful barriers to effective channel maintenance and management
 - Evaluate, and recommend, the use of existing and innovative tools for sediment placement and management
 - Advocate that the Corps undertake comprehensive, strategic channel maintenance planning in light of new conditions (recognizing the high flow conditions)

- Evaluate potential sediment-related modules to integrate into systemic HEC-RAS
 - Amplify the benefits of a reliable navigation channel, particularly the resulting economic benefits of channel management investments
- Facilitate greater utilization of beneficial reuse
- Employ a market analysis to determine the potential to increase the quantity of dredged material taken from placement sites
 - Assess the potential for increasing the quantity of dredged material utilized by existing public and private organizations
 - Explore issues and opportunities for expanding the utilization of dredged material to new user types
 - Identify efficiencies and process improvement opportunities with for state regulations and procedures
- Improve drought preparedness
- Implement scenario planning to model impacts and to identify water supply vulnerabilities in a multi-year and flash drought
 - Elevate best management practices and improve knowledge, learning from state and federal drought plans and resources
 - Integrate drought issues with the challenge of potential out-of-basin water diversions
 - Improve knowledge and create common vocabulary regarding drought management
 - Use HEC-RAS to model low flow dynamics

Jennifer Hoggatt observed that there is so much important work that needs to be done. Hoggatt underscored the value of the retreat for Board members to reflect and think collectively and strategically about the Association’s next steps knowing that we cannot work on everything at one time.

Missouri River Container-On-Barge Project

Cheryl Ball announced that, in January 2021, Missouri DOT partnered with AGRIServices of Brunswick in jointly submitting an application for container-on-barge project designation under the USDOT American Marine Highway Program. In July 2021, MARAD approved the project designation, which will provide container-on-barge services on the Missouri River to the Gulf of Mexico. This would provide a new transportation means for specialty crops and manufactured goods to reach international ports. Ball said this is an exciting opportunity. Missouri DOT anticipates that this service will help normalize container-on-barge shipping with more destinations added along the Missouri, Upper Mississippi, Illinois, and Lower Mississippi Rivers.

Ball said the joint partnership with a private entity is particularly promising and sets this initiative apart from previous attempts at establishing container-on-barge. Ball noted that there is a small, undedicated service that moves a few containers per week between St. Louis and the Gulf of Mexico. This proposal is a direct outgrowth of AGRIServices’ own marketing forecast based its expected business needs in working with its customers.

Ball reviewed information provided in the application in support of the proposal. Ball explained that a comparison of price and time is needed for shippers to consider using the waterways for shipping

containers versus rail or truck. Additionally, contingency plans are necessary due to reliability challenges for the Missouri River – e.g., flood events. A benefit from this particular service is the ability for AGRIServices to transport a container with a smaller amounts of different specialty products, meeting the needs of smaller countries and prospective buyers. The anticipated service is to transport five barges per week carrying 36 containers per barge, amounting to 180 containers per week just at AGRIServices. This is just below the threshold of 210 containers to establish a dedicated service. But, the containers can be shipped with bulk containers and be picked up or dropped off along the route. Other ports could eventually use this service to also ship containerized barges, potentially meeting the needs for the dedicated service. Ball mentioned that the announcement of this project designation has generated a lot of inquiries from companies importing and exporting along the Missouri River.

Ball said the service is scheduled to start in 2022, but may be a moving target given the national challenges associated with container shipping logistics. Ball said the project aligns with the five Upper Mississippi River states' conversations about establishing a container-on-barge service on the Upper Mississippi River System.

Illinois River Next Generation Water Observing System

Jim Duncker reported on an update to the Illinois River Basin Next Generation Water Observing System (NGWOS). NGWOS is an element of USGS's Integrated Water Sciences program, collecting real-time observations or measurements of various water parameters to inform research regarding water processes and improve predication capabilities. Simultaneously, USGS is modernizing its data delivery through its National Water Information System's National Water Dashboard. This will improve how data is shared with the public.

A related, follow-on program with separate funding, the Integrated Water Availability Assessments (IWAA) is scheduled to start in FY 2022 for the Illinois River Basin. The purpose of this effort is to comprehensively assess the water availability at regional and national level considering water quality and quantity from surface and groundwater sources as related to human and ecosystem needs and as affected by human and natural influences.

The Integrated Water Prediction (IWP) program develops large-scale modeling tools. Modelers will be listening to the conversations about data gaps and information needs to assess what types of predication capabilities will be important for water resources management going forward.

Duncker reminded that the Illinois River Basin project started in January 2021. Stakeholder engagement was a primary focus in this first year, understanding priority issues for the basin. Additionally, work in FY 2021 included cataloging existing data and information, identifying data and knowledge gaps (including a deeper statistical review), developing a basin-wide science plan, and equipment acquisition as well as limited field work. The planned work in FY 2022 includes collecting new data, assembling existing data, conducting new research, and advancing regional and national model development. Duncker confirmed that stakeholder engagement will remain a constant priority throughout the Illinois River Basin NGWOS development. Duncker reported on the stakeholder engagements in 2021.

Of note, Duncker reported that USGS NGWOS was able to utilize its resources to monitor the 2021 HAB at Starved Rock, Illinois. That involved using new instrumentation to compare discrete sampling with water quality conditions, mapping the spatial extent of the bloom with field crews, and using areal imagery to examine the bloom. Under the Illinois River Basin NGWOS, USGS installed five of eight supergages, selected two field sites to examine groundwater and surface water interaction, implemented synoptic

surveys in the Mackinaw and Vermillion Rivers to measure nutrients, and tested airborne electromagnetic survey in the Upper Fox River (in southeast Wisconsin) leveraging another project. USGS has also initiated planning to develop a sediment budget for the Illinois River, working with the Corps.

In response to a question from Tim Hall, Duncker explained that most sensors stay in the water year-round, including during ice cover conditions. The algae tracker is a smaller buoy that collects parameters important to HAB monitoring and transmits the data to the cloud. That sensor must be pulled during winter.

In response to a question from Lauren Salvato, Duncker said the Illinois River NGWOS is covering the expense of two supergages important to the Illinois River nutrient reduction strategy. These include the supergage at Florence and at the Metropolitan Reclamation District's gage in Joliet. Those are two critical points. Critical to NGWOS is information about nutrient loads coming from Chicago and the Illinois River Basin.

Kirsten Wallace asked Duncker if there is an update on USGS's plans to advance social equity through NGWOS in the project area. Duncker explained that USGS is considering an urban social component within the Illinois River NGWOS. Duncker said there is not much to report at this time outside of a desire to engage an underserved community at the west side of Chicago that frequently experiences non-riverine flooding.

Water Resources Development Act 2022

Kirsten Wallace noted that UMRBA is planning to advocate to Congress that WRDA 2022 include provisions to eliminate a significant impediment to public-private partnerships in advancing important water resource projects. Namely, the impediments involve liability requirements that conflict with state constitutions and tort law and that are challenging for nonprofit entities and local governments to assume. UMRBA has joined similar advocacy efforts by the Interstate Council on Water Policy (ICWP), and is planning to join as a signatory to its letters to Congress requesting PPA reform.

As discussed earlier in the meeting, UMRBA will be considering its support for full federal funding for the Brandon Road project, including the project's remaining design, construction, and perpetual OMRR&R. UMRBA will also consider a request or more general communication relating to developing a holistic two-way system for the prevention of inter-basin transition of aquatic nuisance species.

Wallace reported that UMRBA has tasked a small group to consider a provision requesting that the Corps undertake comprehensive, strategic channel maintenance planning in light of new and evolving hydrology, sedimentation, and other conditions.

Loren Wobig added that Illinois DNR has elevated the PPA-related reform needs within the context of its cost-share responsibilities on the Brandon Road ecosystem project. Wobig underscored the need for Congress to utilize WRDA 2022 to direct the Corps' liability arrangements within non-federal cost share agreements.

Wallace requested that UMRBA partners and stakeholders contact her with any WRDA 2022 provisions that they may be considering for the purposes of raising awareness of the UMRBA member states and/or requesting that UMRBA consider comments or a position.

Administrative Issues

Future Meeting Schedule

February 2022 — Location TBD

- UMRBA quarterly meeting — February 22
- UMRR Coordinating Committee quarterly meeting — February 23

May 2022 — Location TBD

- UMRBA quarterly meeting — May 24
- UMRR Coordinating Committee quarterly meeting — May 25

August 2022 — Location TBD

- UMRBA quarterly meeting — August 9
- UMRR Coordinating Committee quarterly meeting — August 10

With no further business, the meeting adjourned at 3:09 p.m.

ATTACHMENT B

Executive Director's Report

- **Executive Director's Report** *(B-1 to B-5)*
- **UMRBA Corps Near Term Funding and Policy Priorities Letter (12/9/2021)** *(B-6 to B-8)*
- **UMRBA Support of Full Funding for the Brandon Road Project Letter (12/15/2021)** *(B-9 to B-10)*
- **UMRBA Support of Corps PPA Reform in WRDA 2022 Letter (12/17/2021)** *(B-11 to B-13)*
- **ICWP Coalition Support of Corps PPA Reform in WRDA 2022 Letter (12/17/2021)** *(B-24 to B-15)*
- **UMRBA MRRRI Legislation Letter (1/7/2022)** *(B-16 to B-17)*
- **NWF Comparison of Barge, Rail, and Trucks as Freight Transportation Modes (2/2022)** *(B-18 to B-22)*
- **Treasurer's Quarterly Statement (2/8/2022)** *(B-23)*
- **FY 2022 Budget Report and Balance Sheet (2/7/2022)** *(B-24 to B-26)*



Executive Director's Report February 2022

UMRBA PERSONNEL

Margie Daniels is scheduled to retire on April 22, 2022, having served as Administrative Assistant since its inception in 1981. Daniels was also staff for the UMRBA's predecessor, the Upper Mississippi River Basin Commission since 1976. A celebration is being planned in her honor.

UMRBA is hiring an Operations Manager and will distribute an announcement when the position is filled.

ADVOCACY

USACE Funding and Policy Priorities in 2022

On December 9, 2021, UMRBA sent a letter to ASA(CW) Michael Connor outlining its near term funding and policy priorities, including through the appropriations process and as authorized in the Infrastructure Investment and Jobs Act. The priorities relate to investing in the Navigation and Ecosystem Sustainability Program (NESP), Upper Mississippi River Restoration (UMRR) program, reforming project partnership agreements, and renewing flow frequency profiles as well as maintaining the federal-state cooperation and relationships in advancing multi-purpose management. The letter is provided on pages B-6 to B-8 of the agenda packet.

Brandon Road

UMRBA submitted a letter to the Senate Environment and Public Works Committee on December 15, 2021 supporting full federal funding for the Brandon Road project. This letter was provided to the Committee as it develops a draft WRDA 2022. The request for full federal funding includes remaining design, construction, and perpetual OMRR&R. In the letter, UMRBA expressed its view that the proposed Brandon Road project to be a significant step towards developing a holistic two-way system. The letter is provided on pages B-9 to B-10 of the agenda packet.

Project Partnership Agreements

On December 17, 2021, UMRBA sent a letter to the Senate Environment and Public Works Committee and House Transportation and Infrastructure Committee respectfully requesting to reform the U.S. Army Corps of Engineers' project partnership agreements (PPAs) in a potential WRDA 2022. This action is necessary to eliminate a significant impediment to public-private partnerships in advancing important water resource projects. Namely, the impediments involve liability requirements that conflict with state constitutions and tort law and that are challenging for nonprofit entities and local governments to assume. This letter is provided on pages B-11 to B-13 of the agenda packet.

UMRBA joined a multi-signatory letter organized by the Interstate Council on Water Policy (ICWP) with signatories by Association of Fish and Wildlife Agencies, Atlanta Regional Commission, Bayou Metro Water Management District, Delaware River Basin Commission, Great Lakes Commission, Interstate Commission on the Potomac River Basin, National Association of Flood and Stormwater Management Agencies, Susquehanna River Basin Commission, and The Nature Conservancy. The letter is dated

December 17, 2021 and is provided on pages B-14 to B-15 of the agenda packet. A similar letter is being prepared to be sent to the House Transportation and Infrastructure Committee.

Mississippi River Restoration and Resilience Initiative

In response to a question, UMRBA sent a January 7, 2022 letter to Rep. Betty McCollum clarifying that its member states have not taken a joint position on the Mississippi River Restoration and Resilience Initiative (MRRRI) legislation (H.R. 4202) through the Association. The letter is provided on pages B-16 to B-17 of the agenda packet.

ECOSYSTEM HEALTH

Upper Mississippi River Restoration

2022 Report to Congress

On November 17, 2021, the UMRR Coordinating Committee and contributors to the 2022 UMRR Report to Congress met virtually to determine issue statements for the series of issue assessments being considered for evaluation. Following the drafting process, the Committee may integrate the issue findings, conclusions, and recommendations into the 2022 UMRR Report to Congress. On November 29, 2021, the UMRR Coordinating Committee and contributors to the 2022 UMRR Report to Congress met virtually to discuss the drafting process and status and the implementation issue assessments.

On January 24, 2022, a draft report was provided to the UMRR Coordinating Committee for initial review. On February 4, 2022, the UMRR Coordinating Committee participated in an in-progress review with Corps Headquarters regarding the status and anticipated schedule for completing the 2022 UMRR Report to Congress. UMRBA's involvement in the report development is provided through a support services contract specific to the 2022 Report to Congress.

LTRM-Related Meetings

On December 2 and 7, 2021, UMESC hosted a series of three- to five-minute presentations showcasing UMRR's state of science in a number of UMRR-supported research initiatives. The purpose is to showcase the diversity of ongoing research projects, describe why the results matter, and who to contact for more information about specific projects. UMRBA staff attended these meetings.

UMRBA staff are helping to scope an upcoming UMRR LTRM planning process. The purpose being to define science goals and opportunities with existing funding as well as under the increased annual authorized appropriations levels. This has involved conference calls with LTRM program leaders, and the UMRR Coordinating Committee members, and two facilitators

UMRBA staff participated in the biennial UMRR Science Meeting on February 8-11, 2022. The meeting is focused on building out priorities for future scientific investigation through UMRR under a suite of focal areas such as water quality and macroinvertebrates.

Basin Monitoring and Evaluation Initiatives

UMRBA continues to participate in The Nature Conservancy's Mississippi River Basin Monitoring Design Workshops which were convened over a series of meetings. The purpose is to establish a consistent and integrated monitoring system in the Mississippi River Basin.

ECOSYSTEM AND WATER QUALITY COMMUNICATIONS

UMRBA staff are facilitating communications planning associated with the publication of the third decadal UMRR long term resource monitoring status and trends report and the UMRBA How Clean is the River? Report. Both reports are in the final stages of publication. The program partners are considering target audiences, including what we want them to do and what we want them to know in terms of the status and trends findings. On December 1, 2021, UMRBA provided a briefing of the nutrient-related results in the two reports to the Agriculture Nutrient Policy Council. The UMRR nutrient-related information was presented to the Hypoxia Task Force at its December 14, 2021 public meeting.

The UMRR Communications and Outreach Team continues to meet on a regular, monthly basis. On its December 1 call, the team previewed a new video providing an oral history of UMRR's origins from various implementing agency partners and members of the public. The team discussed the coordinated rollout being planned associated with the publication of the 2022 UMRR LTRM status and trends report. The team also spent considerable time evaluating its future goals and priorities and what each member can offer to advancing them.

On February 2, 2022, UMRBA staff presented a coordinated press release strategy for the UMRR LTRM status and trends report to the UMRR Communications and Outreach Team. This report is a significant accomplishment for UMRR and provides a broadly accessible and concise description of what we have learned about changes in the UMRS from nearly three decades of monitoring and analysis.

NAVIGATION

National Waterways Foundation

As a Trustee, Kirsten Wallace participated in the National Waterways Foundation's February 16, 2022 meeting. The agenda focused on fundraising efforts as well as recently completed studies and priorities for future engagements and research. The Foundation published the results of a recently completed study done by the Texas Transportation Institute's Center for Ports and Waterways comparing barge, rail, and trucks as freight transportation modes. Graphics of the results are provided on pages B-18 to B-22 of the agenda packet.

Beneficial Use

The St. Paul and Rock Island Districts' Beneficial Use Work Groups hosted a December 16, 2021 informational session to provide information about the Corps' programs related to beneficial use of dredged material and consider ways to leverage capacity of the Corps' Engineer Research and Development Center (ERDC). UMRBA staff attended the meeting and shared information on UMRBA's planned efforts to assist with a marketing plan for the purposes of increasing the beneficial use of dredged material.

RESILIENCE PLANNING

Missouri Water Protection Forum

On February 17, 2022, UMRBA staff provided a briefing on UMRBA's Keys to the River Report and resilience planning priorities for 2022-2024.

National Climate Assessment Midwest Chapter Engagement Workshop

UMRBA staff participated in the January 24, 2022 National Climate Assessment Midwest Chapter Engagement Workshop hosted by the U.S. Global Change Research Program. The purposes of the workshop were to provide an overview of the effort including opportunities for public engagement as well as to facilitate interactive conversations about the key topics, priority issues, resources, and application to decision-making.

HAZARDOUS SPILLS COORDINATION, MAPPING, AND PLANNING

Oil Pollution Act (OPA) Planning and Mapping

UMRBA staff have completed most layers for the Wisconsin statewide ISA update, including aboveground oil storage facilities, pipelines, boat accesses, and non-navigational dams. Staff have also incorporated these layers and updates from the Great Lakes Commission for Michigan hazardous materials facilities and pipelines into the regional geodatabase. The geodatabase was delivered to USEPA Region 5 on February 4, 2022. UMRBA staff are now working to update Minnesota layers, namely for managed lands, navigational locks and dams, water infrastructure, and other environmentally sensitive areas.

In addition, UMRBA staff supported Regional Response Team planning calls on December 2 and 13, 2021 and participated in Mapping Group meetings on December 9, 2021 and February 7, 2022.

Upper Mississippi River Hazardous Spills Coordination Group (UMR Spills Group)

The UMR Spills Group's semi-annual meeting was held virtually on November 30, 2021. The UMR Spills Group finalized its 2022-2026 Strategic Plan draft at the meeting. The Spills Group will seek review from the broader stakeholder community next. The group has begun updating the UMR Spills Response Plan and Resource Manual to work toward the first goal set in the strategic plan. Members have been assigned sections to review and update, aiming to complete the process at the Spills Group's pending April 2022 meeting.

WATER QUALITY

WQTF Meeting

The UMRBA WQTF met on January 25-26, 2022 virtually. The meeting included presentations on emerging contaminants, ecological risk assessments, chloride, and citizen monitoring initiatives. Additionally, the UMRBA WQTF members provided updates to their respective state CWA 303(d) and 305(b) assessments as well as nutrient reduction-related work.

Hypoxia Task Force

The Hypoxia Task Force held a series of meetings on December 13-14, 2021. UMRBA staff attended the meeting and presented jointly with USGS-UMESC on the UMRR's recent status and trends analysis of its long term resource monitoring. Other focal topics for the Hypoxia Task Force included new federal initiatives and funding that can help support state nutrient reduction strategies (e.g., America the Beautiful Initiative), ongoing activities of the Hypoxia Task Force Coordinating Committee, member states' progress in advancing their respective nutrient reduction strategies as well as ongoing supporting federal actions, and trends analyses of key basin metrics. Additionally, the Hypoxia Task Force heard public comments from individuals and entities.

UMRBA is helping to convene the HTF Coordinating Committee member states, facilitating information sharing as they develop their respective work plans for utilizing the appropriations provided in the Infrastructure Investment and Jobs Act (IIJA).

FEWscapes

The University of Wisconsin-Madison is convening a series of workshops, under the project name FEWscapes, for the purposes of identifying science-informed and implementable options for managing our landscapes in ways that increase the security and resilience of food, energy, water, and natural systems in the Upper Mississippi River Basin. The goal for the initiative is to set a vision for what food, energy, water, and ecosystem (FEWE) security will look like by 2050 in the Upper Mississippi River Basin and then to generate a set of potential qualitative goals and quantitative targets that could become focal points for the scenarios. UMRBA staff participated in a December 21, 2021 workshop, which focused on developing quantifiable goals for food, energy, water, and ecosystem security in the Upper Mississippi River Basin by 2050. In other words, workshop participants were asked what should these systems look like in 2050 to support farms and communities, water and energy needs, and biodiversity.

USEPA Region 5 WQ Managers Meeting

UMRBA staff participated virtually in the USEPA Region 5 Water Quality Managers Meeting December 1-2, 2021. Some of the discussion topics included 2021 monitoring progress success, 2022 planned priorities, 2020 monitoring initiative proposals, hot topics, and budget and staffing issues. UMRBA staff discussed UMRBA's water quality efforts undertaken in 2021, including related to the UMRB chloride resolution, Reaches 8-9 pilot, WQEC strategic planning, How Clean is the River? Report trend results, and the April 2021 nutrient reduction strategy progress tracking workshops.

USEPA Region 5 WQ Managers Meeting

On January 6-7, 2022, the National Institutes for Water Resources and the North Central Region Water Network jointly hosted their second harmful algal bloom (HAB) symposium. UMRBA staff participated virtually. The meeting agenda included presentations on HAB monitoring and ecology, cyanotoxin treatment and detection, HAB forecasting and modeling, and emerging technologies for detection and monitoring.

FINANCIAL REPORT

Attached as page B-23 is UMRBA Treasurer Jason Tidemann's statement regarding his review of UMRBA's financial statement for the period of November 1, 2021 to February 1, 2022.

Attached as pages B-24 to B-26 are UMRBA's FY 2022 budget report and balance sheet. As of February 7, 2022, ordinary income for FY 2022 totaled \$533,473 and expenses totaled \$434,211 for net ordinary income of \$99,262. As of this date, UMRBA's cash assets totaled \$953,293.



December 9, 2021

Mr. Michael Connor
Assistant Secretary to the Army (Civil Works)
108 Army Pentagon
Room 3E446
Washington, D.C. 20310-0108

Dear Secretary Connor:

On behalf of the Upper Mississippi River Basin Association (UMRBA), I am writing to offer our congratulations on your confirmation as the Assistant Secretary of the Army for Civil Works and offer ourselves as a partner in advancing our shared priorities for the Upper Mississippi River System. UMRBA is the Governor-established forum for interstate water resource planning and management on the Upper Mississippi River System, representing its member states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin. Through their steady, 40-year commitment to UMRBA, the states work diligently with our 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.

As you evaluate the U.S. Army Corps of Engineers' spending priorities through the appropriations process and as authorized in the Infrastructure Investment and Jobs Act, we would like to convey the importance of the Upper Mississippi River System (Upper Mississippi) and to respectfully request that substantial investment is directed towards improving its natural and structural infrastructure.

UMRBA's priorities include responding to modern shipping needs, fulfilling habitat needs for fish and wildlife and restoring the river's ecological health, developing sound solutions to more extreme high- and low-water conditions, and ensuring that clean water is available to communities for drinking water as well as industrial and agricultural uses. Building upon the Upper Mississippi River's deeply rooted partnership and successes in effective multi-purpose management, UMRBA's funding and policy priorities are to:

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- Start construction of the **Navigation and Ecosystem Sustainability Program (NESP)**
- Invest in the **Upper Mississippi River Restoration (UMRR)** program at its full authorized annual appropriation
- Reform the U.S. Army Corps of Engineers’ **project partnership agreements** to eliminate a significant impediment to public-private partnerships in advancing important water resource projects
- Renew **flow frequency profiles** on the Upper Mississippi River to inform the development of systemic approaches to improve resilience to major floods
- Maintain the deeply rooted **federal-state cooperation and relationships** in advancing multi-purpose management
- Fully engage and support UMRBA-led long term planning related to **integrated and balanced Upper Mississippi River and watershed management**

The Upper Mississippi River is a large, complex, and dynamic system that serves as a nationally significant economic, environmental, and social resource – generating revenues in excess of \$584 billion annually and supporting over 1.86 million jobs in manufacturing, agriculture, tourism, recreation, navigation, and energy sectors. The river also provides an irreplaceable water supply source for citizens and industries throughout the Midwest. The system of locks and dams provides for the movement of low-cost goods that are essential to a strong national economy: agricultural commodities and inputs, energy products, gravel, and salt. At the same time, the Upper Mississippi supports a \$55 billion tourism and recreation industry built upon the serenity and adventure of the river’s landscape and abundant opportunities for fishing and hunting.

The river is heavily influenced by human activity throughout its watershed, requiring balanced, integrated, and collaborative management that exceeds the capacity and authority of any one entity. We believe the challenges associated with increasing precipitation in the Midwest along with intensified land use and the spread of invasive species will require even stronger connections among the state and federal agencies with river-related responsibilities. The complex nature of the river system and array of human uses requires thoughtful and inclusive dialogue among the diverse suite of stakeholder representatives throughout the region.

We strongly value our mutual commitment with the U.S. Army Corps of Engineers to advance Congress’ vision of the river as a “nationally significant ecosystem and a nationally significant navigation system.” And, we recognize that much work remains especially as stressors continue to degrade the river’s rich and diverse ecosystem and the navigation channel’s efficiency and sustainability.

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December 9, 2021

UMRBA's member states are eager to work with you and your Administration. UMRBA's Executive Director Kirsten Wallace will contact your office to request an opportunity to discuss our recommendations in more detail.

Sincerely,

A handwritten signature in black ink that reads "Dru Buntin". The signature is written in a cursive, slightly stylized font.

Dru Buntin, Chair

Upper Mississippi River Basin Association

cc: Shalanda D. Young, Director of Office of Management and Budget
Maj. Gen. Diana Holland, MVD Commander



December 15, 2021

The Honorable Thomas Carper, Chair
The Honorable Shelley Moore Capito, Ranking Member
Senate Environment and Public Works Committee
410 Dirksen Senate Office Building
Washington, D.C. 20510

RE: Brandon Road Project – Full Federal Funding Request

Dear Senators Carper and Capito:

On behalf of the Upper Mississippi River Basin Association (UMRBA), I am writing to express our member states' support for the eight Great Lakes states' request that the U.S. Congress authorize the Great Lakes and Mississippi River Interbasin Project, Brandon Road, including both structural and non-structural components, at full federal expense for construction, remaining design, and perpetual operations, maintenance, repair, rehabilitation, and replacement in the Water Resources Development Act (WRDA) 2022. Such actions would be consistent with other large-scale projects that have a strong bearing on the regional and U.S. economy. Utilizing federal funds to cover the remaining 20 percent of non-federal project costs will create a higher level of funding certainty and stability for this important project.

Formed in 1981 by the Governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin, UMRBA represents its member states' common water resource interests and works collaboratively with both state and federal agencies that have management responsibilities on the Upper Mississippi River System.

The existing and potential impacts of aquatic nuisance species on the Upper Mississippi River System are substantial, affecting a broad range of river resources and uses, including native biota, water quality, commercial navigation, and recreational boating. The Upper Mississippi River Restoration program's long term resource monitoring has shown that the establishment of invasive carp has resulted in substantial declines of native fish species and altered the riverine ecosystem. The introduction and establishment of invasive carp to the Great Lakes system could have similar disrupting effects on its natural ecosystem.

UMRBA asserts that the most effective means of controlling the impacts of aquatic nuisance species is by prevention. The potential for movement of aquatic nuisance species from the Great Lakes to the Mississippi River Basin also needs to be prevented. UMRBA views the proposed Brandon Road proposal to be a significant step towards developing a holistic two-way system.

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December 15, 2021

Importantly, UMRBA believes that the Brandon Road project will inform invasive fish movement deterrents, benefiting other states and regions. Research and control actions implemented and tested at the Brandon Road site will be relevant for efforts in other parts of the country, including the Mississippi River basin.

Thank you for your consideration of this important request. Please contact me with any questions at kwallace@umrba.org.

Sincerely,

A handwritten signature in blue ink that reads "K. Wallace". The signature is fluid and cursive, with a large loop for the letter 'K' and a stylized 'W'.

Kirsten Wallace
UMRBA Executive Director

cc: Rob Portman (Co-Chair) (R-OH) Great Lakes Task Force
Debbie Stabenow (Co-Chair) (D-MI) Great Lakes Task Force
Upper Mississippi River Delegation Members



December 17, 2021

The Honorable Tom Carper
The Honorable Shelley Moore Capito
U.S. Senate
Committee on Environment and Public Works
410 Dirksen Senate Office Building
Washington, D.C. 20510

The Honorable Peter DeFazio
The Honorable Sam Graves
U.S. House of Representatives
Committee on Transportation and Infrastructure
2165 Rayburn House Office Building
Washington, D.C. 20515-6256

Dear Senators Carper and Moore Capito and Representatives DeFazio and Graves:

As Congress develops its priorities for the Water Resources Development Act (WRDA) of 2022, I am writing to respectfully request the inclusion of a provision to reform the U.S. Army Corps of Engineers' (Corps') project partnership agreements (PPAs). UMRBA is the Governor-established forum for interstate water resource planning and management on the Upper Mississippi River System, representing its member states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin. Formed in 1981, UMRBA represents its member states' common water resource interests and works collaboratively with Upper Mississippi federal and state agencies as well as other non-federal partners. In advancing our shared commitment to multi-use management, the states and Corps work collaboratively to develop solutions through sound water resource projects. In addition, local communities and nonprofit organizations also serve as key partners in sponsoring water resource solutions constructed by the Corps. However, implementing the solutions that involve the states or other non-federal entities serving as cost-share sponsors is impeded, or is dramatically slowed, by the terms required in the cost-share project partnership agreements (PPAs).

The key impediments include the terms requiring the non-federal sponsor to assume complete liability for constructed projects (except for when fault or negligence is proven) and operations, maintenance, repair, replacement, and rehabilitation (OMRR&R) in perpetuity. These terms are simply not reasonable and are not acceptable to many states, local communities, and nonprofit organizations. At a fundamental level, the current PPA terms conflict with many states' constitutions and tort law.

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The issues of greatest interest to UMRBA are:

- 1) *Indemnification* – The Corps requires that non-federal sponsors indemnify the federal government for all damages except for fault or negligence. Indemnifying a third party (including the federal government) is in direct conflict with many states’ constitutions and laws. It requires the non-federal party to promise financial resources for an indeterminate liability that might occur at an unknown time, at an unknown cost, and for an unknown reason. Many state constitutions preclude agencies from obligating funds without an encumbrance against an appropriation and do not allow for incurring any indebtedness of any nature on behalf of the state until an appropriation for it has been made by the legislature. In addition, indemnification requires a state to assume liability beyond the extent to which many states’ tort law permits. Non-federal sponsors are required to execute the PPAs with the liability clause early in the planning stage and before the designs are complete. The Corps takes full control of the land, design of the project, and agreements with the construction contractors. The Corps is also the only point-of-contact to the construction contractors. This results in a completely one-sided approach to project design, implementation, and assumption of risk that favors the federal government.

Requested solution:

Modify the hold and save clause to a more equitable, shared approach to liability that does not extend beyond the liabilities that already exist under applicable constitutions and laws.

- 2) *Operations, Maintenance, Repair, Replacement, and Rehabilitation* – The current PPAs legally obligate non-federal sponsors to undefined and unbounded operations, maintenance, repair, replacement, and rehabilitation (OMRR&R) obligations for the water resource project. Essentially, this requires maintaining the project features as prescribed in O&M manuals forever. That is unreasonable, particularly in dynamic coastal and riverine systems. Historically, the Corps required OMRR&R obligations for 50 years to match the expected life of a constructed project. The Corps changed this policy in 2012 and now requires non-federal sponsors to perform OMRR&R obligations in perpetuity. This shift has resulted in the loss of interested cost share partners at a time when the federal government is promoting its partnerships with the states and private entities.

The 2016 Water Infrastructure Improvements for the Nation (WIIN) Act attempted to bring some resolution to non-federal OMRR&R obligations. Section 1161 caps non-federal sponsors’ OMRR&R obligations to 10 years following USACE’s determination that the project’s physical features are functioning as intended.

The decision process is integrated into existing adaptive management evaluations for individual projects. However, the non-federal sponsor remains dependent on the Corps as to when its O&M obligations are complete. It also does not provide the specificity needed for sponsors to estimate total project costs.

Requested solution:

Restore the 50-year cap on non-federal sponsors' legal requirement to perform OMRR&R requirements or provide a defined end-term that is based on the expected useful life of the project's construction features.

Thank you for your consideration of this request. Please do not hesitate to contact me at 651-224-2880 or kwallace@umrba.org if you have questions or would like to discuss UMRBA's position in further detail.

Sincerely,

A handwritten signature in blue ink, appearing to read "K. Wallace", is positioned above the typed name.

Kirsten Wallace
Executive Director
Upper Mississippi River Basin Association

cc: Upper Mississippi River Delegation

Coalition Supporting Needed Changes to USACE Contracting for Project Partnership Agreements

December 17, 2021

United States Senate
Committee on Environment and Public Works
The Honorable Tom Carper, Chair
The Honorable Shelley Moore Capito, Ranking Member
Washington, D.C.

Dear Chairman Carper and Ranking Member Capito:

The undersigned states and organizations have been trying for years to rectify two troublesome aspects of the contracts for non-federal partners associated with USACE Project Partnership Agreements (PPAs). The Interstate Council on Water Policy and others wrote to the committee as WRDA 2020 was being developed and we once again bring your attention to additional language needed to improve the ability of non-federal partners to be active equals on Corps-partnered projects. In recent years, the Corps has redefined its PPAs, creating major challenges for nonfederal sponsors in executing those agreements that may preclude states and other potential non-federal sponsors from partnering with the Corps on critical water resource projects.

The Corps PPA does not outline a true partnership. Rather, it is a one-sided agreement in favor of the Corps that overburdens the sponsor in terms of liability and limits the influence of the non-federal sponsor on decisions. The non-federal sponsor typically has minimal input into the project design and implementation and yet is held responsible for 35 percent of any cost overruns, regardless of whom or what is responsible for those overruns.

Indemnification

Currently, the Corps requires that the non-federal cost share sponsor fully indemnify the federal government, based on Section 103(j)(1) and Section 101(j) of the 1986 Water Resources Development Act. Indemnifying the federal government is in direct conflict with states' constitution and laws. The Corps requires the non-federal sponsor to promise financial resources for an indeterminate liability that might occur at an unknown time, at an unknown cost, and for an unknown reason. This liability is beyond the extent permitted by the tort law of many states. Non-federal sponsors are required to execute the PPAs, with the liability clause, early in the planning stage and before the designs are complete. The Corps then takes full control of the land, design of the project, and agreements with the construction contractors. The Corps is also the only point-of-contact to the construction contractors. This results in a completely one-sided approach to project design, implementation, and assumption of risk that favors the federal government. This one-sidedness needs to be rectified in WRDA2022.

Operations, Maintenance, Repair, Rehabilitation, and Replacement

Historically, the Corps limited the non-federal sponsors' operations, maintenance, repair, rehabilitation, and replacement (OMRR&R) obligations to 50 years, which is the expected life of a constructed project. In 2012, the Corps changed its policy that requires non-federal sponsors to maintain responsibility for OMRR&R obligations in perpetuity. By doing this, the burden is

placed on the non-federal sponsor to do major reconstruction or replacement with no financial support from the Corps at the end of the project's life. This shift has resulted in the loss of cost share partners at a time when the federal government is promoting its partnerships with the states and private entities.

The Corps' existing OMRR&R approach is currently undefined and unworkable for sponsoring entities. Provisions are needed requiring the PPA OMRR&R obligation to align with the expected life of the project.

If we can provide additional specific language to rectify these shortcomings as WRDA 2022 is developed, please don't hesitate to contact Sue Lowry, Executive Director of the Interstate Council on Water Policy (sue@icwp.org) or any of the other signatory organizations.

Partner Signatories:

Association of Fish and Wildlife Agencies
Atlanta Regional Commission
Bayou Meto Water Management District
Delaware River Basin Commission
Great Lakes Commission
Interstate Commission on the Potomac River Basin
Interstate Council on Water Policy
National Association of Flood and Stormwater Management Agencies
Susquehanna River Basin Commission
The Nature Conservancy
Upper Mississippi River Basin Association



January 7, 2022

The Honorable Betty McCollum
U.S. House of Representatives
2256 Rayburn House Office Building
Washington, D.C. 20515

Dear Representative McCollum:

On behalf of the Upper Mississippi River Basin Association (UMRBA), I am writing to address an apparent misunderstanding regarding our five member states' perspectives on the Mississippi River Restoration and Resilience Initiative (MRRRI) legislation (H.R. 4202). We greatly appreciate your leadership over many years on issues affecting the Upper Mississippi River System, and wish to clarify that the UMRBA's member states have not taken a joint position on H.R. 4202 through the Association. Any questions we have asked have been in a genuine effort to better understand the bill and how it would relate to the complex, multi-jurisdictional framework of existing authorities, policies, and programs affecting the Mississippi River and its watershed.

Since 1981, UMRBA has represented the five states' common interests across a wide range of water resource-related issues. One common theme has marked the states' approach to all issues — i.e., a commitment to collaborative, integrated management of the Upper Mississippi River System for its multiple purposes. This has not always been easy to achieve, but has proven central to effective river management. The complex nature of the Mississippi River and its broad array of human uses requires thoughtful and inclusive dialogue among the river's diverse stakeholders.

H.R. 4202, modeled on the very successful Great Lakes Restoration Initiative, includes many elements that align with the UMRBA states' priorities. We do have some specific questions based on our own states' experiences, such as how the Mississippi River National Program Office would function and relate to the extensive and ongoing federal and state investment into the Upper Mississippi River System. More broadly, we are seeking to understand and consider the perspectives of key river stakeholders prior to contemplating any joint state position on the bill through the UMRBA.

7831 East Bush Lake Road, Ste 302
Bloomington, MN 55439
651-224-2880
www.umrba.org

Page 2
January 7, 2022

I hope this letter addresses any misunderstanding regarding UMRBA's perspectives on H.R. 4202. We would welcome further conversation with your office as we seek to understand stakeholder perspectives and explore operational considerations related to MRRRI.

Again, we want to express our sincere gratitude for your dedicated support for multi-purpose, integrated management the Upper Mississippi River System. We look forward to continuing our collaborative partnership.

Sincerely,

A handwritten signature in black ink that reads "Dru Buntin". The signature is written in a cursive, flowing style.

Dru Buntin, Chair
Upper Mississippi River Basin Association

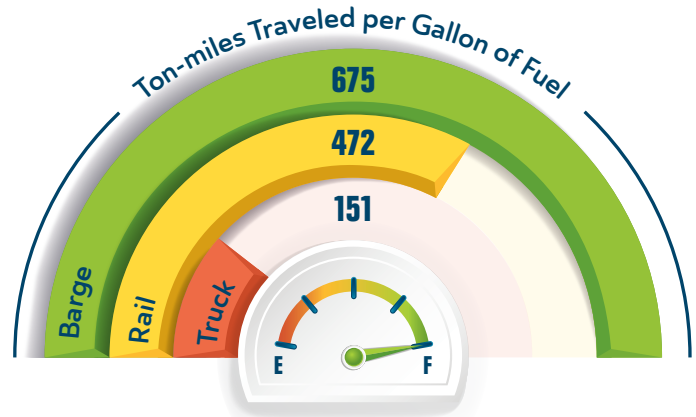
Fuel Efficient and Reliable

America's inland waterways directly connect 28 states and benefit all 50 states by moving freight the entire country relies upon, all at the lowest cost and with the least fuel consumption.

Barges: Most Fuel Efficient

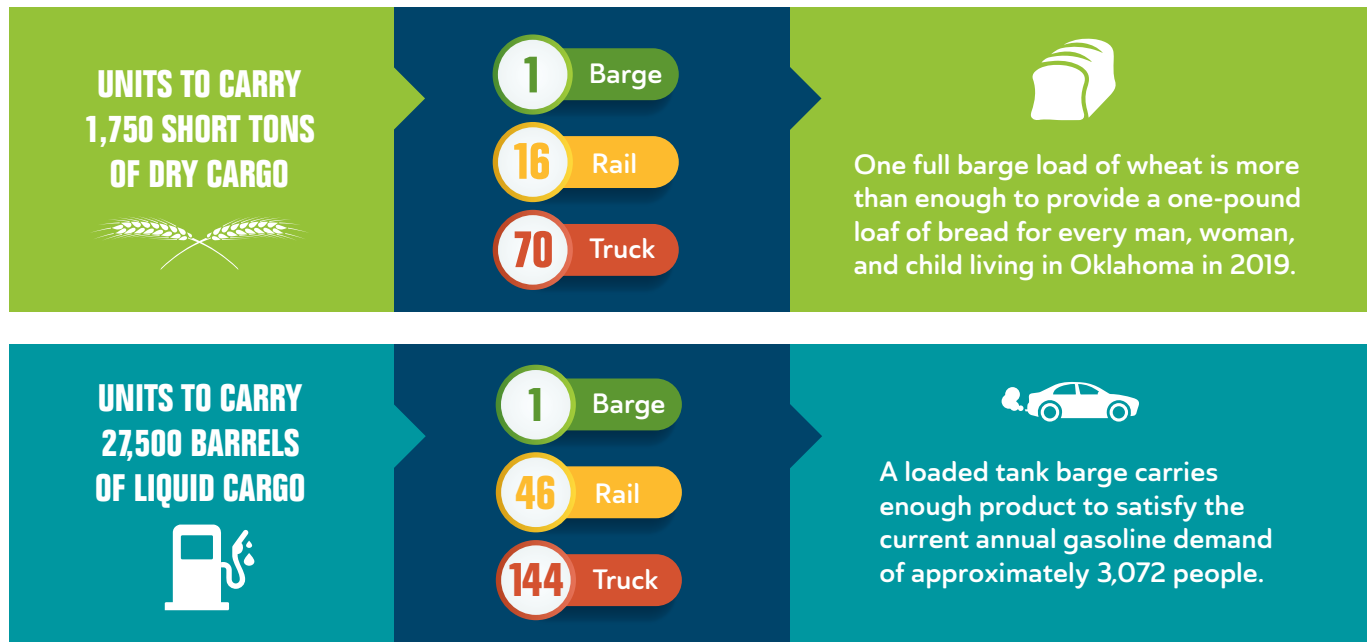
Barges move cargo 675 ton-miles per gallon of fuel. Ton miles per gallon are the measure of how far each ton of cargo is carried by a single gallon of fuel.

- A rail car is 30% less efficient than a barge
- A truck is 78% less efficient than a barge



Barges Provide Superior Cargo Capacity

A typical barge transports significantly more cargo than a single truck or rail car.



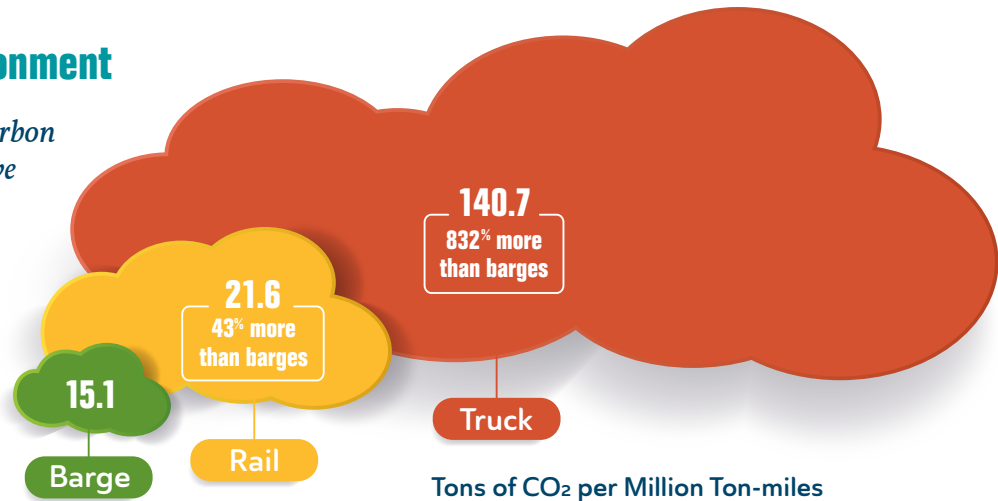
Lowest Carbon Footprint - Least Community Impact

Moving cargo on the inland waterways is the best bet for reducing carbon footprint because barges generate far fewer emissions than trucks or rail. Barge transport also results in fewer spills, which are more than double by truck and nearly three times by rail.

Better For the Environment

Barges have the smallest carbon footprint among competitive transportation modes.

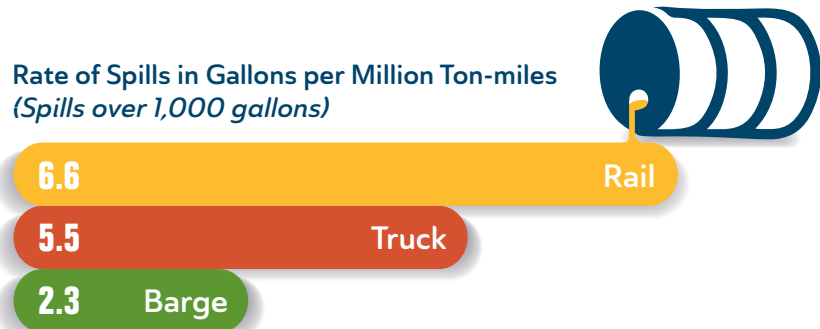
To move an identical amount of cargo by rail generates 43% more carbon dioxide than by barge, and trucks generate over 800% more emissions.



Protecting Our Communities

Inland waterways transport moves hazardous materials more safely.

All transport modes continuously work hard to prevent accidents, human errors, and other causes of spills. Statistics for 2001-2019 show trucks have 239% and rail cars have 287% more incidents than barges.



Inland Waterways Move America

Our inland waterways system moves goods more safely and efficiently than rail or highway. It is a key component of the transportation network and essential to our country's economic strength.

Reducing Traffic Congestion and Lowering Transportation Costs

The inland waterways system includes approximately 12,000 miles of commercially navigable channels and 192 lock sites with 237 chambers that serve navigation. America's "inland marine highways" move commerce to and from 28 states throughout the nation's heartland and Pacific Northwest, serve industrial and agricultural centers, and facilitate imports and exports at gateway ports on the Gulf Coast.

Our waterways ease congestion on roads and rails, carrying critical commodities by barge.

Without inland waterways transportation the nation would see:

- ✓ Increase in truck and rail traffic
- ✓ Skyrocketing transportation costs
- ✓ More air pollution

138% INCREASE
in trucks
on highways

146% INCREASE
in rail traffic
for grain alone

The inland waterways move large cargoes like wind turbine blades shown here. Photo courtesy of Marquette Transportation Co., LLC



Highlights of "A Modal Comparison of Domestic Freight Transportation Effects on the General Public: 2001-2019" | October 2021

A study by the Texas Transportation Institute, Center for Ports and Waterways

nationalwaterwaysfoundation.org

B-20

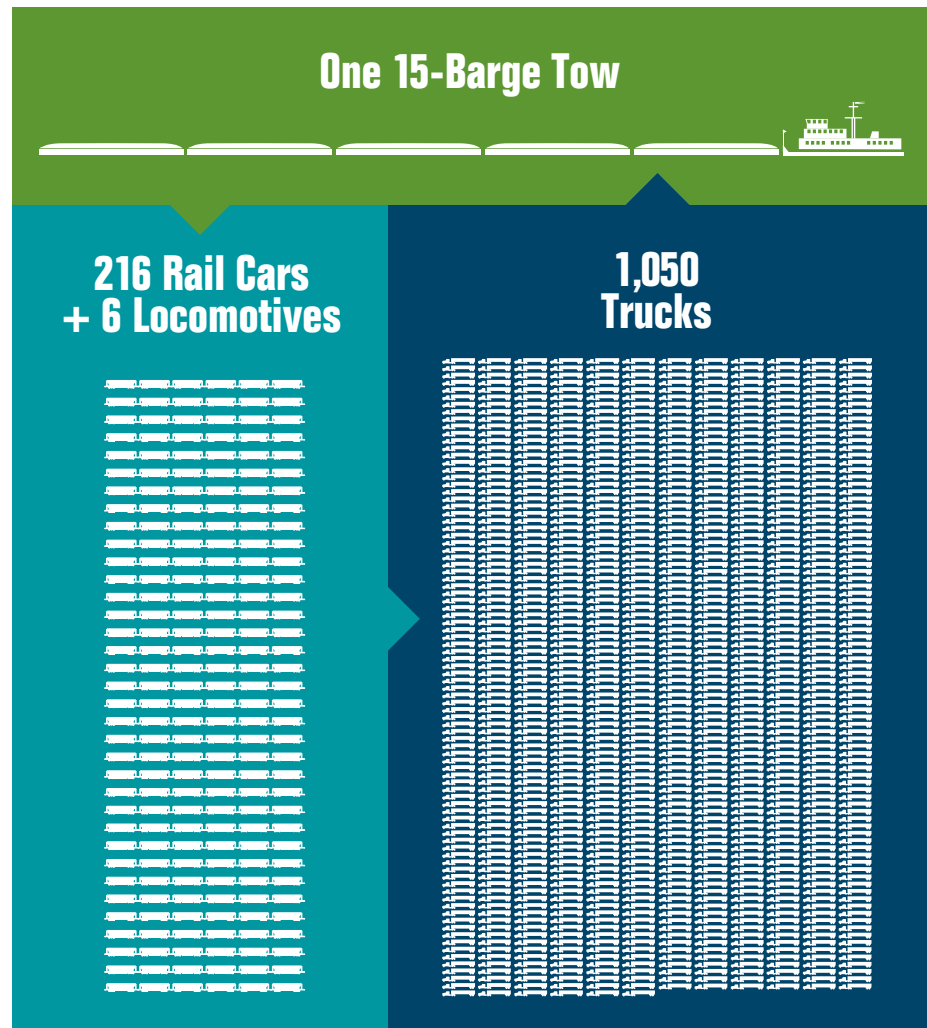
502 Million Tons of Freight Worth More Than \$134.1 Billion

Our inland waterways move more than half a billion tons (2019), saving \$7-9 billion in transportation costs to the nation compared to truck or rail.

Carrying Capacity of Barges Far Outpaces Rail & Trucks

Waterways transport more than 60% of the nation's grain exports, about 22% of domestic petroleum and petroleum products, and 20% of the coal used in electricity generation. Barges are ideal for hauling bulk commodities and moving oversized or overweight equipment.

- Grain
- Petroleum
- Project Cargoes
- Iron & Steel
- Intermodal Containers
- Chemicals
- Coal
- Aggregates



The Safest Mode for Communities

From reducing air pollution to lowering the number of transportation-related injuries and fatalities, inland waterways transport helps to protect people and their environment.

Safety First

Inland waterways transport has the lowest injury and fatality rates compared to rail or truck.

Safety related statistics for all modes of freight transportation between 2001-2019 show 1 injury in the inland marine sector for every 95.9 in the rail sector and 1,144.6 in the highway sector.

1 fatality in the inland marine sector for every 25.9 in the rail sector and 120.1 in the highway sector.

Inland Waterways Transport has the **Lowest Injury** Record Compared to Rail or Truck



1

For Every Barge Injury, There Are -

96

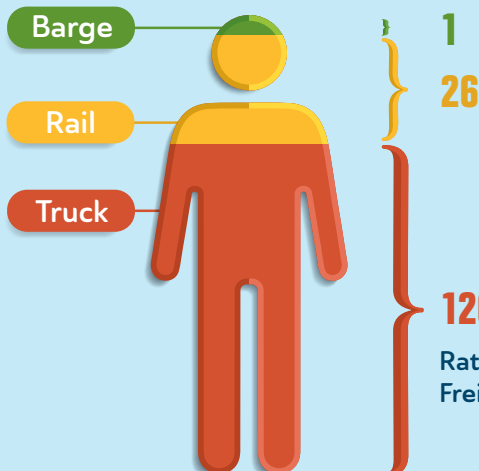
Rail
Injuries

1,145

Tractor-Trailer
Truck Injuries

Ratio of Injuries in
Freight Transportation

Inland Waterways Transport has the **Lowest Fatality** Record Compared to Rail or Truck



For 1 barge transportation fatality, there are 26 fatalities related to rail and 120 fatalities related to truck.

Ratio of Fatalities in
Freight Transportation

From: Tidemann, Jason (DNR) <jason.tidemann@state.mn.us>
Sent: Tuesday, February 8, 2022 2:32 PM
To: Kirsten Wallace
Cc: Margie Daniels
Subject: RE: UMRBA November 2021 to February 2022 Treasurer Report

Hello Kirsten,

As Treasurer, I have reviewed the monthly financial statements for the period 11/1/21-2/1/22. Activity reported on the Balance Sheet, Profit/Loss Budget Overview, Check Register, Visa statements and Open Invoices Report provide a reasonable and consistent representation of the monthly financial activity for the referenced period.

Jason Tidemann

9:27 AM

02/07/22

Accrual Basis

Upper Mississippi River Basin Association
FY 2022 Profit & Loss Budget Overview
 July 1, 2021 through February 7, 2022

| | Jul 1, '21 - Feb 7, 22 | Budget | \$ Over Budget |
|-----------------------------------|------------------------|-------------------|--------------------|
| Ordinary Income/Expense | | | |
| Income | | | |
| Contracts and Grants | | | |
| COE (UMRR) | 19,283.88 | 91,242.82 | -71,958.94 |
| COE (RTC) | 0.00 | 47,000.00 | -47,000.00 |
| EPA (OPA) | 94,826.86 | 225,000.00 | -130,173.14 |
| Interstate WQ Pilot | 23,683.25 | 86,400.00 | -62,716.75 |
| WQ Trends Report | 0.00 | 5,500.00 | -5,500.00 |
| Missouri DoC (WLM) | 901.79 | 0.00 | 901.79 |
| Total Contracts and Grants | 138,695.78 | 455,142.82 | -316,447.04 |
| State Dues | | | |
| Illinois Dues | 61,500.00 | 61,500.00 | 0.00 |
| Iowa Dues | 46,125.00 | 61,500.00 | -15,375.00 |
| Minnesota Dues | 61,500.00 | 61,500.00 | 0.00 |
| Missouri Dues | 61,500.00 | 61,500.00 | 0.00 |
| Wisconsin Dues | 61,500.00 | 61,500.00 | 0.00 |
| WQ Assessment | 102,500.00 | 102,500.00 | 0.00 |
| Total State Dues | 394,625.00 | 410,000.00 | -15,375.00 |
| Interest Income | | | |
| Short Term Interest | | | |
| Short Term (Checking) | 113.87 | 0.00 | 113.87 |
| Short Term (Savings) | 38.75 | 60.00 | -21.25 |
| Short Term (Sweep) | 0.00 | 1.00 | -1.00 |
| Short Term (CD) | 0.00 | 4,000.00 | -4,000.00 |
| Total Short Term Interest | 152.62 | 4,061.00 | -3,908.38 |
| Total Interest Income | 152.62 | 4,061.00 | -3,908.38 |
| Total Income | 533,473.40 | 869,203.82 | -335,730.42 |
| Expense | | | |
| Gross Payroll | | | |
| Salary | 196,836.14 | 337,357.86 | -140,521.72 |
| UMRBA Time Wages | 6,826.25 | 12,000.00 | -5,173.75 |
| OPA Wages | 40,194.21 | 153,900.00 | -113,705.79 |
| Benefits | 49,209.11 | 84,339.47 | -35,130.36 |
| Benefits UMRBA Time | 0.00 | 1,200.00 | -1,200.00 |
| Benefits OPA | 1,843.30 | 4,037.30 | -2,194.00 |
| Total Gross Payroll | 294,909.01 | 592,834.63 | -297,925.62 |
| Payroll Expenses | | | |
| SocSec Company | 18,058.90 | 36,755.75 | -18,696.85 |
| Medicare Company | 4,498.03 | 8,596.10 | -4,098.07 |
| SUTA (Minnesota UC) | 389.64 | 296.42 | 93.22 |
| Workforce Enhancement Fee | 96.12 | 296.42 | -200.30 |
| Total Payroll Expenses | 23,042.69 | 45,944.69 | -22,902.00 |
| Travel | 3,123.05 | 12,000.00 | -8,876.95 |
| Space Rental | | | |
| Office Rental | 33,985.54 | 51,000.00 | -17,014.46 |
| Total Space Rental | 33,985.54 | 51,000.00 | -17,014.46 |

9:27 AM

02/07/22

Accrual Basis

Upper Mississippi River Basin Association
FY 2022 Profit & Loss Budget Overview
 July 1, 2021 through February 7, 2022

| | Jul 1, '21 - Feb 7, 22 | Budget | \$ Over Budget |
|---|------------------------|------------------|------------------|
| Reproduction | | | |
| Copy Service | 483.87 | 1,360.00 | -876.13 |
| Printing | 0.00 | 500.00 | -500.00 |
| Total Reproduction | 483.87 | 1,860.00 | -1,376.13 |
| Meeting Expenses | 7,696.59 | 15,000.00 | -7,303.41 |
| Supplies | 591.39 | 3,000.00 | -2,408.61 |
| Equipment | | | |
| Equipment (Maint./Rental) | 440.37 | 1,600.00 | -1,159.63 |
| Total Equipment | 440.37 | 1,600.00 | -1,159.63 |
| Legal and Financial | | | |
| Insurance | 4,082.95 | 6,200.00 | -2,117.05 |
| Legal and Tax Services | 14,025.00 | 1,300.00 | 12,725.00 |
| Bank Charges | 69.00 | 10.00 | 59.00 |
| Total Legal and Financial | 18,176.95 | 7,510.00 | 10,666.95 |
| Telephone/Communications | 11,349.31 | 6,500.00 | 4,849.31 |
| Postage | 157.56 | 1,200.00 | -1,042.44 |
| Other Services | 9,824.00 | 7,000.00 | 2,824.00 |
| Publications | 3,706.00 | 8,200.00 | -4,494.00 |
| State Travel Reimbursement | | | |
| Illinois | 0.00 | 5,000.00 | -5,000.00 |
| Iowa | 222.54 | 5,000.00 | -4,777.46 |
| Minnesota | 0.00 | 5,000.00 | -5,000.00 |
| Missouri | 0.00 | 5,000.00 | -5,000.00 |
| Wisconsin | 0.00 | 5,000.00 | -5,000.00 |
| State WQ Travel | 0.00 | 3,500.00 | -3,500.00 |
| Total State Travel Reimbursement | 222.54 | 28,500.00 | -28,277.46 |
| OPA Expenses | | | |
| Equipment OPA | 0.00 | 1,000.00 | -1,000.00 |
| Equipment (Maint./Rental) OPA | 7,909.11 | 6,500.00 | 1,409.11 |
| Travel OPA | 828.64 | 2,800.00 | -1,971.36 |
| Other OPA | 0.00 | 800.00 | -800.00 |
| Total OPA Expenses | 8,737.75 | 11,100.00 | -2,362.25 |
| Interstate WQ Expenses | | | |
| Travel Interstate WQ | 0.00 | 500.00 | -500.00 |
| Data Collection/Analysis IntWQ | 17,644.46 | 58,200.00 | -40,555.54 |
| Other Interstate WQ | 119.86 | 1,000.00 | -880.14 |
| Total Interstate WQ Expenses | 17,764.32 | 59,700.00 | -41,935.68 |
| Total Expense | 434,210.94 | 852,949.32 | -418,738.38 |
| Net Ordinary Income | 99,262.46 | 16,254.50 | 83,007.96 |
| Net Income | 99,262.46 | 16,254.50 | 83,007.96 |

9:22 AM

02/07/22

Accrual Basis

Upper Mississippi River Basin Association

Balance Sheet

As of February 7, 2022

| | Feb 7, 22 |
|---------------------------------------|-------------------|
| ASSETS | |
| Current Assets | |
| Checking/Savings | |
| Checking HT 2732 | 167,697.65 |
| Savings HT 2575 | 337,189.59 |
| Investment | |
| CD | 406,361.81 |
| Total Investment | 406,361.81 |
| Total Checking/Savings | 911,249.05 |
| Accounts Receivable | |
| Contract/grants | |
| Invoiced/Billable | 38,038.68 |
| Total Contract/grants | 38,038.68 |
| Total Accounts Receivable | 38,038.68 |
| Other Current Assets | |
| Prepaid Expense | |
| Office Rental Prepaid Expense | 3,868.01 |
| Total Prepaid Expense | 3,868.01 |
| Total Other Current Assets | 3,868.01 |
| Total Current Assets | 953,155.74 |
| Fixed Assets | |
| Accum. Deprec. UMRBA | -33,321.09 |
| Accum. Deprec. OPA | -21,703.53 |
| Accum. Deprec. WQ | -1,290.00 |
| Accum. Deprec. 604(b) | -568.95 |
| Accum. Deprec. STC | -2,989.68 |
| UMRBA Equipment | 33,455.89 |
| OPA Equipment | 21,705.26 |
| WQ Equipment | 1,290.47 |
| 604(b) Equipment | 568.95 |
| STC Equipment | 2,989.68 |
| Total Fixed Assets | 137.00 |
| TOTAL ASSETS | 953,292.74 |
| LIABILITIES & EQUITY | |
| Liabilities | |
| Current Liabilities | |
| Credit Cards | |
| Visa Chase 5294 | 551.32 |
| Total Credit Cards | 551.32 |
| Other Current Liabilities | |
| Deferred MO DoC (WLM) Revenue | 4,206.05 |
| Payroll Liabilities | |
| SUTA (Minnesota UC) | 320.02 |
| Workforce Enhancement Fee | 26.50 |
| Accrued Vacation | 54,764.70 |
| Accrued Vacation FICA | 4,189.50 |
| Total Payroll Liabilities | 59,300.72 |
| Total Other Current Liabilities | 63,506.77 |
| Total Current Liabilities | 64,058.09 |
| Total Liabilities | 64,058.09 |
| Equity | |
| Retained Earnings | 789,972.19 |
| Net Income | 99,262.46 |
| Total Equity | 889,234.65 |
| TOTAL LIABILITIES & EQUITY | 953,292.74 |

ATTACHMENT C

Annual Consultation on Interbasin Diversion Requests

- **Background** *(C-1)*
- **Upper Mississippi River Basin Charter (10/2/1989)** *(C-2 to C-5)*

Annual Consultation on Interbasin Diversion Requests Background

In October 1989 the five basin Governors signed "The Upper Mississippi River Basin Charter" which sets forth a notification and consultation process for any new or increased water diversion out of the basin that will exceed an average of 5 million gallons per day during any 30 day period. (See Charter on pp. C-2 to C-5.) Item 6 of the Notification and Consultation Guidelines states that "at each annual meeting of the Upper Mississippi River Basin Association each state shall report on its involvement with diversion requests."

Since 1991, UMRBA's Annual Meetings have provided an opportunity for the States to fulfill their notification responsibilities under the Charter. For the past 31 years, none of the States have reported any diversion requests. Despite the fact that there has been no activity under the terms of the charter, a letter has typically been sent to each of the Governors indicating that fact.

At UMRBA's 2022 Annual Meeting on February 22, each UMRBA Board member should be prepared to report on any diversion requests within the last 12 months that would fall within the confines of the Charter.

THE UPPER MISSISSIPPI RIVER BASIN CHARTER

PRINCIPLES FOR THE MANAGEMENT OF UPPER MISSISSIPPI RIVER BASIN WATER RESOURCES AND NOTIFICATION AND CONSULTATION PROCESS GUIDELINES

FINDINGS

The Governors of the signatory Upper Mississippi River Basin States jointly find and declare that:

The water resources of the Upper Mississippi River Basin are precious natural resources. The Basin's water uses include municipal, industrial, and agricultural water supply; navigation; hydroelectric power and energy production; recreation; mining; and the maintenance of fish and wildlife habitat. The Basin States have a duty to protect, conserve, develop, and manage the water resources of the Basin.

The water resources of the Upper Mississippi River Basin comprise a valuable regional and national resource. The Upper Mississippi river system is a multi-purpose system with two Congressional mandates; it is managed both for commercial navigation and as a national wildlife refuge. The States in partnership with the federal government of the United States share a continuing and abiding responsibility to maintain and enhance all aspects of this multipurpose system. Without careful and prudent management, future diversions of the water resources of the Upper Mississippi River Basin may have significant adverse impacts on the environment, economy, and welfare of the region.

Management of the water resources of the Upper Mississippi River Basin is subject to the jurisdiction, rights, and responsibilities of each Basin State. Effective management of the water resources of the Basin requires the Basin States to exercise their jurisdiction, rights, and responsibilities in the interest of all of the people of the region through a continuing spirit of comity and mutual cooperation.

A preferred means to achieve effective management of the water resources of the Upper Mississippi River Basin is through the joint pursuit of unified and cooperative principles and policies mutually agreed upon and adhered to by the States of the Upper Mississippi River Basin.

PURPOSE

The purposes of this charter are to conserve the levels and flows of the water resources; to protect the environmental ecosystem; to secure present development; to provide a foundation for future investment and development; and to assure all significant benefits and impacts are considered before a decision is made.

PRINCIPLES FOR THE MANAGEMENT OF THE UPPER MISSISSIPPI RIVER BASIN WATER RESOURCES

In order to achieve the purposes of this Charter, the Governors of the signatory Upper Mississippi River Basin States agree, subject to the laws of each state, that:

Principle I Integrity of the Upper Mississippi River Basin

The water resources of the Upper Mississippi River Basin shall be managed for the wise use, benefit, and enjoyment of all citizens of the Basin. The planning and management of the water resources of the Upper Mississippi River Basin shall recognize that the water resources of the Upper Mississippi River Basin transcend political boundaries within the Basin and should be conserved and provided for beneficial uses including navigation, recreation, municipal and industrial water supply, irrigation, hydroelectric power and energy production, water quality, mining, maintenance of fish and wildlife habitat, aquatic ecosystem, and other instream and withdrawal uses.

Principle II Notification and Consultation

The signatory states agree that it is the intent of the states that interbasin diversion of water resources will not be supported if individually or cumulatively they would have significant adverse impact on instream flows, in-basin uses, and the basin ecosystem.

Any state having knowledge of a proposal for a new or increased diversion of water which will exceed 5 million gallons per day average in any 30 day period from the waters of the Upper Mississippi River Basin to another basin shall notify and offer to consult with all signatory states in order to allow all signatory states to express their concerns, identify their interests, develop where possible mutually acceptable agreements, or take such other actions as they may find appropriate.

Principle III Cooperation Among States

The Governors agree to pursue such additional agreements as may be necessary to promote greater cooperation with respect to any new or increased interbasin diversions of Mississippi River Basin waters.

Principle IV Reservation of States Rights

The signatory States mutually recognize the rights and standings of each other to represent and protect the rights of their respective jurisdictions. Each State reserves and retains all rights and authority to seek, in any state, federal, or other appropriate court or forum, adjudication or protection of their respective rights.

NOTIFICATION AND CONSULTATION PROCESS GUIDELINES

1) State Appointments

- Each signatory state shall designate a contact person for the state's involvement in the notification and consultation process.
- The Upper Mississippi River Basin Association shall compile and maintain a mailing list.

2) Notification

- Notice shall be given to all signatory states of an anticipated diversion which exceeds 5 million gallons per day average in any 30 day period.
- The notice shall include at a minimum:
 - a) name, location, and sending and receiving waterbodies or basins
 - b) list of applicable permits
 - c) purpose of water use
 - d) method of measurement
 - e) request for comments

3) Comments/Objections

Comments or objections from the signatory states:

- a) shall be submitted by the Governor or his representative within 45 days
- b) should be based on hydrologic, economic, or environmental concerns
- c) may include a request for a consultation meeting

4) Consultation

- The originating state shall schedule and conduct a consultation meeting when a letter of objection has been received and a consultation meeting requested.
- The originating state shall provide a minimum 30 day notice of the meeting to the Governors or their representatives.
- The originating state shall be responsible for preparation of the agenda, chairing of the meeting, and preparation of notes of the meeting.
- The consultation meeting shall include opportunities for description of the proposed diversion, presentation of basin states positions, and discussion.


5) Decision

- If no objections are received, the originating state shall make its decision on the proposed withdrawal and inform the signatory states.
- If objections are received, whether or not a consultation meeting is convened, the originating state shall:
 - a) distribute to signatory states a summary of the consultation discussion and comments and a draft response to the diversion request.
 - b) allow 30 days for comments from the signatory states.
 - c) consider comments received.
 - d) distribute the final disposition of the diversion request to all signatory states within 15 days after the final decision has been made.

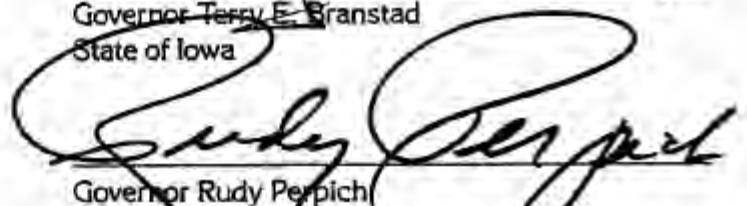
6) Annual Review

At each annual meeting of the Upper Mississippi River Basin Association each state shall report on its involvement with diversion requests.


Signed at Milwaukee, Wisconsin this 2nd day of October, 1989.


Governor James R. Thompson
State of Illinois


Governor Terry E. Branstad
State of Iowa


Governor Rudy Perpich
State of Minnesota


Governor John Ashcroft
State of Missouri


Governor Tommy Thompson
State of Wisconsin

ATTACHMENT D

UMRBA Chloride Resolution Draft (1/22/2022)

(D-1 to D-2)

Upper Mississippi River Basin Association Resolution Regarding Chloride Contamination in the Upper Mississippi River Basin

Draft as of 1-21-22

Whereas the Governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin work collaboratively through the Upper Mississippi River Basin Association (UMRBA) with the goal of advancing their shared commitment to protecting and improving the water quality of the Upper Mississippi River;

Whereas winter de-icing salt application and municipal wastewater treatment discharge into surface waterbodies throughout the Upper Mississippi River watershed are resulting in rising chloride levels;

Whereas state chloride monitoring programs beginning as early as 1961 have observed that chloride concentrations are increasing in the Upper Mississippi River Basin;¹

Whereas the U.S. Environmental Protection Agency has declared that chloride concentrations greater than 230 mg/L (chronic exposure) and 860 mg/L (acute exposure) impact aquatic organisms and the ecosystem by interfering with osmoregulation, inhibiting vegetation growth, impairing reproductive cycles, salinizing soils and groundwater, and ultimately reducing the biodiversity in a waterbody;

Whereas U.S. Environmental Protection Agency ambient aquatic life water quality criteria numbers for chloride were published in 1988;

Whereas chloride contamination mobilizes metals and nutrients in soils and pavements, corrodes infrastructure, (e.g., roadways) and de-icing accelerates rusting of automobiles;

Whereas existing solutions for reversing chloride contamination are limited and expensive;

Whereas road salt application techniques exist that minimize chloride runoff while ensuring public safety while substantially reducing winter road maintenance costs for municipalities, cities, states, and private applicators;

Whereas Minnesota's *Smart Salting* program (applicator training and certification for private contractors) shows that strategic applications can reduce road salting rates by 30 percent to 70 percent in the Twin Cities Metro Area;

Whereas states may offer limited liability protection to road salt applicators against ice-related injuries and property damage to provide incentives to minimize salt application;

¹ References to state-specific chloride trends:

Illinois EPA: <http://www.umrba.org/il-epa-amb-chlor.pdf>

Iowa DNR chloride trends: <http://www.umrba.org/ia-dnr-chlor-trends.pdf>

Minnesota PCA: <https://www.pca.state.mn.us/sites/default/files/wq-s1-71.pdf>

Missouri DNR: <http://www.umrba.org/mo-dnr-chloride-trend-analysis.pdf>

Wisconsin DNR: <https://wisconsin.dnr.shinyapps.io/riverwq/>

Whereas the general public is mostly unaware of trends in chloride contamination and the associated impacts as well as methods to minimize chloride runoff;

Therefore, Be it Resolved, UMRBA urges the U.S. Environmental Protection Agency to a) improve the scientific understanding of chloride-related impacts to designated uses in surface and groundwater and b) update chloride criteria incorporating knowledge gained since 1988;

Therefore, Be it Resolved, UMRBA will work with its member states and the federal agencies with water quality responsibilities to develop and implement a communications strategy for the purposes of informing government officials, decision makers, and applicators about chloride trends, negative effects of excessive use, and best management practices to minimize runoff;

Be it Further Resolved, UMRBA will work collaboratively with state and federal water quality and transportation agencies as well as local units of government and private organizations to secure resources needed for monitoring and research as well as implementing best management practices to reduce salt usage and addressing policy needs, such as reducing liability and providing training to private applicators.

ATTACHMENT E

Resilience Planning

- **NOAA Upper Mississippi River Basin Climate Briefing (2021)** *(E-1 to E-2)*
- **NIDIS Midwest Drought Characteristics and Predictability (2/1/2022)**
 - **Onset, Persistence, and Recovery Fact Sheet** *(E-3 to E-4)*
 - **Variability and Trends** *(E-5 to E-6)*
 - **YouTube Video of Research Findings:**
<https://youtu.be/MUEwlfN3cT4>
- **Missouri Senate Proposed Flood Resiliency Act, SB 984 (1/5/2022)**
 - **Bill Summary** *(E-7)*
 - **Bill Text** *(E-8 to E-11)*
- **Five-Year Regional Dredged Material Management Plans (WRDA 2020 Section 125)**
 - **Legislative Provision (12/21/2020)** *(E-12 to E-22)*
 - **Implementation Guidance (10/29/2021)** *(E-23 to E-27)*

Upper Mississippi River Basin

Climate Change Brief

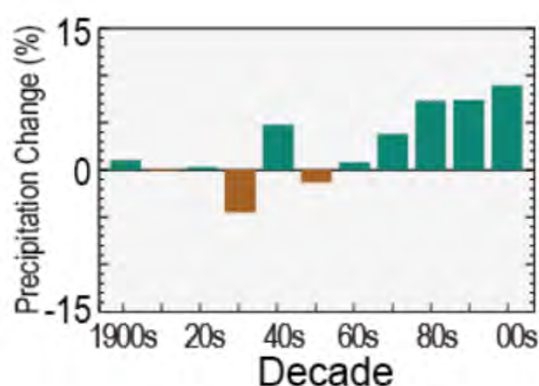
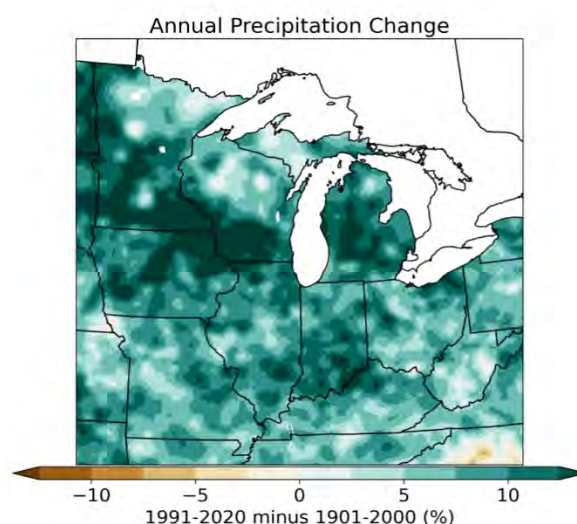


Precipitation is Increasing

Annual precipitation averages are rising across much of the U.S., and some of the largest increases are in the Upper Mississippi River basin.

Over the past 30 years, average annual precipitation has increased by +1.34" per decade. This is a big leap from the +0.18" decadal trend from the preceding century (1895-1990).

Image: Annual total precipitation changes for 1991-2012 compared to the 1901-1960 average. Source: NOAA NCEI ; adapted from Peterson et al. 2013



Percent changes in the annual amount of precipitation falling in very heavy events, defined as the heaviest 1% of all daily events from 1901 to 2012. Figure Source: NOAA NCDC / CICS-NC

Rains are Gaining Intensity

There is a clear pattern of large precipitation amounts being concentrated in high-intensity events. The frequency of heavy precipitation events within the Upper Mississippi Basin has risen over the past 50 years. In fact, the Midwest saw a 37% increase in the heaviest (1%) events from 1958 to 2012.

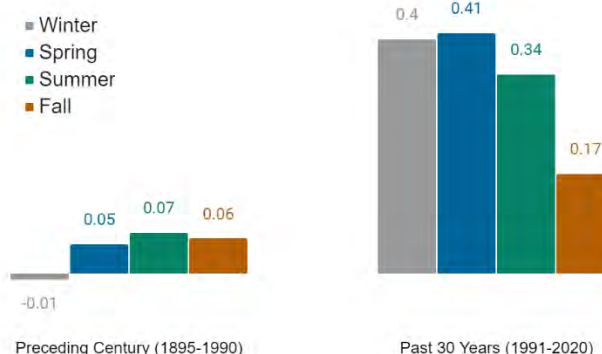
This includes mega-rains, which are defined by their high intensity ($\geq 6"$), large coverage area ($\geq 1,000$ mi²), and often catastrophic impacts.

Every Season is Wetter

Rising precipitation has been observed across all seasons over the last 30 years in the Upper Mississippi River basin. The biggest increases have been in the winter and spring.

Note how the rise has accelerated in the past 30 years.

Every season is wetter over past 30 years
(average change in inches per decade)



Upper Mississippi River Basin

Climate Change Brief



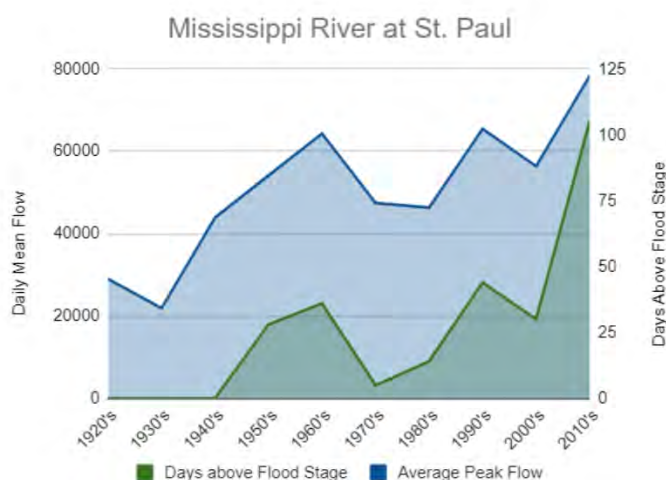
The River is Responding

How is the Mississippi River handling all of this extra water?

Annual flood magnitudes are increasing across most of the Upper Mississippi River basin, with decadal rises as high as +15%.

In fact, the Midwest is seeing the most significant increasing trends of any area in the U.S.

Image: Trend magnitude and direction of annual flood magnitude, 1920-2008. Figure source: Peterson et al. 2013



Higher Flows and Longer Floods

The impacts of increased precipitation are also observed locally on rivers in the Upper Mississippi River Basin:

- Increased days above flood stage
- Higher average peak flow

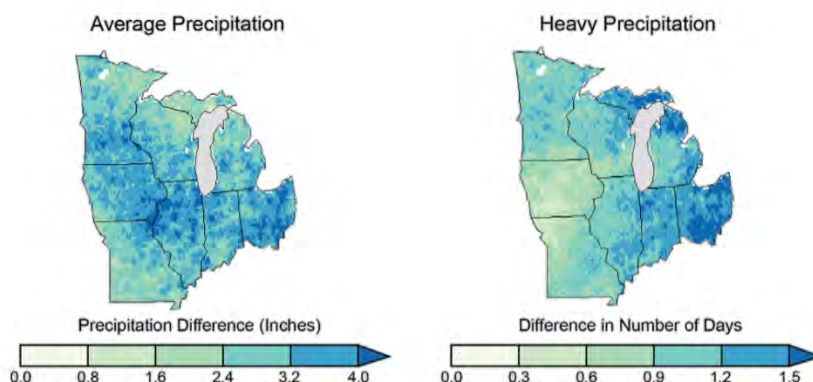
Please note the dramatic change in the length of time the river spends above Flood Stage in the past decade (2010's). At several sites the Mississippi River was above flood stage approximately 5-10x longer in the past decade than on average over the preceding 80 years.

Climate Projections

Projections for the rest of the century show that many of the observed upward trends will continue.

- Increase in average precipitation
- More intense precipitation events
- Winter and Spring will continue to see the largest increases in precipitation.

Image: Comparison of 1971-2000 observations with 2041-2070 projections. Left: Increases in total annual average precipitation. Right: Increase in number of days with top 2% precipitation events. Figure source: NOAA NCDC / CICS-NC.



DROUGHT ONSET, PERSISTENCE, AND RECOVERY IN THE MIDWEST



The Midwest region has endured many droughts that have led to billion dollar losses, with examples over the last 30 years including 1980s, 2005, and 2012. Neither the onset or demise of the 2005 and 2012 droughts over the Midwest were forecast. The goal of this research study led by NOAA's Physical Sciences Laboratory is to build a predictive understanding of drought and to quantify the risks of droughts with certain characteristics in the Midwest region. This summary highlights results focused on the characteristics of drought onset, persistence, and recovery.

Drought Persistence

The frequency of drought persistence in each of the four Midwest sub-regions indicates that the likelihood of drought duration depends on location (Figure 1). Droughts tend to last longer in the Great Plains regions than they do in the Great Lakes or Ohio Valley regions. The Northern Great Plains was four times more likely to experience a drought lasting at least 12 months than the Ohio Valley. Drought duration is related to the climatological precipitation seasonal cycles, in which much of the Northern Great Plains experiences a single wet season that spans April-October while the Ohio Valley receives appreciable precipitation during all months.

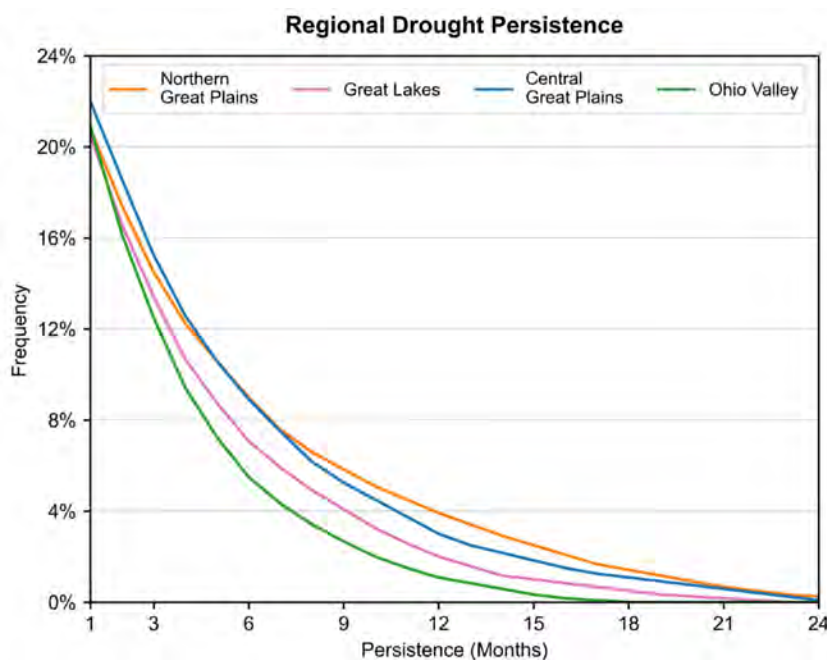


Figure 1: Frequency of drought persistence in each region. Frequency (percent) is on the y-axis, and persistence (months) is on the x-axis.

Key Takeaways:

- Droughts last longer in the Great Plains than they do in the Great Lakes or Ohio Valley region. Fewer opportunities for drought amelioration are found in the Great Plains throughout the year because the majority of precipitation is observed during the warm season.
- Drought onset and demise follow the precipitation seasons, whereby droughts tend to begin and end during seasons with appreciable precipitation.

Drought Onset and Recovery

Droughts begin and end during preferred seasons in each Midwest sub-region (Figure 2). The preferred seasons generally follow the precipitation seasonal cycle, whereby droughts tend to begin and end during seasons with appreciable precipitation. For the Great Plains, droughts overwhelmingly begin and end outside of winter, the dry time of year, with a maximum in June-August and September-November. Spring and fall maximums in drought onset and recovery are related to increased precipitation variability during these seasons relative to summer.

Drought onset and recovery in the Great Lakes and Ohio Valley regions of the Midwest occur more equitably across the seasons than is observed over the Great Plains regions. The Ohio Valley region experiences drought onset and recovery more frequently in spring, while the Great Lakes regions experiences drought onset and demise more frequently in fall because precipitation variability is greatest during these seasons over these regions.

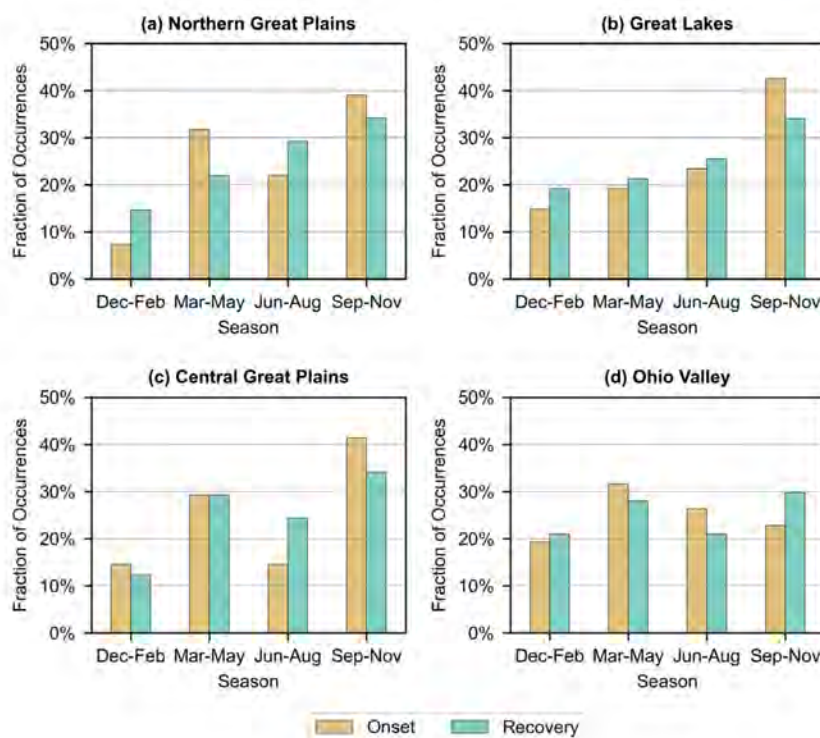
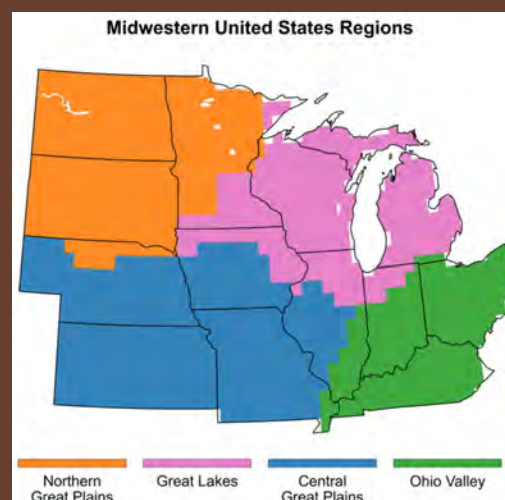


Figure 2. Fraction of drought onset (brown) and recovery (teal) in each region by season.

Project Methods: A monthly integrated drought index (IDI) is used to measure drought during 1916-2015. This version of an IDI, adapted from Mo and Lettenmaier (2014, 2018), is defined as the average of three-month standardized runoff and monthly standardized total land surface moisture from four land surface models included in the [UCLA Experimental Surface Water Monitor](#). Total moisture is the sum of column integrated soil moisture and snow water equivalent. Four regions within the Midwestern United States, shown on the right, are considered: Ohio Valley, Great Lakes, Central Great Plains, and Northern Great Plains. These regions were identified by applying a hierarchical clustering algorithm based on [Ward \(1963\)](#) to the monthly IDI. The monthly IDI for each region is quantified by calculating the average IDI of all grid points within them. Following [Mo \(2011\)](#), a regional drought event is defined as the time from which the regional IDI falls below -0.8 standardized departures (onset) to when the IDI exceeds -0.2 standardized departures (recovery)



DROUGHT VARIABILITY AND TRENDS IN THE MIDWEST UNITED STATES



The Midwest region has endured many droughts that have led to billion dollar losses, with examples over the last 30 years including 1980s, 2005, and 2012. Neither the onset or demise of the 2005 and 2012 droughts over the Midwest were forecast. The goal of this research study led by NOAA's Physical Sciences Laboratory is to build a predictive understanding of drought and to quantify the risks of droughts with certain characteristics in the Midwest region. This summary highlights results focused on overall drought variability and trends in the Midwest.

Drought Variability and its Decrease

The intricacies of regional drought within the Midwest and hydroclimatic differences across the region are shown in Figure 1 by the time series of the Integrated Drought Index (IDI) in the Northern Great Plains, Great Lakes, Central Great Plains, and Ohio Valley regions during 1916-2015. Though droughts are a feature in all four sub-regions, the variability, persistence, and clustering of drought episodes in given decades are largely different. Nonetheless, there are seven epochs in which all four sub-regions experienced low IDI simultaneously: 1917-18, 1925, 1933-34, 1939-40, 1963-64, 1988, and 2012-13.

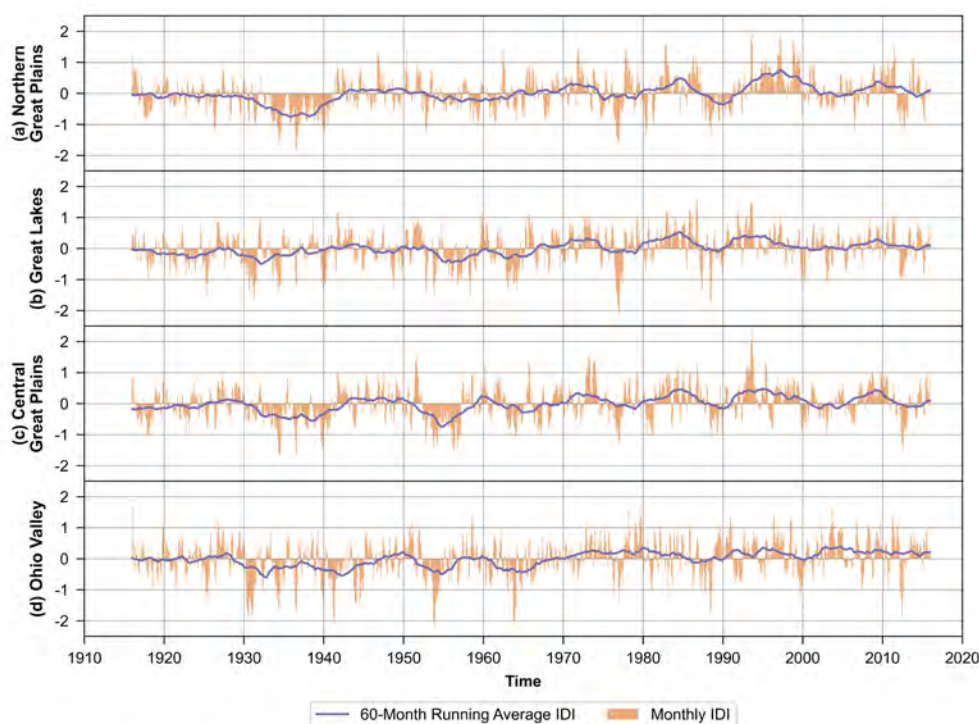


Figure 1. Time series of regional IDI in standardized departures. Shown are the monthly IDI (orange bars) and 60-month running average IDI (purple line).

Key Takeaways:

- Historically, the variability, persistence, and clustering of drought episodes are largely different from one sub-region to the next in the Midwest.
- Region-wide droughts in the Midwest are infrequent, only occurring seven times since 1916.
- Drought prevalence in the Midwest decreased in the 20th and 21st centuries due to an increase in precipitation across the region.

Drought Variability and its Decrease (continued)

Another feature common to all sub-regions is the decrease in drought prevalence from the 20th to the 21st centuries. Droughts were more frequent in the Midwest in the 1930s, 1950s, and 1960s compared to after 1990. All four regions experienced an IDI falling below -0.8 approximately two to four times as often in the 1930s and 1950s compared to the 1990s and 2000s.

Precipitation Increase

The observed decreases in drought prevalence during the 20th and 21st centuries were caused by increases in annual precipitation (Figure 2). More than 80% of the Midwest United States experienced increases in annual precipitation from 1920-1979 to 1980-2009. Increases in annual precipitation of up to 15% occurred over the historically driest areas of the Midwest, notably the Central and Northern Great Plains. Historically wetter areas in the Ohio Valley and Great Lakes regions experienced more modest annual precipitation increases of up to 9% in the recent 30-year period compared to the prior 60 years.

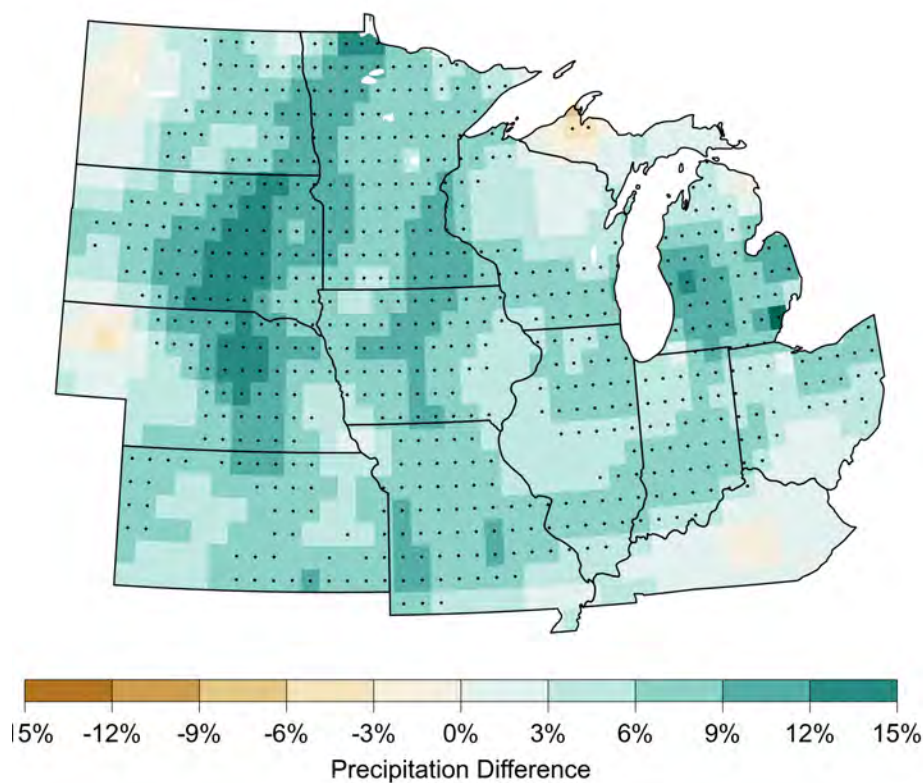


Figure 2. Calendar year precipitation percent difference from 1920-1979 to 1980-2009. Stippling indicates statistically significant differences at the 95% confidence level.

Project Methods: A monthly integrated drought index (IDI) is used to measure drought during 1916-2015. This version of an IDI, adapted from Mo and Lettenmaier (2014, 2018), is defined as the average of three-month standardized runoff and monthly standardized total land surface moisture from four land surface models included in the [UCLA Experimental Surface Water Monitor](#). Total moisture is the sum of column integrated soil moisture and snow water equivalent. Four regions within the Midwestern United States are considered (shown on the right): Ohio Valley, Great Lakes, Central Great Plains, and Northern Great Plains. These regions were identified by applying a hierarchical clustering algorithm based on [Ward \(1963\)](#) to the monthly IDI. The monthly IDI for each region is quantified by calculating the average IDI of all grid points within them.

This report is based on [Characteristics and Predictability of Midwestern United States Drought](#) published in the [Journal of Hydrometeorology](#). E-6



SB 984

Creates provisions relating to flood resiliency

Sponsor:

Hegeman (<https://www.senate.mo.gov/22web/mem12>)

LR Number:

4622S.02I

Committee:**Last Action:**

1/5/2022 - S First Read

Journal Page:

S36 (<https://www.senate.mo.gov/22info/pdf-jrnl/DAY01.pdf#page=36>)

Title:**Calendar Position:**

83

Effective Date:

August 28, 2022

Current Bill Summary

SB 984 - This act creates the "Flood Resiliency Act", which shall be a flood resiliency program administered by the Department of Natural Resources to increase flood resiliency along the Missouri and Mississippi Rivers and their tributaries and to improve statewide flood forecasting and monitoring ability. The state may participate in flood resiliency projects as set forth in the act. A plan, which is defined as a preliminary report describing the need for, and implementation of, flood resiliency measures, shall include information listed in the act. The Director of the Department of Natural Resources shall only approve plans if it is determined that long-term flood mitigation is needed in that area of the state, and that such a plan proposes flood resiliency measures which will provide long-term flood resiliency.

Flood resiliency projects may be funded by moneys in the Flood Resiliency Fund created in the act and such projects shall be eligible to receive other contributions and grants as stated in the act.

JAMIE ANDREWS

Amendments

No Amendments Found.

SENATE BILL NO. 984

101ST GENERAL ASSEMBLY

INTRODUCED BY SENATOR HEGEMAN.

4622S.02I

ADRIANE D. CROUSE, Secretary

AN ACT

To amend chapter 256, RSMo, by adding thereto one new section relating to flood resiliency.

Be it enacted by the General Assembly of the State of Missouri, as follows:

Section A. Chapter 256, RSMo, is amended by adding thereto
2 one new section, to be known as section 256.800, to read as
3 follows:

256.800. 1. This section shall be known and may be
2 cited as the "Flood Resiliency Act".

3 2. As used in this section, unless the context
4 otherwise requires, the following terms shall mean:

5 (1) "Director", the director of the department of
6 natural resources;

7 (2) "Flood resiliency measures", structural
8 improvements, studies, and activities employed to improve
9 flood resiliency in local to regional or multi-
10 jurisdictional areas;

11 (3) "Flood resiliency project", a project containing
12 planning, design, construction, or renovation of flood
13 resiliency measures, or the conduct of studies or activities
14 in support of flood resiliency measures;

15 (4) "Partner", a political subdivision, entity, or
16 person working in conjunction with a promoter to facilitate
17 the completion of a flood resiliency project;

18 (5) "Plan", a preliminary report describing the need
19 for, and implementation of, flood resiliency measures;

20 (6) "Promoter", any political subdivision of the
21 state, or any levee district or drainage district organized
22 or incorporated in the state.

23 3. (1) There is hereby established in the state
24 treasury a fund to be known as the "Flood Resiliency
25 Improvement Fund", which shall consist of all money
26 deposited in such fund from whatever source, whether public
27 or private. The state treasurer shall be custodian of the
28 fund. In accordance with sections 30.170 and 30.180, the
29 state treasurer may approve disbursements. The fund shall
30 be a dedicated fund and money in the fund shall be used
31 solely for the purposes of this section. Notwithstanding
32 the provisions of section 33.080 to the contrary, any moneys
33 remaining in the fund at the end of the biennium shall not
34 revert to the credit of the general revenue fund. The state
35 treasurer shall invest moneys in the fund in the same manner
36 as other funds are invested. Any interest and other moneys
37 earned on such investments shall be credited to the fund.

38 (2) Upon appropriation, the department of natural
39 resources shall use money in the fund created by this
40 subsection for the purposes of carrying out the provisions
41 of this section, including, but not limited to, the
42 provision of grants or other financial assistance, and, if
43 limitations or conditions are imposed, only upon such other
44 limitations or conditions specified in the instrument that
45 appropriates, grants, bequeaths, or otherwise authorizes the
46 transmission of money to the fund.

47 4. In order to increase flood resiliency along the
48 Missouri and Mississippi Rivers and their tributaries, and
49 improve statewide flood forecasting and monitoring ability,
50 there is hereby established a "Flood Resiliency Program".
51 The program shall be administered by the department of

52 natural resources. The state may participate with a
53 promoter in the development, construction, or renovation of
54 a flood resiliency project if the promoter has a plan which
55 has been submitted to and approved by the director, or the
56 state may promote a flood resiliency project and initiate a
57 plan on its own accord.

58 5. The plan shall include a description of the flood
59 resiliency project, the need for the project, the flood
60 resiliency measures to be implemented, the partners to be
61 involved in the project, and other such information as the
62 director may require to adequately evaluate the merit of the
63 project.

64 6. The director shall only approve a plan upon a
65 determination that long-term flood mitigation is needed in
66 that area of the state, and that such a plan proposes flood
67 resiliency measures which will provide long-term flood
68 resiliency.

69 7. Promoters with approved flood resiliency plans and
70 projects shall be eligible to receive any gifts,
71 contributions, grants, or bequests from federal, state,
72 private, or other sources for engineering, construction or
73 renovation costs associated with such projects.

74 8. Promoters with approved flood resiliency projects
75 may be granted funds from the flood resiliency improvement
76 fund pursuant to subsection 3 of this section.

77 9. The department of natural resources is hereby
78 granted authority to promulgate rules to implement this
79 section. Any rule or portion of a rule, as that term is
80 defined in section 536.010, that is created under the
81 authority delegated in this section shall become effective
82 only if it complies with and is subject to all of the
83 provisions of chapter 536 and, if applicable, section

84 536.028. This section and chapter 536 are nonseverable and
85 if any of the powers vested with the general assembly
86 pursuant to chapter 536 to review, to delay the effective
87 date, or to disapprove and annul a rule are subsequently
88 held unconstitutional, then the grant of rulemaking
89 authority and any rule proposed or adopted after August 28,
90 2022, shall be invalid and void.

✓

1314

1 information about the request and the reasons for
2 the Secretary's determination.”.

3 **SEC. 124. SENSE OF CONGRESS ON MULTIPURPOSE**
4 **PROJECTS.**

5 It is the sense of Congress that the Secretary, in co-
6 ordination with non-Federal interests, should maximize
7 the development, evaluation, and recommendation of
8 project alternatives for future water resources develop-
9 ment projects that produce multiple project benefits, such
10 as navigation, flood risk management, and ecosystem res-
11 toration benefits, including through the use of natural or
12 nature-based features and the beneficial use of dredged
13 material.

14 **SEC. 125. BENEFICIAL USE OF DREDGED MATERIAL;**
15 **DREDGED MATERIAL MANAGEMENT PLANS.**

16 (a) NATIONAL POLICY ON THE BENEFICIAL USE OF
17 DREDGED MATERIAL.—

18 (1) IN GENERAL.—It is the policy of the United
19 States for the Corps of Engineers to maximize the
20 beneficial use, in an environmentally acceptable
21 manner, of suitable dredged material obtained from
22 the construction or operation and maintenance of
23 water resources development projects.

24 (2) PLACEMENT OF DREDGED MATERIALS.—

1315

1 (A) IN GENERAL.—In evaluating the place-
2 ment of dredged material obtained from the
3 construction or operation and maintenance of
4 water resources development projects, the Sec-
5 retary shall consider—

6 (i) the suitability of the dredged mate-
7 rial for a full range of beneficial uses; and

8 (ii) the economic and environmental
9 benefits, efficiencies, and impacts (includ-
10 ing the effects on living coral) of using the
11 dredged material for beneficial uses, in-
12 cluding, in the case of beneficial use activi-
13 ties that involve more than one water re-
14 sources development project, the benefits,
15 efficiencies, and impacts that result from
16 the combined activities.

17 (B) CALCULATION OF FEDERAL STAND-
18 ARD.—

19 (i) DETERMINATION.—The economic
20 benefits and efficiencies from the beneficial
21 use of dredged material considered by the
22 Secretary under subparagraph (A) shall be
23 included in any determination relating to
24 the “Federal standard” by the Secretary
25 under section 335.7 of title 33, Code of

1316

1 Federal Regulations, for the placement or
2 disposal of such material.

3 (ii) REPORTS.—The Secretary shall
4 submit to Congress—

5 (I) a report detailing the method
6 and all of the factors utilized by the
7 Corps of Engineers to determine the
8 Federal standard referred to in clause
9 (i); and

10 (II) for each evaluation under
11 subparagraph (A), a report displaying
12 the calculations for economic and en-
13 vironmental benefits and efficiencies
14 from the beneficial use of dredged ma-
15 terial (including, where appropriate,
16 the utilization of alternative dredging
17 equipment and dredging disposal
18 methods) considered by the Secretary
19 under such subparagraph for the
20 placement or disposal of such mate-
21 rial.

22 (C) SELECTION OF DREDGED MATERIAL
23 DISPOSAL METHOD FOR CERTAIN PURPOSES.—
24 Section 204(d) of the Water Resources Develop-

1317

1 ment Act of 1992 (33 U.S.C. 2326(d)) is
2 amended—

3 (i) in paragraph (1)—

4 (I) in the matter preceding sub-
5 paragraph (A), by striking “In devel-
6 oping” and all that follows through
7 “the non-Federal interest,” and in-
8 serting “At the request of the non-
9 Federal interest for a water resources
10 development project involving the dis-
11 posal of dredged material, the Sec-
12 retary, using funds appropriated for
13 construction or operation and mainte-
14 nance of the project, may select”; and

15 (II) in subparagraph (B), by
16 striking “flood and storm damage and
17 flood reduction benefits” and inserting
18 “hurricane and storm or flood risk re-
19 duction benefits”; and

20 (ii) by adding at the end the fol-
21 lowing:

22 “(5) SELECTION OF DREDGED MATERIAL DIS-
23 POSAL METHOD FOR CERTAIN PURPOSES.—Activities
24 carried out under this subsection—

1318

1 “(A) shall be carried out using amounts
2 appropriated for construction or operation and
3 maintenance of the project involving the dis-
4 posal of the dredged material; and

5 “(B) shall not carried out using amounts
6 made available under subsection (g).”.

7 (b) BENEFICIAL USE OF DREDGED MATERIAL.—

8 (1) PILOT PROGRAM PROJECTS.—Section 1122
9 of the Water Resources Development Act of 2016
10 (33 U.S.C. 2326 note) is amended—

11 (A) in subsection (a)—

12 (i) in paragraph (6), by striking “;
13 and” and inserting a semicolon;

14 (ii) in paragraph (7)(C), by striking
15 the period at the end and inserting “;
16 and”; and

17 (iii) by adding at the end the fol-
18 lowing:

19 “(8) recovering lost storage capacity in res-
20 ervoirs due to sediment accumulation, if the project
21 also has a purpose described in any of paragraphs
22 (1) through (7).”;

23 (B) in subsection (b)(1), by striking “20”
24 and inserting “35”; and

1319

1 (C) in subsection (g), by striking “20” and
2 inserting “35”.

3 (2) SENSE OF CONGRESS.—It is the sense of
4 Congress that the Secretary, in selecting projects for
5 the beneficial use of dredged materials under section
6 1122 of the Water Resources Development Act of
7 2016 (33 U.S.C. 2326 note), should ensure the thor-
8 ough evaluation of project submissions from rural,
9 small, and economically disadvantaged communities.

10 (3) PROJECT SELECTION.—In selecting projects
11 for the beneficial use of dredged materials under
12 section 1122 of the Water Resources Development
13 Act of 2016 (33 U.S.C. 2326 note), the Secretary
14 shall prioritize the selection of at least one project
15 for the utilization of thin layer placement of dredged
16 fine and coarse grain sediment and at least one
17 project for recovering lost storage capacity in res-
18 ervoirs due to sediment accumulation authorized by
19 subsection (a)(8) of such section, to the extent that
20 a non-Federal interest has submitted an application
21 for such project purposes that otherwise meets the
22 requirements of such section.

23 (4) TEMPORARY EASEMENTS.—Section 1148 of
24 the Water Resources Development Act of 2018 (33
25 U.S.C. 2326 note) is amended—

1320

1 (A) in subsection (a)—

2 (i) by striking “grant” and inserting
3 “approve”; and

4 (ii) by striking “granting” and insert-
5 ing “approving”; and

6 (B) in subsection (b), by striking “grants”
7 and inserting “approves”.

8 (c) FIVE-YEAR REGIONAL DREDGED MATERIAL
9 MANAGEMENT PLANS.—

10 (1) IN GENERAL.—Not later than 1 year after
11 the date of enactment of this Act, and annually
12 thereafter, the District Commander of each district
13 of the Corps of Engineers that obtains dredged ma-
14 terial through the construction or operation and
15 maintenance of a water resources development
16 project shall, at Federal expense, develop and submit
17 to the Secretary a 5-year dredged material manage-
18 ment plan in coordination with relevant State agen-
19 cies and stakeholders.

20 (2) SCOPE.—Each plan developed under this
21 subsection shall include—

22 (A) a dredged material budget for each
23 watershed or littoral system within the district;

24 (B) an estimate of the amount of dredged
25 material likely to be obtained through the con-

1321

1 struction or operation and maintenance of all
2 water resources development projects projected
3 to be carried out within the district during the
4 5-year period following submission of the plan,
5 and the estimated timing for obtaining such
6 dredged material;

7 (C) an identification of potential water re-
8 sources development projects projected to be
9 carried out within the district during such 5-
10 year period that are suitable for, or that re-
11 quire, the placement of dredged material, and
12 an estimate of the amount of dredged material
13 placement capacity of such projects;

14 (D) an evaluation of—

15 (i) the suitability of the dredged mate-
16 rial for a full range of beneficial uses; and

17 (ii) the economic and environmental
18 benefits, efficiencies, and impacts (includ-
19 ing the effects on living coral) of using the
20 dredged material for beneficial uses, in-
21 cluding, in the case of beneficial use activi-
22 ties that involve more than one water re-
23 sources development project, the benefits,
24 efficiencies, and impacts that result from
25 the combined activities;

1322

1 (E) the district-wide goals for beneficial
2 use of the dredged material, including any ex-
3 pected cost savings from aligning and coordi-
4 nating multiple projects (including projects
5 across Corps districts) in the use of the dredged
6 material; and

7 (F) a description of potential beneficial use
8 projects identified through stakeholder sollicita-
9 tion and coordination.

10 (3) PUBLIC COMMENT.—In developing each
11 plan under this subsection, each District Com-
12 mander shall provide notice and an opportunity for
13 public comment, including a solicitation for stake-
14 holders to identify beneficial use projects, in order to
15 ensure, to the extent practicable, that beneficial use
16 of dredged material is not foregone in a particular
17 fiscal year or dredging cycle.

18 (4) PUBLIC AVAILABILITY.—Upon submission
19 of each plan to the Secretary under this subsection,
20 each District Commander shall make the plan pub-
21 licly available, including on a publicly available
22 website.

23 (5) TRANSMISSION TO CONGRESS.—As soon as
24 practicable after receiving a plan under subsection

1323

1 (a), the Secretary shall transmit the plan to Con-
2 gress.

3 (6) REGIONAL SEDIMENT MANAGEMENT
4 PLANS.—A plan developed under this section—

5 (A) shall be in addition to regional sedi-
6 ment management plans prepared under section
7 204(a) of the Water Resources Development
8 Act of 1992 (33 U.S.C. 2326(a)); and

9 (B) shall not be subject to the limitations
10 in section 204(g) of the Water Resources Devel-
11 opment Act of 1992 (33 U.S.C. 2326(g)).

12 (d) DREDGE PILOT PROGRAM.—

13 (1) REVISIONS.—Section 1111 of the Water
14 Resources Development Act of 2018 (33 U.S.C.
15 2326 note) is amended—

16 (A) in subsection (a), by striking “for the
17 operation and maintenance of harbors and in-
18 land harbors” and all that follows through the
19 period at the end and inserting the following:
20 “for the operation and maintenance of—

21 “(1) harbors and inland harbors referred to in
22 section 210(a)(2) of the Water Resources Develop-
23 ment Act of 1986 (33 U.S.C. 2238(a)(2)); or

24 “(2) inland and intracoastal waterways of the
25 United States described in section 206 of the Inland

1324

1 Waterways Revenue Act of 1978 (33 U.S.C.
2 1804).”; and

3 (B) in subsection (b), by striking “or in-
4 land harbors” and inserting “, inland harbors,
5 or inland or intracoastal waterways”.

6 (2) COORDINATION WITH EXISTING AUTHORI-
7 TIES.—The Secretary may carry out the dredge pilot
8 program authorized by section 1111 of the Water
9 Resources Development Act of 2018 (33 U.S.C.
10 2326 note) in coordination with Federal regional
11 dredge demonstration programs in effect on the date
12 of enactment of this Act.

13 **SEC. 126. AQUATIC ECOSYSTEM RESTORATION FOR ANAD-**
14 **ROMOUS FISH.**

15 (a) ANADROMOUS FISH HABITAT AND PASSAGE.—
16 Section 206 of the Water Resources Development Act of
17 1996 (33 U.S.C. 2330) is amended—

18 (1) in subsection (a), by adding at the end the
19 following:

20 “(3) ANADROMOUS FISH HABITAT AND PAS-
21 SAGE.—

22 “(A) MEASURES.—A project under this
23 section may include measures to improve habi-
24 tat or passage for anadromous fish, including—



**DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
108 ARMY PENTAGON
WASHINGTON, DC 20310-0108**

SACW

October 29, 2021

MEMORANDUM FOR COMMANDING GENERAL, U.S. ARMY CORPS OF ENGINEERS

SUBJECT: Implementation Guidance for Section 125(c) of the Water Resources Development Act of 2020, Dredged Material Management Plans

1. Section 125(c) of the Water Resources Development Act (WRDA) of 2020 requires that the District Commander of any district that obtains dredged material from construction or operation and maintenance (O&M) of a water resources development project, provide the Secretary with a 5-year dredged material management plan (DMMP) no later than 1 year after the date of WRDA 2020 enactment. Plans will be completed at 100 percent Federal expense and done in coordination with relevant State agencies and stakeholders. Plans will be updated and submitted to the Secretary annually. Further, Section 125(c) details the scope of each plan developed under this section and requires public comment and public availability. The Secretary will transmit all plans to Congress. Plans developed under Section 125(c) will be in addition to regional sediment management plans prepared under Section 204(a) of WRDA 1992 and are not subject to limitations in Section 204(g) of WRDA 1992. A copy of Section 125(c) of WRDA 2020 is enclosed.

2. This Section is applicable to Headquarters and all Divisions, Districts, and Field Offices of the U.S. Army Corps of Engineers (Corps) with civil works responsibilities.

3. Definitions. The following definitions apply to this guidance:

a. As defined in 33 C.F.R. 335.7, the term "Federal standard" means the dredged material disposal alternative or alternatives identified by the Corps which represent the least costly alternatives consistent with sound engineering practices and meeting the environmental standards established by the 404(b)(1) evaluation process or ocean dumping criteria.

b. Non-Federal interest. As defined in section 221(b) of the Flood Control Act of 1970 (42 U.S.C. 1962d-5b(b)), the term "non-Federal interest" means a legally constituted public body (including an Indian Tribe and a tribal organization) or a nonprofit entity with the consent of the affected local government, that has the full authority and capability to perform the terms of the agreement, and to pay damages, if necessary, in case of failure to perform.

4. Preparation of 5-year DMMPs by District Commanders is dependent upon the appropriations of funds. No work will be conducted to meet the 5-year DMMP

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SUBJECT: Implementation Guidance for Section 125(c) of the Water Resources Development Act of 2020, Dredged Material Management Plans

requirement until funding has been appropriated. Subject to the availability of funds, the 5-year DMMPs will be updated on an annual basis following initial preparation. The 5-year DMMPs will be prepared at full Federal expense.

5. The District Commander is responsible for preparation of the 5-year DMMP. The 5-year DMMP will adhere generally to the Technical Framework outlined in Section V of Engineer Manual (EM) 1110-2-5025, Dredging and Dredged Material Management and will include following:

a. A dredged material sediment budget for each watershed or littoral system within the district.

b. An assessment of the dredging needs for the construction or O&M of water resources development projects anticipated to be carried out within the district's civil works Area of Responsibility (AOR) during the 5-year period covered by the DMMP.

c. Identification and evaluation of alternatives for dredged material placement. Alternatives will include:

(1) The placement of dredged material to construct or periodically renourish water resources development projects anticipated to be carried out within the district during such 5-year period covered by the DMMP.

(2) Opportunities to use dredged material during the 5-year period covered by the DMMP for the full range of beneficial uses described in EM 1110-2-5025.

(3) Open-water placement.

(4) Confined placement.

d. A Real Estate Plan analyzing the required real estate interests in accordance with current policy as described in ER 405-1-12.

6. The 5-year DMMP will characterize the socioeconomic and environmental impacts and benefits of each placement alternative determined to be reasonable. An alternative will be considered reasonable if it is technically feasible and environmentally acceptable. The DMMP will identify the following plans:

a. The alternative, or combination of alternatives, that constitutes the Federal standard for the dredging of water resources development projects within the district's AOR during the 5-year period covered by the DMMP. Selection of the Federal standard will consider any expected efficiencies or cost savings from aligning and coordinating the dredging needs and dredged material disposal capacity of multiple projects within the district's AOR.

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SUBJECT: Implementation Guidance for Section 125(c) of the Water Resources Development Act of 2020, Dredged Material Management Plans

b. Technically feasible, environmentally acceptable opportunities for beneficial use of dredged material that may be pursued during the 5-year period if the incremental costs in excess of the Federal standard are funded by a non-Federal interest, another water resource development project, or another Federal agency.

c. Section 204(d) placements and Section 204 projects that may be pursued during the 5-year period subject to the availability of adequate Federal funding.

7. The District Commander will ensure that the Dredge Information System (DIS) is maintained with accurate dredging and placement data to support precise tracking of beneficial use and dredge material management planning.

8. On an annual basis, by 31 December the Director of Civil Works will consolidate the 5-year DMMPs from all reporting District Commanders and provide the DMMPs to the Assistant Secretary of the Army (Civil Works) (ASA (CW)) for review and transmittal to Congress. Each District Commander will post the district's DMMPs to the district's public-facing website upon transmitting a plan to the Division Commander for transmittal to the ASA (CW) through Corps headquarters.

9. The 5-year DMMP will be developed with the input of non-Federal interests, stakeholders, and the public. Annually while developing the 5-year DMMPs, District Commanders will solicit public input for a minimum of 30-days. As a part of the public comment effort stakeholders will be asked to provide proposals for potential beneficial use placement opportunities.

10. Under no circumstances shall this policy be modified, supplemented, amended, or rescinded, directly or indirectly, nor shall the Corps take action not in accordance with the direction herein, without the express written approval from the ASA(CW). This guidance shall be transmitted to the appropriate Corps Division and District Commanders and posted to the Corps WRDA website within five business days of receipt (written or electronic) from this office. Guidance shall be transmitted and posted as is and without additional guidance attached.

11. Questions regarding this implementation guidance should be directed to Gib Owen, Office of the ASA (CW), at gib.a.owen.civ@army.mil or 703-695-4641.



Encl

JAIME A. PINKHAM
Acting Assistant Secretary of the Army
(Civil Works)

CF:
DCG-CEO
DCW

SUBJECT: Implementation Guidance for Section 125(c) of the Water Resources Development Act of 2020, Dredged Material Management Plans

Section 125(c) Five-Year Regional Dredged Material Management Plans

(1) In general. Not later than 1 year after the date of enactment of this Act, and annually thereafter, the District Commander of each district of the Corps of Engineers that obtains dredged material through the construction or operation and maintenance of a water resources development project shall, at Federal expense, develop and submit to the Secretary a 5-year dredged material management plan in coordination with relevant State agencies and stakeholders.

(2) Scope. Each plan developed under this subsection shall include -

(A) a dredged material budget for each watershed or littoral system within the district;

(B) an estimate of the amount of dredged material likely to be obtained through the construction or operation and maintenance of all water resources development projects projected to be carried out within the district during the 5-year period following submission of the plan, and the estimated timing for obtaining such dredged material;

(C) an identification of potential water resources development projects projected to be carried out within the district during such 5-year period that are suitable for, or that require, the placement of dredged material, and an estimate of the amount of dredged material placement capacity of such projects;

(D) an evaluation of -

- (i) the suitability of the dredged material for a full range of beneficial uses; and
- (ii) the economic and environmental benefits, efficiencies, and impacts (including the effects on living coral) of using the dredged material for beneficial uses, including, in the case of beneficial use activities that involve more than one water resources development project, the benefits, efficiencies, and impacts that result from the combined activities;

(E) the district-wide goals for beneficial use of the dredged material, including any expected cost savings from aligning and coordinating multiple projects (including projects across Corps districts) in the use of the dredged material; and

(F) a description of potential beneficial use projects identified through stakeholder solicitation and coordination.

(3) Public comment. In developing each plan under this subsection, each District Commander shall provide notice and an opportunity for public comment, including a solicitation for stakeholders to identify beneficial use projects, in order to ensure, to the extent practicable, that beneficial use of dredged material is not foregone in a particular fiscal year or dredging cycle.

SUBJECT: Implementation Guidance for Section 125(c) of the Water Resources Development Act of 2020, Dredged Material Management Plans

(4) Public availability. Upon submission of each plan to the Secretary under this subsection, each District Commander shall make the plan publicly available, including on a publicly available website.

(5) Transmission to congress. As soon as practicable after receiving a plan under subsection (a), the Secretary shall transmit the plan to Congress.

(6) Regional sediment management plans. A plan developed under this section -
(A) shall be in addition to regional sediment management plans prepared under section 204(a) of the Water Resources Development Act of 1992 (33 U.S.C. 2326(a)); and

(B) shall not be subject to the limitations in section 204(g) of the Water Resources Development Act of 1992 (33 U.S.C. 2326(g)).

ATTACHMENT F

UMR Spills Group 2021-2027 Strategic Plan Draft (11/23/2021)

(F-1 to F-14)

A Strategic Plan for the

Upper Mississippi River
Hazardous Spills Coordination Group
2021 – 2027

Integrated Planning, Coordination, Preparedness, and Spill Response



UMR Hazardous Spills Coordination Group

2021 – 2027 Strategic Plan

Preamble

Upper Mississippi River Basin Association (UMRBA)

The Upper Mississippi River Basin Association (UMRBA) is the 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 UMRBA, the states work together and 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 (UMR) 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.

Since 1989, the UMRBA has provided staff support for the UMR Hazardous Spills Coordination Group (Spills Group), which includes representatives of state and federal agencies who play a role in contingency planning and spill response on the river. The UMR Spills Group provides a forum for interagency coordination, serves as a voice for the region's spill responders on various issues, and helps in the preparation and execution of training activities.

The UMR Spills Group maintains the Upper Mississippi River Spill Response Plan and Resource Manual ([UMR Spill Plan](#)), which has been adopted by its state and federal agency members. The UMR Spill Plan is designed to coordinate state and federal agency response to spills on the interstate UMR. It establishes several UMR-specific protocols and policies, including notifications. The plan complements broader regional and national contingency plans by addressing issues and concerns related specifically to spill response on the Upper Mississippi River. The plan includes a resource manual that contains information about potential spill sources, vulnerable resources, and response assets in the river corridor.

UMRBA also engages in an extensive contingency planning and mapping effort funded largely by the USEPA Region 5. Products include geographic information system-based sensitivity atlases for the Region 5 states (Illinois, Minnesota, and Wisconsin) and contingency plans for several metropolitan areas and National Wildlife Refuges in the region. Spill Response Plans developed for the UMR have been created for many of the pools; a pool is a part of the river from one lock and dam to the next. UMR Spills Group members have been important contributors to the development of these plans.

2021 – 2027 Strategic Plan Purpose

This strategic plan states the cooperative priorities of the UMR Spills Group for the period 2021-2027. The plan contains elements in a range from general themes to specific work tasks. These elements outline the Spills Group's priorities and are intended to guide members' collaborative work in preparation, planning, and response to spills impacting the Upper Mississippi River. It is intended that this strategic plan will be revisited periodically to adjust priorities as member organizations change their internal focus, staff capacity, or other factors that affect Spills Group work.

Geographic Scope

The UMR Spills Group focuses primarily on the Upper Mississippi River from the confluence of the Ohio River upstream to the Minneapolis-St. Paul metropolitan area. Notifications are also made for spill events on tributaries if the responding agency determines that the release may affect the main stem of the river. Federal

jurisdictions within this geographic area include the U.S. Coast Guard 8th District, U.S. Environmental Protection Agency (USEPA) Regions 5 and 7, U.S. Fish & Wildlife Service (USFWS) Region 3, and U.S. Army Corps of Engineers Mississippi Valley Division. Tribal jurisdictions within the area include the Shakopee Mdewakanton Sioux Community and Prairie Island Indian Community. State jurisdictions include the Illinois Environmental Protection Agency, Iowa Department of Natural Resources, Minnesota Pollution Control Agency, Missouri Department of Natural Resources, and the Wisconsin Department of Natural Resources. Additionally, the area comprises sixty counties from the head of navigation in Minnesota to the confluence with the Ohio River.

UMR Spill Response Plan and Resource Manual (UMR Spill Plan):

The UMR Spill Plan is a document designed to coordinate state and federal agency response to spills on the interstate UMR. It establishes several UMR-specific protocols and policies, including a notification protocol. It also includes appendices listing response resources, sensitive human and natural resources, and potential spill sources along the river corridor.

UMR Pool Spill Response Plans

Due to long-standing concerns about spills of oil and hazardous substances onto National Wildlife Refuge System (NWRS) lands along the UMR, the USEPA partnered with USFWS to help enhance spill contingency planning and preparedness in response to spills. The goal of this effort is to create a series of locally-applicable response and planning tools to enhance decision making and improve the quality of spill response in these relatively remote areas. The plans are designed to protect resources, improve communication, and enhance knowledge for river pools. A pool is a reach of the UMR between locks and dams, with the downstream dam giving the pool its name, e.g., Pool 13 runs between Lock and Dam 12 and Lock and Dam 13.

Regional Response Teams (RRT)

The Regional Response Team is a key component of the U.S. federal government's commitment to ensure effective preparedness and response to oil and chemical incidents affecting human health and safety, as well as the environment. As described in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP, 40 CFR part 300), the RRTs are responsible for planning and coordination of regional preparedness, as well as planning and coordination of response actions in support of the Federal On-Scene Coordinator. Among the UMR states, RRT5 covers Illinois, Minnesota, and Wisconsin and RRT7 covers Iowa and Missouri.

UMR Hazardous Spills Coordination Group 2021 – 2027 Strategic Plan Mission Statement

To enhance capabilities of all stakeholders tasked with managing incidents impacting the Upper Mississippi River and immediate tributaries through support of integrated planning, coordination, preparedness, and spill response

UMR Hazardous Spills Coordination Group

2021 – 2027 Strategic Plan

Goal 1

Goal Statement

Develop guidance for stakeholders tasked with managing incidents impacting the UMR to help ensure safe and effective response operations

Strategic Initiative

Support members by maintaining current and relevant planning and reference materials

Objectives

1.A: Update the UMR Spill Response Plan & Resource Manual

Priority: High

Timeline: Start: November 2021
Completion: April 2022

Responsibility: UMRBA

Critical Activities:

- Establish a schedule for plan updates
- Establish a schedule for resource manual updates
- Conduct plan/manual review, report findings, and gather input from Spills Group
 - Review response, clean-up, and inter-jurisdictional policies
 - Make determination on inclusion of Missouri River and major tributaries
- Identify sources and additional mechanisms (i.e., web map application [WMA], field data collection, on-line survey) to gather data
- Coordinate with groups engaged in spill preparedness (i.e., subareas, community awareness and emergency response [CAER] groups, regional response teams [RRT])
- Provide progress updates to UMR Spills Group

Performance Indicators:

- UMRBA assigns update tasks to members
- All members confirm Plan policies are consistent with internal policies or suggest changes to group for consideration
- All members provide UMRBA with updated Resource Manual content for their agency/AOR according to schedule
- Final plan routed to and signed by member agencies

1.B: Maintain existing UMR Pool Spill Response Plans

Priority: Medium

Timeline: Start: December 2021
Completion: March 2022 (pending fair weather and river conditions)

Responsibility: UMRBA

Critical Activities:

- Identify priority pools based on age and hydraulic changes
- Update Incident Action Plan (IAP) contact list
- Identify existing sites for field recon by state or federal partners during normal work
- Identify possible new sites to add or obsolete sites to delete based on changed hydrology
- Hold planning meeting to develop draft response strategy sites
- Coordinate field work to verify all valid sites in pool
- Submit updated plan to Regional Response Teams for USEPA Regions 5 and 7 (RRT5 and RRT7)

Performance Indicators:

- Convene resource trustees and responders for target pool identification
- Convene resource trustees, responders, and oil spill removal organizations (OSROs) for planning meeting
- Schedule and coordinate field day for site verification
- Compile draft response strategies for Spills Group review
- Submit updated plan to RRT5 and RRT7

1.C: Identify and prioritize development of new UMR Pool Spill Response Plans

Priority: Low

Timeline: Start: December 2022
Completion: November 2023
[Note: Pools 24-26 will start November 2021 pending easing of pandemic restrictions]

Responsibility: UMRBA

Critical Activities:

- Identify priority pools
- Hold planning meeting to develop IAP and draft response strategy sites
- Coordinate field work to verify draft sites
- Stakeholder review of IAP and response strategies

- Submit new plan to RRT5 and RRT7

Performance Indicators:

- Convene resource trustees and responders for target pool identification
- Convene resource trustees, responders, and OSROs for planning meeting
- Schedule and coordinate field day for site verification
- Compile draft response strategies and IAP for Spills Group review
- Submit final plan to RRT5 and RRT7

UMR Hazardous Spills Coordination Group

2021 – 2027 Strategic Plan

Goal 2

Goal Statement

Support coordination and communication activities among stakeholders tasked with managing incidents impacting the UMR

Strategic Initiatives

Support members in meeting training and exercise requirements

Develop a standardized incident after-action report

Review a spill notification system and identify enhancements; include private industry and contractors

Review MOUs/MOAs in a place among states, including Emergency Management Assistance Compacts (EMAC) and spill response resource packages available from states

Identify opportunities to expand collaboration

Objectives

2.A: Formalize and improve notification during real incidents and notification drills

Priority: High

Timeline: Start Date: November 2021
Completion Date: April 2022

Responsibility: All

Critical Activities:

- Develop complete notification list for Spills Group
- Set timeline for members to update internal notification lists
- Develop schedule for regular contact information updates to push to members
- UMRBA cooperates with USCG and USEPA to conduct periodic notification drills

Performance Indicators:

- Members provide key contacts to UMRBA
- UMRBA compiles contact updates according to schedule for distribution to Spills Group
- Members push complete updated contact list to internal dispatch
- Group determines frequency and types of notification drills to hold

2.B: Review existing agreements and propose new mutual aid agreements

Priority: High

Timeline: Start Date: December 2021
 Completion Date: April 2022

Responsibility: States

Critical Activities:

- Summarize existing MOAs and MOUs among members
- Determine other agreements that could support response work among members
- Partner agencies craft agreement language
- Partner agencies route draft agreement for internal approval

Performance Indicators:

- Summary of existing agreements is shared within group
- Group completes list of any new agreements that would support mutual work
- Appropriate agencies sign off or approve new agreements
- Final new agreements are added to UMR Spill Plan

2.C: Organize exercises and training for members and associated groups, including industry.

Priority: Low for first year

Timeline: Start Date: April 2022
 Completion Date: December 2022

Responsibility: All

Critical Activities:

- Group advertises exercises or training for members or other affiliated groups
- Determine frequency of training or exercise events group will support
- UMRBA supports development of events held by members

Performance Indicators:

- UMRBA posts advertisement for an event on its website and distributes to members
- UMRBA and members provide in-kind support for development of events
- Group completes an exercise or training event on schedule

2.D: Develop a standardized incident after-action report (AAR)

Priority: High

Timeline: Start Date: November 2021
 Completion Date: April 2022

Responsibility: UMRBA, states

Critical Activities:

- Identify key components of an AAR that would benefit members by considering common needs and incident trends
- Develop standard form that members can use to share incident information and lessons learned, including lost recreational use and resource impacts.

Performance Indicators:

- Convene to discuss information priorities and situational needs
- UMRBA develops draft AAR form based on a Homeland Security Exercise and Evaluation Program HSEEP or state templates already in use
- Group approves AAR template for optional use within Spills Group

UMR Hazardous Spills Coordination Group

2021 – 2027 Strategic Plan

Goal 3

Goal Statement

Garner participation from additional stakeholder groups that would support response efforts during incidents impacting the UMR

Strategic Initiative

Support outside groups in meeting exercise and training requirements

Expand membership of the Spills Group

Objectives

3.A: Support exercises developed and hosted by industry partners. *(Passive role for Spills Group)*

Priority: Low

Timeline: Start Date: November 2021
Completion Date: open

Responsibility: UMRBA, USEPA, USCG

Critical Activities:

- Identify industry partners along UMR who could benefit from Spills Group support to meet regulatory exercise requirements
- Coordinate with industry to support exercise development or outreach
- Coordinate state or federal partners with industry to provide exercise oversight or observation

Performance Indicators:

- Select industry partner for exercise support
- Determine supporting Spills Group members based on jurisdictions
- UMRBA support industry in scenario and document development

3.B: Reach out to other agencies or entities with an interest in UMR response.

Priority: Low

Timeline: Start Date: November 2021
Completion Date: annually

Responsibility: UMRBA

Critical Activities:

- Identify federal, tribal, state, or local agencies with interest in river response for releases of non-Oil Pollution Act of 1990 (OPA)-related materials
- Identify industry sectors or public utilities with a vested interest in the UMR
- Reach out to agencies to invite discussions about how they could benefit from participating with the Spills Group
- Coordinate with members to identify potential partnerships or planning work to address broader scope of spills

Performance Indicators:

- Convene discussion to identify related response activities and agencies or organizations
- Include new partners in relevant Spills Group activities

3.C: Consider expanding geographic scope of group to include tributaries or counties further from the UMR.

Priority: None

[Note: On its August 17, 2021 call, the UMR Spills Group decided to postpone a recommendation to expand to situational notification based on best judgment. Regional planning work on worst-case discharges and time of travel analyses may reprioritize this objective in the future.]

Timeline: Start Date:
Completion Date:

Responsibility: UMRBA, others

Critical Activities:

- Reach out to county emergency managers along tributaries that impact the UMR to gauge interest in taking part in the group
- Identify potential industry participants in the expanded geography
- Consider implications of expansion to protocols and activities

Performance Indicators:

- Convene discussion to identify agencies, partners, and impacts of a broader geographic scope

UMR Hazardous Spills Coordination Group

2021 – 2027 Strategic Plan

Goal 4

Goal Statement

Ensure sufficient resources to maintain services and attain the goals of this plan

Strategic Initiative

Seek alternative funding sources for related work that supports response activities on the UMR

Objectives

4.A: Identify potential new funding sources for achieving goals within the group and with other entities.

Priority: Low

Timeline: Start Date: November 2021
Completion Date: annually

Responsibility: All

Critical Activities:

- Identify smaller-scope programs or projects (e.g., river stages at which a boat access is useable) with response-supporting targets that could be replicated throughout the UMR.
- Apply for funding to carry out projects on wider scale.
- Convene members to coordinate project work and determine schedules.

Performance Indicators:

- Provide summary of related or parallel projects the group could consider pursuing.
- Secure grant or contract funding to perform project tasks.
- Update plans, data repositories, or other relevant entities with resulting information.

UMR Hazardous Spills Coordination Group

2021 – 2027 Strategic Plan

Goal 5

Goal Statement

Identify technology and resources to advance group interests in the future

Strategic Initiative

Keep technologies and policies used by the Spills Group current

Objectives

5.A: Support the development of a UMR-centric online data viewer.

Priority: High

Timeline: Start Date: November 2021
Completion Date: open-ended (viewer is currently in development by USEPA Region 7; Spills Group support will be clarified as viewer becomes available)

Responsibility: UMRBA

Critical Activities:

- Collaborate with agencies and industry involved in planning the development of an online data and mapping resource.
- Identify components of the data viewer that can be updated or maintained by members.
- Develop a schedule of data updates to ensure currency of data in the viewer.
- Promote use of the viewer among members

Performance Indicators:

- Participate in conference calls or meetings to assist in data viewer development.
- Assign update tasks to appropriate agencies or partners according to the agreed-upon schedule.

5.B: Ensure that the Spills Group is consistent with state and federal members' goals and targets for adapting to climate change.

Priority: Medium

Timeline: Start Date: April 2022
Completion Date: December 2022 (UMRBA to present topic at spring meeting and determine action items then)

Responsibility: UMRBA, states, federal partners

Critical Activities:

- Identify impacts of changing climate on response on the Mississippi River

- Present science of changing climate and weather patterns and their effects on the UMR
- Clarify member agency positions on adapting to climate change

Performance Indicators:

- Convene to discuss impacts observed through science or field experience

Other Ongoing Activities

The Spills Group identified the following topics to continue to implement, but not address in this Strategic Plan:

- Connecting to sub-areas, RRTs, and CAER groups
- Elevate awareness of importance of UMR to enhance state response programs' capacity
- Evaluate interest and practicality of expanding the group's geographic scope

ATTACHMENT G

Additional Items

- **Future Meeting Schedule** *(G-1)*
- **Frequently Used Acronyms (12/21/2017)** *(G-2 to G-7)*

**QUARTERLY MEETINGS
FUTURE MEETING SCHEDULE**

| MAY 2022 | |
|----------------------------------|---|
| <u>Location to be determined</u> | |
| May 24 | UMRBA Quarterly Meeting |
| May 25 | UMRR Coordinating Committee Quarterly Meeting |

| AUGUST 2022 | |
|----------------------------------|---|
| <u>Location to be determined</u> | |
| August 9 | UMRBA Quarterly Meeting |
| August 10 | UMRR Coordinating Committee Quarterly Meeting |

Acronyms Frequently Used on the Upper Mississippi River System

| | |
|---------|---|
| AAR | After Action Report |
| A&E | Architecture and Engineering |
| ACRCC | Asian Carp Regional Coordinating Committee |
| AFB | Alternative Formulation Briefing |
| AHAG | Aquatic Habitat Appraisal Guide |
| AHRI | American Heritage Rivers Initiative |
| AIS | Aquatic Invasive Species |
| ALC | American Lands Conservancy |
| ALDU | Aquatic Life Designated Use(s) |
| AM | Adaptive Management |
| ANS | Aquatic Nuisance Species |
| AP | Advisory Panel |
| APE | Additional Program Element |
| ARRA | American Recovery and Reinvestment Act |
| ASA(CW) | Assistant Secretary of the Army for Civil Works |
| A-Team | Analysis Team |
| ATR | Agency Technical Review |
| AWI | America's Watershed Initiative |
| AWO | American Waterways Operators |
| AWQMN | Ambient Water Quality Monitoring Network |
| BA | Biological Assessment |
| BATIC | Build America Transportation Investment Center |
| BCR | Benefit-Cost Ratio |
| BMPs | Best Management Practices |
| BO | Biological Opinion |
| CAP | Continuing Authorities Program |
| CAWS | Chicago Area Waterways System |
| CCC | Commodity Credit Corporation |
| CCP | Comprehensive Conservation Plan |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CEQ | Council on Environmental Quality |
| CFR | Code of Federal Regulations |
| CG | Construction General |
| CIA | Computerized Inventory and Analysis |
| CMMP | Channel Maintenance Management Plan |
| COE | Corps of Engineers |
| COPT | Captain of the Port |
| CPUE | Catch Per Unit Effort |
| CRA | Continuing Resolution Authority |
| CREP | Conservation Reserve Enhancement Program |
| CRP | Conservation Reserve Program |
| CSP | Conservation Security Program |
| CUA | Cooperative Use Agreement |
| CWA | Clean Water Act |
| DALS | Department of Agriculture and Land Stewardship |
| DED | Department of Economic Development |
| DEM | Digital Elevation Model |

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|----------|--|
| DET | District Ecological Team |
| DEWS | Drought Early Warning System |
| DMMP | Dredged Material Management Plan |
| DNR | Department of Natural Resources |
| DO | Dissolved Oxygen |
| DOA | Department of Agriculture |
| DOC | Department of Conservation |
| DOER | Dredging Operations and Environmental Research |
| DOT | Department of Transportation |
| DPR | Definite Project Report |
| DQC | District Quality Control/Quality Assurance |
| DSS | Decision Support System |
| EA | Environmental Assessment |
| ECC | Economics Coordinating Committee |
| EEC | Essential Ecosystem Characteristic |
| EIS | Environmental Impact Statement |
| EMAP | Environmental Monitoring and Assessment Program |
| EMAP-GRE | Environmental Monitoring and Assessment Program-Great Rivers Ecosystem |
| EMP | Environmental Management Program [Note: Former name of Upper Mississippi River Restoration Program.] |
| EMP-CC | Environmental Management Program Coordinating Committee |
| EO | Executive Order |
| EPA | Environmental Protection Agency |
| EPR | External Peer Review |
| EQIP | Environmental Quality Incentives Program |
| ER | Engineering Regulation |
| ERDC | Engineering Research & Development Center |
| ESA | Endangered Species Act |
| EWMN | Early Warning Monitoring Network |
| EWP | Emergency Watershed Protection Program |
| FACA | Federal Advisory Committee Act |
| FEMA | Federal Emergency Management Agency |
| FERC | Federal Energy Regulatory Commission |
| FDR | Flood Damage Reduction |
| FFS | Flow Frequency Study |
| FONSI | Finding of No Significant Impact |
| FRM | Flood Risk Management |
| FRST | Floodplain Restoration System Team |
| FSA | Farm Services Agency |
| FTE | Full Time Equivalent |
| FWCA | Fish & Wildlife Coordination Act |
| FWIC | Fish and Wildlife Interagency Committee |
| FWS | Fish and Wildlife Service |
| FWWG | Fish and Wildlife Work Group |
| FY | Fiscal Year |
| GAO | Government Accountability Office |
| GEIS | Generic Environmental Impact Statement |
| GI | General Investigations |

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|--------|---|
| GIS | Geographic Information System |
| GLC | Governors Liaison Committee |
| GLC | Great Lakes Commission |
| GLMRIS | Great Lakes and Mississippi River Interbasin Study |
| GPS | Global Positioning System |
| GREAT | Great River Environmental Action Team |
| GRP | Geographic Response Plan |
| HAB | Harmful Algal Bloom |
| HEL | Highly Erodible Land |
| HEP | Habitat Evaluation Procedure |
| HNA | Habitat Needs Assessment |
| HPSF | HREP Planning and Sequencing Framework |
| HQSACE | Headquarters, USACE |
| H.R. | House of Representatives |
| HREP | Habitat Rehabilitation and Enhancement Project |
| HU | Habitat Unit |
| HUC | Hydrologic Unit Code |
| IBA | Important Bird Area |
| IBI | Index of Biological (Biotic) Integrity |
| IC | Incident Commander |
| ICS | Incident Command System |
| ICWP | Interstate Council on Water Policy |
| IDIQ | Indefinite Delivery/Indefinite Quantity |
| IEPR | Independent External Peer Review |
| IIA | Implementation Issues Assessment |
| IIFO | Illinois-Iowa Field Office (formerly RIFO - Rock Island Field Office) |
| ILP | Integrated License Process |
| IMTS | Inland Marine Transportation System |
| IRCC | Illinois River Coordinating Council |
| IRPT | Inland Rivers, Ports & Terminals |
| IRTC | Implementation Report to Congress |
| IRWG | Illinois River Work Group |
| ISA | Inland Sensitivity Atlas |
| IWR | Institute for Water Resources |
| IWRM | Integrated Water Resources Management |
| IWTF | Inland Waterways Trust Fund |
| IWUB | Inland Waterways Users Board |
| IWW | Illinois Waterway |
| L&D | Lock(s) and Dam |
| LC/LU | Land Cover/Land Use |
| LDB | Left Descending Bank |
| LERRD | Lands, Easements, Rights-of-Way, Relocation of Utilities or Other Existing Structures, and Disposal Areas |
| LiDAR | Light Detection and Ranging |
| LMR | Lower Mississippi River |
| LMRCC | Lower Mississippi River Conservation Committee |
| LOI | Letter of Intent |
| LTRM | Long Term Resource Monitoring |

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|-----------|---|
| M-35 | Marine Highway 35 |
| MAFC | Mid-America Freight Coalition |
| MARAD | U.S. Maritime Administration |
| MARC 2000 | Midwest Area River Coalition 2000 |
| MICRA | Mississippi Interstate Cooperative Resource Association |
| MIPR | Military Interdepartmental Purchase Request |
| MMR | Middle Mississippi River |
| MMRP | Middle Mississippi River Partnership |
| MNRG | Midwest Natural Resources Group |
| MOA | Memorandum of Agreement |
| MoRAST | Missouri River Association of States and Tribes |
| MOU | Memorandum of Understanding |
| MRAPS | Missouri River Authorized Purposes Study |
| MRBI | Mississippi River Basin (Healthy Watersheds) Initiative |
| MRC | Mississippi River Commission |
| MRCC | Mississippi River Connections Collaborative |
| MRCTI | Mississippi River Cities and Towns Initiative |
| MRRC | Mississippi River Research Consortium |
| MR&T | Mississippi River and Tributaries (project) |
| MSP | Minimum Sustainable Program |
| MVD | Mississippi Valley Division |
| MVP | St. Paul District |
| MVR | Rock Island District |
| MVS | St. Louis District |
| NAS | National Academies of Science |
| NAWQA | National Water Quality Assessment |
| NCP | National Contingency Plan |
| NIDIS | National Integrated Drought Information System (NOAA) |
| NEBA | Net Environmental Benefit Analysis |
| NECC | Navigation Environmental Coordination Committee |
| NED | National Economic Development |
| NEPA | National Environmental Policy Act |
| NESP | Navigation and Ecosystem Sustainability Program |
| NETS | Navigation Economic Technologies Program |
| NGO | Non-Governmental Organization |
| NGRREC | National Great Rivers Research and Education Center |
| NICC | Navigation Interests Coordinating Committee |
| NPDES | National Pollution Discharge Elimination System |
| NPS | Non-Point Source |
| NPS | National Park Service |
| NRC | National Research Council |
| NRCS | Natural Resources Conservation Service |
| NRDAR | Natural Resources Damage Assessment and Restoration |
| NRT | National Response Team |
| NSIP | National Streamflow Information Program |
| NWI | National Wetlands Inventory |
| NWR | National Wildlife Refuge |
| O&M | Operation and Maintenance |

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|---------|--|
| OHW | Ordinary High Water Mark |
| OMB | Office of Management and Budget |
| OMRR&R | Operation, Maintenance, Repair, Rehabilitation, and Replacement |
| OPA | Oil Pollution Act of 1990 |
| ORSANCO | Ohio River Valley Water Sanitation Commission |
| OSC | On-Scene Coordinator |
| OSE | Other Social Effects |
| OSIT | On Site Inspection Team |
| P3 | Public-Private Partnerships |
| PA | Programmatic Agreement |
| PAS | Planning Assistance to States |
| P&G | Principles and Guidelines |
| P&R | Principles and Requirements |
| P&S | Plans and Specifications |
| P&S | Principles and Standards |
| PCA | Pollution Control Agency |
| PCA | Project Cooperation Agreement |
| PCX | Planning Center of Expertise |
| PDT | Project Delivery Team |
| PED | Preliminary Engineering and Design |
| PgMP | Program Management Plan |
| PILT | Payments In Lieu of Taxes |
| PIR | Project Implementation Report |
| PL | Public Law |
| PMP | Project Management Plan |
| PORT | Public Outreach Team |
| PPA | Project Partnership Agreement |
| PPT | Program Planning Team |
| QA/QC | Quality Assurance/Quality Control |
| RCRA | Resource Conservation and Recovery Act |
| RCP | Regional Contingency Plan |
| RCPP | Regional Conservation Partnership Program |
| RDB | Right Descending Bank |
| RED | Regional Economic Development |
| RIFO | Rock Island Field Office (now IIFO - Illinois-Iowa Field Office) |
| RM | River Mile |
| RP | Responsible Party |
| RPT | Reach Planning Team |
| RRAT | River Resources Action Team |
| RRCT | River Resources Coordinating Team |
| RRF | River Resources Forum |
| RRT | Regional Response Team |
| RST | Regional Support Team |
| RTC | Report to Congress |
| S. | Senate |
| SAV | Submersed Aquatic Vegetation |
| SDWA | Safe Drinking Water Act |
| SEMA | State Emergency Management Agency |

| | |
|---------|---|
| SET | System Ecological Team |
| SONS | Spill of National Significance |
| SOW | Scope of Work |
| SRF | State Revolving Fund |
| SWCD | Soil and Water Conservation District |
| T&E | Threatened and Endangered |
| TEUs | twenty-foot equivalent units |
| TIGER | Transportation Investment Generating Economic Recovery |
| TLP | Traditional License Process |
| TMDL | Total Maximum Daily Load |
| TNC | The Nature Conservancy |
| TSP | Tentatively selected plan |
| TSS | Total Suspended Solids |
| TVA | Tennessee Valley Authority |
| TWG | Technical Work Group |
| UMESC | Upper Midwest Environmental Sciences Center |
| UMIMRA | Upper Mississippi, Illinois, and Missouri Rivers Association |
| UMR | Upper Mississippi River |
| UMRBA | Upper Mississippi River Basin Association |
| UMRBC | Upper Mississippi River Basin Commission |
| UMRCC | Upper Mississippi River Conservation Committee |
| UMRCP | Upper Mississippi River Comprehensive Plan |
| UMR-IWW | Upper Mississippi River-Illinois Waterway |
| UMRNWFR | Upper Mississippi River National Wildlife and Fish Refuge |
| UMRR | Upper Mississippi River Restoration Program [Note: Formerly known as Environmental Management Program.] |
| UMRR CC | Upper Mississippi River Restoration Program Coordinating Committee |
| UMRS | Upper Mississippi River System |
| UMWA | Upper Mississippi Waterway Association |
| USACE | U.S. Army Corps of Engineers |
| USCG | U.S. Coast Guard |
| USDA | U.S. Department of Agriculture |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| VTC | Video Teleconference |
| WCI | Waterways Council, Inc. |
| WES | Waterways Experiment Station (replaced by ERDC) |
| WHAG | Wildlife Habitat Appraisal Guide |
| WHIP | Wildlife Habitat Incentives Program |
| WIIN | Water Infrastructure Improvements for the Nation Act |
| WLMTF | Water Level Management Task Force |
| WQ | Water Quality |
| WQEC | Water Quality Executive Committee |
| WQTF | Water Quality Task Force |
| WQS | Water Quality Standard |
| WRDA | Water Resources Development Act |
| WRP | Wetlands Reserve Program |
| WRRDA | Water Resources Reform and Development Act |