

October 24, 2023



Upper Mississippi River
Basin Association

168th Quarterly Meeting

Agenda
with
Background
and
Supporting
Materials

Hampton Inn-Gateway Arch Downtown
St. Louis, Missouri



Upper Mississippi River Basin Association

October 24, 2023

Agenda

Time	Topic	Presenter
10:00 a.m.	Call to Order and Introductions	<i>Rick Pohlman, Illinois DNR</i>
10:05	A1-12 Approval of Minutes of August 8, 2023 Meeting and September 22, 2023 Meeting	
10:10	B1-23 Executive Director's Report	<i>Kirsten Wallace, UMRBA</i>
10:30	C1 UMRBA Water Quality Program Report	<i>Glenn Skuta, Minnesota DNR</i>
11:10	D1-3 USFWS Nature-Based Projects in the Upper Mississippi River System Floodplain	<i>Sabrina Chandler, USFWS and UMRBA Member States</i>
11:40	E1-7 Upper Mississippi River Levee Safety Act	<i>Bob Sinkler, UMIMRA</i>
12:00 noon	Lunch	
1:00 p.m.	Drought <ul style="list-style-type: none">▪ State and Federal Agency Management Efforts▪ UMRBA Water Availability Cumulative Impact Assessment	<i>UMRBA Board Members and Federal Liaisons</i> <i>Erin Spry, UMRBA</i>
2:00	F1-13 Missouri River Flood Risk and Resilience Study <ul style="list-style-type: none">▪ Status Update and Planned Next Steps▪ Flow Frequency Analysis Results	<i>Colleen Robers, USACE and Erin Fanning, Missouri DNR</i>
2:30	Break	
2:45	G1-5 Mississippi River Cities and Towns Initiative Proposals <ul style="list-style-type: none">▪ Mississippi River Compact▪ Safeguarding the Mississippi River Together (SMRT) Act	<i>Mayor Representative, MRCTI and Saskia Pardaans, Embassy of the Kingdom of the Netherlands</i>
3:15	H1-8 Administrative Issues <ul style="list-style-type: none">▪ Future Meeting Schedule	
3:30 p.m.	Adjourn	

ATTACHMENT A

Minutes

- Minutes of the August 8, 2023 UMRBA Quarterly Meeting
(A-1 to A-10)
- Minutes of the September 22, 2023 UMRBA Meeting (A-11 to A-12)

**Draft
Minutes of the 167th Quarterly Meeting
of the
Upper Mississippi River Basin Association**

**August 8, 2023
St. Paul, Minnesota**

Rick Pohlman called the meeting to order at 9:30 a.m. Participants were as follows:

UMRBA Representatives and Alternates

Rick Pohlman	Illinois Department of Natural Resources
Loren Wobig	Illinois Department of Natural Resources (Virtual)
Chad Craycraft	Illinois Department of Natural Resources
Tim Hall	Iowa Department of Natural Resources
Jake Hansen	Iowa Department of Agriculture and Land Stewardship
Grant Wilson	Minnesota Department of Natural Resources
Patrick Phenow	Minnesota Department of Transportation (Virtual)
Chris Weiberg	Missouri Department of Natural Resources
Chris Klenklen	Missouri Department of Agriculture
Matt Vitello	Missouri Department of Conservation (Virtual)
Jim Fischer	Wisconsin Department of Natural Resources

Federal UMRBA Liaisons

Brian Chewning	U.S. Army Corps of Engineers (Virtual)
Mark Gaikowski	U.S. Geological Survey, Midcontinent Region
Sabrina Chandler	U.S. Fish and Wildlife Service, Refuges

Others in Attendance

BJ Murray	Illinois Department of Transportation (Virtual)
Brian McCoy	Illinois Department of Transportation (Virtual)
Kirk Hansen	Iowa Department of Natural Resources (Virtual)
Dave Bierman	Iowa Department of Natural Resources (Virtual)
Vanessa Perry	Minnesota Department of Natural Resources
Neil Rude	Minnesota Department of Natural Resources (Virtual)
Ken Henderson	Missouri Department of Agriculture (Virtual)
Erin Fanning	Missouri Department of Natural Resources
Tim Anderson	Wisconsin Department of Agriculture
Wade Strickland	Wisconsin Department of Natural Resources
Scott Ropke	Wisconsin Department of Natural Resources
Jayson Schrank	Wisconsin Department of Natural Resources
Mike Halsted	Wisconsin Department of Transportation (Virtual)
Joey Windham	U.S. Army Corps of Engineers, MVD (Virtual)
Samantha Thompson	U.S. Army Corps of Engineers, MVD (Virtual)
Col. Eric Swenson	U.S. Army Corps of Engineers, MVP

John Henderson	U.S. Army Corps of Engineers, MVP (Virtual)
Bob Stanick	U.S. Army Corps of Engineers, MVP
Kristen Moe	U.S. Army Corps of Engineers, MVP (Virtual)
Nate Wallerstedt	U.S. Army Corps of Engineers, MVP
Col. Jesse Curry	U.S. Army Corps of Engineers, MVR
Marshall Plumley	U.S. Army Corps of Engineers, MVR
Lance Engle	U.S. Army Corps of Engineers, MVS (Virtual)
Shawn Sullivan	U.S. Army Corps of Engineers, MVS (Virtual)
John Remus	U.S. Army Corps of Engineers, Northwest Division (Virtual)
Chuck Thieling	U.S. Army Corps of Engineers, ERDC (Virtual)
Richard Vaughn	U.S. Department of Agriculture, NRCS (Virtual)
Zach Leibowitz	U.S. Environmental Protection Agency, Region 7 (Virtual)
Steve Schaff	U.S. Environmental Protection Agency, Region 7 (Virtual)
Amy Shields	U.S. Environmental Protection Agency, Region 7 (Virtual)
Kraig McPeck	U.S. Fish and Wildlife Service (Virtual)
Matt Mangan	U.S. Fish and Wildlife Service (Virtual)
Laura Muzal	U.S. Fish and Wildlife Service (Virtual)
Jennifer Lacey	U.S. Geological Survey, Midcontinent Region
JC Nelson	U.S. Geological Survey
Jennifer Dieck	U.S. Geological Survey, UMESC (Virtual)
Steve Buan	National Oceanic and Atmospheric Administration, NWS (Virtual)
Doug Daigle	[No Affiliation]
Olivia Dorothy	American Rivers
Kim Lutz	America's Watershed Initiative (Virtual)
Lindsay Brice	Audubon
Brent Newman	Audubon
Dale Buckholtz	Canadian Pacific Railroad
Tony Houdyshell	Canadian Pacific Railroad
Anshu Singh	Corn Belt Ports (Virtual)
Fritz Funk	Lake Onalaska District
Maisah Khan	Mississippi River Network (Virtual)
Rick Stoff	Our Mississippi (Virtual)
Matt Stokes	Safety Training and Response Strategies (Virtual)
Jimmy Hague	The Nature Conservancy (Virtual)
Bryan Hopkins	The Nature Conservancy
Mark Schulz	Wisconsin Conservation Congress
Kirsten Wallace	Upper Mississippi River Basin Association
Brian Stenquist	Upper Mississippi River Basin Association (Virtual)
Mark Ellis	Upper Mississippi River Basin Association
Natalie Lenzen	Upper Mississippi River Basin Association (Virtual)
Ken Peterson	Upper Mississippi River Basin Association
Erin Spry	Upper Mississippi River Basin Association
Andrew Stephenson	Upper Mississippi River Basin Association

Minutes

Rick Pohlman noted a correction to page A-1 of the May 23, 2023 UMRBA quarterly meeting as provided in the agenda packet to him serving as Chair rather than Tim Hall. Pohlman noted that the packet also

includes minutes from a January 30, 2023 meeting. Tim Hall moved and Jim Fischer seconded a motion to approve the May 23 meeting minutes as corrected and the January 30 minutes as drafted. The motion was approved unanimously.

Executive Director's Report

Kirsten Wallace announced that UMRBA hired Sam Hund and Ken Petersen as GIS and Planning Assistants to support ongoing Inland Sensitivity Atlas (ISA) work for USEPA Region 5. They started on May 15, 2023 and May 25, 2023, respectively.

Wallace welcomed Mark Gaikowski as USGS's new federal liaison to UMRBA. Gaikowski previously served as the UMESC Center Director and now serves as the USGS Midcontinent Region Deputy Director for Science.

Wallace recognized the tremendous contributions of Cheryl Ball (Missouri DOT) and Dave Busse (USACE St. Louis District).

Wallace pointed to the Executive Director's report in the agenda packet for a summary of the Association's work efforts since the May 2023 meeting. Wallace elaborated on the following highlights and action items:

- UMRBA submitted a work plan to USEPA for UMRBA's support of the Hypoxia Task Force Upper Mississippi River Sub Basin Committee.
- The Upper Mississippi River Restoration (UMRR) Coordinating Committee agreed upon priorities for FY 2024, including capacity planning, project selection process, a programmatic workshop in spring 2024, and implementation issues.
- The Interstate Council on Water Policy (ICWP) hosted a bicameral and bipartisan session on August 1, 2023 informing Congress of the challenges to non-federal sponsors for taking on the liability as prescribed in the Corps' project partnership agreements.

Wallace noted that the Mississippi River Commission will be employing its low water inspection of the Upper Mississippi River on August 14-18, 2023. Wallace said UMRBA will participate in a series of events, including serving on panels related to systemic flood planning and the Navigation and Ecosystem Sustainability Program.

Wallace provided an overview of UMRBA's partnership with NOAA and the University of Minnesota's Institute on the Environment in their efforts to develop downscale hydroclimatic predictions for the Upper Mississippi River basin. UMRBA's role will be to convene three facilitated meetings to increase the usability of the hydroclimatic forecasts and identify effective product delivery mechanisms to facilitate usability of hydroclimatic forecasts. The cost for this work is estimated to be \$12,500. Chris Weiberg moved and Tim Hall seconded a motion to authorize Wallace to enter into an agreement for \$12,500 with the University of Minnesota to support UMRBA's work as Wallace described.

Wallace pointed to UMRBA's May 2023 through June 2023 financial statements provided on pages B-6 to B-14 of the agenda packet. Tim Hall moved and Jim Fischer seconded the motion to accept the Association's budget report and balance sheet as included in the agenda packet. The motion was approved unanimously.

UMRBA Hazardous Spills Prevention and Planning Program

Acknowledging the reality that hazardous spills occur, Mark Ellis stated that the UMRBA Hazardous Spills Prevention and Planning Program convenes intergovernmental coordination to minimize the impacts of spills. The coordination occurs through the Upper Mississippi River Hazardous Spills Coordination Group, which, established in 1989, serves as a forum for information sharing, develops mapping and other planning and response tools, and advocates for federal investment and resources. The Upper Mississippi River Hazardous Spills Coordination Group membership includes state and federal agencies, tribes, counties, and industry (mostly railroads). Ellis emphasized the important role that railroad companies bring to regional hazardous spills response, including by providing resources and training to local entities.

Ellis reported that the Upper Mississippi River Hazardous Spills Coordination Group developed and formally adopted a strategic plan in 2021. Its purpose is to guide members' collaborative work in preparation, planning, and response to spills impacting the Upper Mississippi River. The Group's high-level goals in 2021 through 2027 are to:

- Develop guidance for stakeholders
- Support communication and coordination activities
- Increase participation from other groups
- Ensure sufficient resources
- Identify technologies and resources to advance the Group's interests

Ellis pointed to the Inland Sensitivity Atlas (ISA) as a primary product of the Upper Mississippi River Hazardous Spills Coordination Group. The Oil Pollution Act of 1990 required that USEPA document resources at risk, potential spill sources that would threaten that, and any other relevant information. In particular, UMRBA supports USEPA Region 5's ISA work and therefore maintains the ISA for Illinois, Minnesota, and Wisconsin and in adjacent counties in Iowa and Missouri.

Ellis explained UMRBA's approaches to supporting cooperative response planning. This mostly involves identifying resources at risk and potential sources for spill sources, developing site-specific response strategies and initial Incident Action Plan (IAP), verifying field response strategies, and submitting data and plans to the Regional Response Teams (RRT).

Ellis provided an overview of response plans available for the Mississippi River region. Full contingency plans exist for the USFWS Refuges and key habitat areas, Quad Cities, St. Louis, and Grate Rivers sub-areas. Most of the Upper Mississippi River has plans, while some may need to be updated. Ellis pointed to gaps in planning in specific geographic locations. Ellis said the Upper Mississippi River Hazardous Spills Coordination Group's strategic plan states a commitment to expanding spills plans at those gap locations as well as revisiting potentially outdated plans.

Ellis concluded that networking is key to highly valuable to the agencies involved in the Upper Mississippi River Hazardous Spills Coordination Group and other coordination activities, including for understanding the capabilities and expertise of individuals.

In response to a question from Rick Pohlman about drone technology, Ellis said the St. Charles County will be testing its drone as part of a response strategy verification in that region later this month. It will help to test the technology for assessing the extent of an oil spill or obstacles to responding to an event. In response to a question from Andrew Stephenson, Ellis explained that the Upper Mississippi River Hazardous Spills Coordination Group has discussed reviewing areas following the construction of a new habitat project because it could affect waters flows. In response to a question from Bryan Hopkins, Ellis explained that ecological resources are identified as priorities. Sensitive resources are not specifically identified in final products but there are prescribed actions to protect those areas.

Jim Fischer asked if priority for updating plans is informed by stretches of railroad track that might be at higher risk for a derailment. Ellis explained that issues leading to derailments are often unforeseen and noted that spills can enter anywhere along the transportation system as well as from other sources the store hazardous materials.

Sabrina Chandler underscored the value of the UMRBA Hazardous Spills Prevention and Planning Program. The plans have been tested many times over the last decade throughout the Upper Mississippi River System. Resource managers and responders are all aware that these plans and strategies are available. Responders are deeply involved in the planning and coordination. The value is that responders know exactly what to do when they are first to arrive on the scene of an incident. USFWS has successfully used these strategies to protect public trust resources. It is a tremendous asset that is unique to this region. According to Chandler, the Upper Mississippi River partnership has set the standard for spill response planning with the return on investment magnitudes higher than the costs.

In response to a question from Mark Gaikowski about using models such as bathymetry and topobathy, Ellis explained that the Upper Mississippi River Hazardous Spills Coordination Group has discussed the benefits of a flow model to show current velocity at the surface and where hazardous material might dissipate and spread. Gaikowski also suggested identifying key ecosystem indicators to protect and exploring the use of artificial intelligence, as an example, to identify bird species from aerial photography provided by drones.

Canadian Pacific Kansas City Railroad

Dale Buckholtz provided a briefing on the Canadian Pacific Railroad's purchase of the Kansas City Southern Railroad into what will now be named the Canadian Pacific Kansas City Railroad. The company will become the first transcontinental railway with 20,000 miles of track, allowing the railroad to shift commodities without interchange and to reduce congestion in certain areas. More information about the merger is available at <https://futureforfreight.com/>. Buckholtz also provided Canadian Pacific's commitment to safety and sustainability, focusing on the potential for zero-emissions hydrogen-powered locomotives.

In response to UMRBA's question, Buckholtz explained the railroads expectations of traffic and commodity flow along the Upper Mississippi River. In some areas, that includes nearly a doubling of railcars north of the Quad Cities. Buckholtz explained that future predictions are impacted by climate (e.g., drought affecting grain), intermodal demands, automotive market, seasonal factors, regulatory environment, and non-regulated materials.

Buckholtz explained Canadian Pacific's network of emergency response assets (e.g., boom, fire and foam trailers) and raid air monitoring equipment. Trainings and exercises are viewed as essential for preparing

for a potential response, including along the Mississippi River corridor. Buckholtz also explained the impacts of fire and floods to railroads and Canadian Pacific's associated mitigation activities. He offered partnership in working with UMRBA to address flood and drought impacts to transportation resiliency along the Upper Mississippi River.

Tony Houdyshell raised the issue of increasing incidences of barge encroachments on railroad tracks, noting that the Mississippi River is a unique corridor where rail and barge traffic interface throughout the navigation shipping season. It has caused derailment on the Upper Mississippi River. Railbeds and the embankments that are fragile become extremely susceptible to prop wash. Houdyshell said there are efforts to improve safety and awareness, such as the installation of warning signs and adding notifications to navigation charts. Canadian Pacific will continue to work through community awareness and emergency response (CAER) groups will continue to build relationships between maritime and railroad safety and response. Additionally, the CAER groups provide opportunities for the railroad to work with local communities and other responders to enhance their emergency response capabilities. This includes underwater and over ice trainings.

Col. Jesse Curry noted that barge encroachment is also a concern to levee districts. Col. Curry said the Navigation and Ecosystem Sustainability Program includes construction of mooring cells and other navigation aids that should help to address concerns related to encroachment. Col. Curry also encouraged coordination in preparing for emergency response during flood events.

Drought Resilience

2023 Navigation Channel Maintenance Report

Bob Stanick reported on the channel condition updates on behalf of the St. Paul, Rock Island, and St. Louis Districts. The Upper Mississippi River experienced record flooding in the northern stretches that quickly transitioned to low water, which has held consistently throughout the summer. The lack of high water in the St. Louis District has reduced dredging needs throughout the District. However, the potential for low water levels continuing into fall may require significant dredging. Generally, there has been minimum sediment deposition in the Rock Island District. There was one emergency incident in the Caseville area early in the season but that was resolved using the Dredge Goetz. The St. Paul District is currently watching several problematic. Six groundings have occurred this year, but the District was able to respond very quickly and limit impact to navigation. The St. Paul District is continuing to learn from past experience and make process improvements to channel maintenance program.

Stanick opened a larger discussion about capacity to place dredged material in near and long term. Near term capacity is influenced by many unknown variables such as climate – e.g., drought, flood, and changing weather patterns. The Corps is working with partners to develop DMMPs to expand capacity in certain locations. While there is capacity to place material dredged maintain an open channel, there is not placement capacity to maintain the recommended width of the navigation channel. Longer term planning seems to be better focused on reducing sediment runoff to the river.

Stanick explained a suite of challenges that are facing the Corps' channel maintenance programs on the Upper Mississippi River, including capacity of placement sites, cost of doing business, authorizations, regulatory limitations, volatility of different climate scenarios, and competing missions between partnering agencies. As an example, Stanick pointed to the Federal Standard as a limitation to beneficial use.

Noting that sediment deposition in backwater areas is a major concern for partners, Stanick explained that the Corps is limited in its authorization for the navigation program to dredge backwater areas for habitat benefit. Col. Eric Swenson reiterated Stanick's statement confirming that the navigation authority cannot dredge for non-navigation purposes, Col. Swenson pointed to other authorities such as the Upper Mississippi River Restoration (UMRR) program for addressing those dredging needs.

Fischer acknowledged the authorization limitation, but then explained the challenge within UMRR to balance costs of habitat construction by beneficially using dredged material from the navigation channel rather than dredging the backwaters and gaining that ecological habitat. Given that UMRR and NESP are the authorizations that allow for backwater dredging, then it will be important to balance ecological benefit of using the dredged material from the backwaters for UMRR island construction with the cost savings from using the dredged material from the navigation channel. Fischer recognized the inherent challenge from sediment deposition in both the navigation channel and backwaters. Col. Swenson said he agreed with Fischer's assessment.

In response to a question from Bryan Hopkins, Stanick explained that the ability to beneficially use dredged material is calculated on an individual case basis. Generally, costs for transporting the dredged materials would need to be close in proximity to the dredge location.

Stanick said opportunities include the Navigation and Ecosystem Sustainability Program, beneficial reuse, new technologies (e.g., bedload collector), and funding for partner agencies to address upland and stream erosion. Stanick called on partners to share ideas for opportunities.

Chad Craycraft agreed that reducing sediment runoff to the river is important. Fischer agreed with Stanick's assessment, calling for new creative approaches and to do so in collaborative partnerships. Fischer asked specifically about how UMRBA can be helpful by focusing on policy, including through new legislation or commenting on Corps policy. Fischer agreed with Stanick's comment about expanding the involvement of DOTs and watershed groups in the St. Paul District River Resources Forum. Mark Schultz underscored the challenge of the stressors to the river coming from the watershed. Schultz explained challenges to local governments to disposing dredged sediment to deepen backwater lakes.

In response to a question from Fischer about limitations from easement, Stanick said the Corps was able to receive a waive the land ownership requirement to instead use easements. The Corps may still be required to purchase land for long term placement sites. Stanick said the St. Paul District should be able to meet the Chief of Engineer's recent goal of beneficially using 70 percent of dredged material. Co. Swenson confirmed that the St. Paul District is working aggressively to resolve real estate issues for obtaining placement sites with less than fee title as described in the regulations. Col. Swenson mentioned the partnership with the City of Winona using the Section 217 authority, which allowed the Corps to given the city a tipping fee to remove sediment and use to their benefit. Col. Swenson said eminent domain will likely need to be a solution in some places, and he would anticipate seeking support from UMRBA in areas where eminent domain is necessary to keep the navigation channel open. He said the goal is to dredged to the authorized width particularly around the river bends, acknowledging that this would be a substantial undertaking.

Stanick acknowledged the shortage of sand nationally and internationally and called upon partners to be innovative, create partnerships, and resolve the policy impediment to beneficial reuse. Chuck Theiling shared that the Corps' Engineering Research and Development Center (ERDC) is currently evaluating the

use of Upper Mississippi River dredged sands to support beach nourishment projects across the country. The District receiving the sand may be able to counter the transportation costs.

Wallace noted UMRBA's interest in systemic, integrated channel maintenance planning. In the last couple of water resource development acts, Congress has tried to expand the Corps' channel maintenance planning authorities and use of dredged material. Wallace mentioned an opportunity for interagency planning.

BJ Murray noted the implementation challenge for Illinois that accepting beneficial reuse to place on farm fields becomes a regulated use. Theiling mentioned that states have differing regulations, but pointed to Minnesota's regulations that are useful for beneficial reuse. Mike Halstad echoed Murray's concern and the challenge at which sediment contains contaminants and the associated risk given the use. Fischer confirmed that dredged material is considered waste. The question is how clean is clean enough to be allowable for certain uses. Wisconsin is currently working internally to evaluate tiered standards in tandem with updating its memorandums of understanding for channel maintenance with the Corps.

Fischer referred to Wallace's comment, and called for systemic planning at least at the pool scale rather than individual DMMPs to provide flexibility with multiple opportunities for placement.

Missouri River Basin Water Management

John Remus explained the authorities and processes for managing water through the reservoir system on the Missouri River. Remus provided contextual information about the Missouri River's geography, the Congressionally-directed authorized purposes for the Corps' operations, the reservoir system storage zones and allocations, the water control requirements, and the navigation flow targets. Remus underscored that the Corps is not authorized to manage the Missouri River for any Mississippi River benefits.

Remus reported that navigation flow levels will be 1,500 cubic feet per second (cfs) below full service for the remainder of the 2023 season and will end December 1, noting the dry soil moisture conditions over much of the Missouri River Basin and the long range forecast for lower-than-average precipitation.

Wallace explained that UMRBA has letters to the Corps from the late 1990s and early 2010s that suggest there was authority for the Corps to consider the interconnectedness of the Mississippi River to the Missouri River management. Wallace asked whether the navigation authority is solely defined as encompassing only the Missouri River or whether the navigation authority could extend to other river uses. Remus referenced past deviation requests for a Mississippi River need that were denied when not having a direct quantified connection to Missouri River management.

Missouri River

Chris Wieberg shared Missouri's newly renewed Drought Mitigation and Response Plan and conditions and impacts of the 2023 drought in Missouri. Wieberg characterized the Drought Mitigation and Response Plan as allowing for a very adaptive approach to managing and mitigating drought impacts, pointing to a matrix of actions based on the myriad of potential conditions and impacts.

Wieberg applauded National Weather Service for its assistance in detecting and tracking drought conditions. Drought mostly retreated in winter 2022-2023 but rebounded throughout spring with

drought mostly covering the state by summer. Missouri experienced the driest April and May combined since 1980 with high temperatures and low precipitation throughout summer. Precipitation in Missouri throughout the last three years (2021, 2022, and 2023) was below the long-term average.

Wieberg discussed the unique challenges of this drought to livestock because of the timing of the drought over the April and May growing season for tall fescue. Missouri DNR has spent considerable time working with farmers dealing with the drought impacts, learning about the impacts and listening to their concerns.

Wieberg provided an overview of Missouri DNR's actions, which included organizing the Drought Assessment Committee, opening the conservation reserve programs to allow for grazing, and assisting farmers with technology support and connecting them to federal assistance programs. Wieberg also noted Missouri's concern about impacts to navigation particularly in light of what occurred in fall 2022.

Water Resources Development Act

Kirsten Wallace explained that the intent for this segment of the meeting is to hear from UMRBA partners and river stakeholders about their respective priorities for Water Resources Development Act (WRDA) of 2024. In addition to presenting these ideas today, Wallace directed comments that partners want to submit to UMRBA to umrba@umrba.org.

The Senate Committee on the Environment and Public Works requested that members submit their WRDA 2024 requests by early October 2023. That is why UMRBA has begun to coordinate its priorities for WRDA and is now listening to partners ideas for its consideration.

Wallace reported that UMRBA will continue to advocate for reforming the liability provisions within the Corps' project partnership agreements (PPAs). The UMRBA Board is evaluate priorities related to the Corps applying for state permits, the use of easements as a preference over fee title, a systemic flood risk study similar to the authority on the Missouri River, as well as other matters.

Bob Sinkler said the Corn Belt Ports is prepared to advocate for PPA reform. Additionally, UMIMRA will request UMRBA support for legislation. Wallace mentioned the array of organizations working collaboratively to resolve the PPA impasse and the efforts that UMRBA is involved with to expand advocacy for PPA reform nationally, including through the Interstate Council on Water Policy.

In response to a question from Bryan Hopkins, Kirsten Wallace explained that the UMRBA Board is considering requesting an increase in the authorized annual appropriation for UMRR's long term resource monitoring. Jimmy Hague expressed appreciation for PPA reform and requested UMRBA support for UMRR long term resource monitoring. Wallace explained UMRBA's priorities for coordinating with the UMRR Coordinating Committee to evaluate the appropriate request given the program's recent information needs assessment. Jim Fischer pointed to increasing needs for monitoring and science capacity on the Upper Mississippi River System, but also raised the need to evaluate capacity to ensure capability is ready for the increased authorization.

Other Business

Future Meeting Schedule

October 2023 – St. Louis, Missouri

- UMRBA Quarterly Meeting – October 24
- UMRB Coordinating Committee quarterly meeting – October 25

February 2024 – Virtual

- UMRBA Quarterly Meeting – February 24
- UMRB Coordinating Committee quarterly meeting – February 25

May 2023 – St. Paul, Minnesota

- UMRBA Quarterly Meeting – May 21
- UMRB Coordinating Committee quarterly meeting – May 22

With no further business, the meeting adjourned at 2:00 p.m.

**Draft
Minutes of the
Upper Mississippi River Basin Association**

**September 22, 2023
Virtual Meeting**

UMRBA Representatives and Alternates

Rick Pohlman	Illinois Department of Natural Resources
Tim Hall	Iowa Department of Natural Resources
Grant Wilson	Minnesota Department of Natural Resources
Chris Wieberg	Missouri Department of Natural Resources
Erin Fanning	Missouri Department of Natural Resources
Wade Strickland	Wisconsin Department of Natural Resources

Other Participants

Kirsten Wallace	Upper Mississippi River Basin Association
Brian Stenquist	Upper Mississippi River Basin Association

Rick Pohlman called the meeting to order at 11:00 a.m.

U.S. Environmental Protection Agency Region 5 Oil Pollution Act Contract

Kirsten Wallace reminded that the Upper Mississippi River Basin Association (UMRBA) has engaged in multiple contracts since 1992 to carry out spill response mapping and planning work under contract with USEPA Region 5 and in collaboration with the Great Lakes Commission (GLC). Historically, the primary product of these contracts has been the Region 5 Inland Sensitivity Atlas (ISA), although the contract also covers a variety of other tasks including sub-area planning, development of habitat specific fact sheets, the Toxics Release Inventory (TRI) project, and other efforts.

Wallace reported that, on September 11, 2023, USEPA Region 5 submitted to UMRBA a request for proposal for continuing service on the ISA. The proposed cooperative agreement includes \$250,000 for FY 2024 with two additional option years. As part of the request for proposal, UMRBA must submit personnel costs with hourly rates for individual staff.

Wallace provided an overview of preliminary and final compensation data from Gallagher, which the UMRBA Board contracted to perform a compensation analysis. The data show that existing staff are underpaid and requested that the UMRBA Board consider adjusting compensation prior to submitting the pricing tables.

After discussion about the compensation data, Grant Wilson moved and Tim Hall seconded a motion to authorize Wallace to execute a cooperative agreement with USEPA of \$250,000 for FY 2024 with two additional options years of the same amount to support UMRBA's continued spills contingency planning and inland sensitivity mapping work. The motion was approved unanimously.

Chris Weiberg moved and Wade Strickland seconded a motion to adjust salaries for Mark Ellis, Tyler Leske, Sam Hund, and Ken Peterson, noting that the salaries fall outside of the salary ranges for their respective positions. The motion was approved unanimously. The Board acknowledged its ongoing work to evaluate salary ranges for all staff in the near future.

The meeting adjourned at 12:05 p.m.

ATTACHMENT B

Executive Director's Report

- Executive Director's Report *(B-1 to B-6)*
- UMRBA Water Resources Development Act 2024 Priorities Letter (9/13/2023) *(B-7 to B-9)*
- Interstate Council on Water Policy (ICWP) Project Partnership Agreement (PPA) Reform Partner Letter (10/5/2023) *(B-10 to B-13)*
- UMRBA Navigation Assets Inventory Expansion Press Release (9/26/2023) *(B-14)*
- Treasurer's Quarterly Statement (10/12/2023) *(B-15)*
- FY 2023 Profit and Loss Statement (6/30/2023) *(B-16 to B-18)*
- FY 2024 Profit and Loss Statement (10/12/2023) *(B-19 to B-21)*
- Balance Sheet (10/12/2023) *(B-22 to B-23)*



Executive Director's Report October 2023

ADVOCACY

Water Resources Development Act

On September 13, 2023, UMRBA submitted to Congress its priorities for the Water Resources Development Act (WRDA) of 2024. The letter is provided on pages B-7 to B-9 of the agenda packet. On September 18-21, 2023, UMRBA staff met with several Congressional offices in Washington, D.C. to explain these priorities and request support.

The Interstate Council on Water Policy (ICWP) submitted to the Senate Committee on the Environment and Public Works a letter on October 5, 2023 seeking reform of the Corps' project partnership agreements (PPAs). The letter was signed by multiple partnering organizations. The letter is provided on pages B-10 to B-13 of the agenda packet.

COMMERCIAL NAVIGATION

UMRBA Navigation Assets Inventory

UMRBA recently expanded Navigation Assets Inventory to include an additional 734 miles of navigable river on the Missouri river from Sioux City to St. Louis, including 2 ports, over 50 terminals, and 14 live National Weather Service and U.S. Geological Survey stream gages. The expanded Navigation Assets Inventory now includes Marine Highways 35, 55, 29, and 70, creating new opportunities for ports, terminals, and operators to access federal funding, technical support, and other resources to expand or develop new shipping services and make the Missouri and Upper Mississippi Rivers a more cost-effective and self-sustaining transportation route. The Navigation Assets Inventory is available here: <https://umrba.org/navigation-assets-inventory>. A press release announcing the expanded Inventory is provided on pages B-14 of the agenda packet.

Corn Belt Ports Meeting

A meeting for the Northern Grain Belt Ports (statistical area) was convened on October 5, 2023 in La Crosse, Wisconsin, with a series of presentations from federal and state agencies regarding their respective navigation programs. MARAD discussed its grant and loan opportunities to fund ports and other infrastructure investment in the region. The Corps provided an update of the Navigation and Ecosystem Sustainability Program and the Upper Mississippi River Restoration Program. The DOTs of Illinois, Iowa, and Missouri presented on their respective waterways programs, Minnesota DNR presented on Mississippi River management, and UMRBA staff shared an overview of its navigation program.

ECOSYSTEM HEALTH

USFWS Nature-Based Solutions

The USFWS allocated \$10 million in Inflation Reduction Act monies to implementing nature-based solutions on the Upper Mississippi River System floodplain. USFWS, UMRBA, and the states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin are working collaboratively to determine the investment

opportunities. As a first step, this has involved developing criteria related to reducing the impacts of climate change to the ecosystem and surrounding communities. This effort represents a unique opportunity to advance important ecosystem goals leveraging federal and non-federal funds.

American Fisheries Society

The American Fisheries Society convened its annual meeting on August 21-24, 2023 in Grand Rapids, Michigan. The meeting focused on “adaptive approaches to understand and manage change in fisheries.” In conjunction, the Mississippi Interstate Cooperative Resource Association held a symposium during which UMRBA staff presented on the history and success of the Upper Mississippi River System partnership. UMRBA underscored the Upper Mississippi River Restoration Program as an outgrowth to interagency and multi-purpose management agreements for the Upper Mississippi River and the ongoing success it has had by utilizing and strengthening that partnership.

Restoration and Management

The Navigation and Ecosystem Sustainability Program (NESP) Coordinating Committee has delegated to an *ad hoc* interagency group the development of a scope of work for standardizing conceptual ecological models that can be used by project delivery teams. UMRBA is serving on this *ad hoc* group, which had its first meeting on August 24, 2023.

Environmental Justice

The Upper Mississippi River Restoration (UMRR) Program Coordinating Committee and the Navigation and Ecosystem Sustainability Program (NESP) Coordinating Committee convened a joint meeting on September 29, 2023 to discuss ways in which both programs can advance environmental justice goals. This meeting focused more specifically on the ongoing project selection processes, including how to incorporate community engagement at the outset of the project identification selection.

Policy and Programmatic Interagency Coordination

UMRR Coordinating Committee Meeting

The UMRR Coordinating Committee met on August 9, 2023 in Davenport, Iowa. The agenda involved programmatic briefings regarding accomplishments and progress related to habitat rehabilitation and enhancement projects (HREPs), long term resource monitoring, and communications. The meeting also discussed machine learning to evaluate vulnerability and restoration potential of submersed aquatic vegetation.

UMRR Implementation Issues

Following conclusion of the quarterly meeting on May 24, 2023, the UMRR Coordinating Committee convened to discuss actions to address implementation issues identified in 2021. Coordinating Committee affirmed that resolving the liability provisions in the project partnership agreements is its priority because it is the most impactful solution to resolving the greatest constraint the program. In addition, the Committee agreed to focus attention on i) resolving constraints related to lands with NRCS wetland reserve easements and ii) evaluating ways implement UMRR with the best available information on climate change impacts to the Mississippi River.

NESP Coordinating Committee Meetings

The Navigation and Ecosystem Sustainability Program (NESP) Coordinating Committee convenes monthly meetings to advance programmatic priorities. Recent discussions have focused on partner funding agreements, the NESP ecosystem project selection process, and project implementation reports.

UMRR Capacity Planning

The UMRR Coordinating Committee met on August 3, 2023 to discuss outyear funding scenarios, staffing plans, and programmatic priorities for FY 2024. The Committee spent considerable time sharing concerns related to staff capacity such as hiring well-qualified personnel and managing workload spikes. Committee members noted that current staff are at or above capacity under the existing workload and agreed to assess staffing resources and recommend options for improving capacity. The Committee concluded that resolving the PPA impasse is essential to ensure efficient execution of UMRR habitat projects and would alleviate some constraints on USFWS staff. The Committee's programmatic priorities for FY 2024 include enhancing the UMRR HREP selection process, addressing and resolving UMRR implementation issues, developing a new UMRR strategic plan, and hosting a UMRR workshop.

Communications and Outreach Team

The UMRR Communication and Outreach Team (COT) met on September 6, 2023. UMRBA staff led a partnership discussion on disseminating the UMRR LTRM ecological status and trends snapshot summaries by providing a shared communication toolkit. In addition, Minnesota DNR shared communication success stories and lessons learned as a means for providing insights and examples that may be useful to UMRR.

The Corps shared the final version of the UMRR COT framework reflecting input from the COT members. The framework covers membership of the COT, what it works on, and processes for completing work including social media campaigns, printable products, and more.

Interagency Meetings

UMRBA staff participated in the following meetings:

- August 10 Fish and Wildlife Working Group
- August 15-16 River Resource Forum
- September 7 Upper Mississippi River Restoration ecological status and trends informational briefing
- September 20 River Resources Coordinating Team
- September 25 and October 5 Upper Mississippi River Restoration program-wide science forums
- Monthly meetings of the Navigation and Ecosystem Sustainability Program regarding the ongoing design of eight mooring facilities

HAZARDOUS SPILLS COORDINATION, MAPPING, AND PLANNING

Oil Pollution Act (OPA) Planning and Mapping

UMRBA staff continue to update the statewide Illinois Inland Sensitivity Atlas (ISA) and initiated updating the statewide atlas for Wisconsin. UMRBA incorporated updates to the regional geodatabase for Illinois as well as for Ohio with data provided by the Great Lakes Commission.

UMRBA staff participated in the following engagements:

- Mapping Group conference calls on September 11 and October 2
- Inland zone planning calls on August 17 and October 19
- A training exercise on September 5-6 to test the USGS-developed oil fate and transport model for the St. Croix River

UMRBA hosted an area response strategy field reconnaissance for Pools 25 and 26 on August 21-23, 2023. UMRBA staff also provided general support for spill response planning in the Upper Mississippi River, Minneapolis/St. Paul, and Red River sub-areas and presented on ISA and spill response planning resources to Wakota CAER on October 10, 2023 in Cottage Grove, Minnesota.

On September 26, 2023, UMRBA entered into a new three-year contract with USEPA Region 5 to continue support for the Inland Sensitivity Atlas and related work.

WATER QUALITY

Water Quality Committees

The UMRBA Water Quality Task Force met on September 20-21, 2023 in Muscatine, Iowa. Meeting topics included a presentation on interpolation techniques for missing water quality data, state and federal harmful algal bloom updates, statistical survey tools for monitoring, and short-term water quality priorities of the Task Force.

Missouri Water Protection Forum

On August 9, 2023, UMRBA staff presented on the How Clean is the River? Report at the Missouri Water Protection Forum meeting. The Report is an analysis of water quality trends on the Upper Mississippi River from 1989 to 2018.

Clean Water Act Environmental Justice Modules Workshop

UMRBA staff virtually participated in the August 29 and 30, 2023 Clean Water Act Environmental Justice Modules workshop, hosted by the Environmental Law Institute. Sessions included 1) water quality standards module and demonstration, 2) water quality monitoring and 303(d) listing/TMDLs, 3) CWA Section 319 program, Section 401 certification, and Section 404 permitting, and 4) national pollution discharge elimination system permitting, Clean Water Act state revolving funds, Urban Waters Program, and National Estuary Program.

Harmful Algal Blooms

UMRBA staff participated in the USEPA Region 5 triannual HABs call on October 19, 2023. Each of the states and basin associations located within USEPA Region 5 shared updates on the HAB season in 2023.

Nutrient Management

Soil and Water Conservation Society

UMRBA staff attended the Soil and Water Conservation Society annual meeting on August 6-9, 2023. The conference offered symposia sessions on conservation innovation grants, professional development, adaptive management of conservation, climate-smart agriculture, and edge-of-field practices and monitoring. Oral presentation topics included conservation economics and policy, cultivating conservation technical assistance, social science informing conservation, and soil health resources.

Batch-and-Build Partnership

On September 14, 2023, UMRBA hosted a call with state agency nutrient reduction strategy leads to assess whether the Natural Resources Conservation Service (NRCS) Conservation Innovation Grant was an appropriate funding source for replicating Iowa's batch-and-build or single fiscal agent model across the UMRBA member states.

State Revolving Fund Programs

On August 15, 2023, the UMRBA Water Quality Executive Committee and the Water Quality Task Force meet with the state agency coordinators of the state revolving funds (SRFs) coordinators to discuss strengths and challenges associated with individual SRF programs. Quantified Ventures presented to this group about the opportunity to provide in-kind assistance to the Upper Mississippi River Basin states on their SRF applications.

UMRBA Multi-Benefit Conservation Practice Workshop

UMRBA hosted a workshop on October 3-4, 2023 for the purposes of accelerating the adoption of multi-benefit conservation practices. The workshop was located in St. Paul, Minnesota and was the second of a two-part workshop series financially supported by USEPA. The workshop focused on leverage points of change – i.e., places with a complex system where a small change can result in big changes in the adoption of multi-benefit conservation practices. Approximately 65 participants attended the workshop representing state and federal agencies, industry, non-governmental organizations, and agriculture cooperatives.

On September 13, 2023, UMRBA convened a pre-workshop webinar to build a shared understanding of the various federal funding mechanisms that can fund multi-benefit conservation practice implementation. Presenters included representatives from USEPA, Quantified Ventures, and NRCS.

MULTI-PURPOSE COLLABORATION

Mississippi River Commission

UMRBA staff participated in a series of Mississippi River Commission meetings during its low water inspection tour on August 14-17, 2023. UMRBA staff provided public comments addressing project

partnership agreements and state permitting as well as underscoring the value of partnership among state and federal agencies as well as local entities and stakeholders.

UMRBA staff also participated in panels related to flood risk and resilience and the Navigation and Ecosystem Sustainability Program (NESP).

America's Watershed Initiative

The America's Watershed Initiative (AWI) held its annual meeting on September 25, 2023 in New Orleans, Louisiana. Kirsten Wallace serves as an AWI Board member and attended the meeting. AWI's Board employed strategic planning discussions for the subsequent year, particularly focusing on AWI's Report Card program and its Mississippi River Watershed Partnership Initiative.

Interstate Council on Water Policy

The Interstate Council on Water Policy (ICWP) held its annual meeting on October 25-27, 2023 in Denver, Colorado. The meeting featured the water resource issues and investments in science, planning, and infrastructure in the Colorado region. Wallace serves as member of the Board of Directors and Chair of its Legislative and Policy Committee, and attended the ICWP annual meeting in that capacity.

Upper Midwest Environmental Sciences Center Facility Renovation Dedication

On October 11, 2023, USGS hosted a dedication ceremony for the facility renovations at the Upper Midwest Environmental Sciences Center (UMESC). The ceremony included remarks by the USGS Director David Applegate, Deputy Associate Director for the Ecosystems Mission Area Paul Wagner, Midcontinent Region Director Jen Lacey, and Midcontinent Region Deputy Director for Science Mark Gaikowski. The ceremony also included a tour of the renovated facilities.

Community Engagement Learning Labs

UMRBA staff attended a series of community engagement learning lab series hosted by the City of Minneapolis in the month of October 2023. The sessions were focused on effective community engagement strategies, specifically related to accessibility; immigration and refugee status; gender dynamics, religion, and norms; historical experiences and trust in government; culturally-specific media and communication styles; significant institutions, nonprofits, and sacred spaces; and major events, holidays or festivals. Focal communities for the learning labs include immigrant and refugees, American Indians, Southeast Asian, disability awareness, African American, and East African.

FINANCIAL REPORT

Attached as page B-15 is UMRBA Treasurer Jason Tidemann's statement regarding his review of UMRBA's financial statement for the period of July 1, 2023 to September 30, 2023.

Attached as pages B-16 to B-23 are UMRBA's FY 2023 and 2024 budget reports and balance sheet. As of June 30, 2023, ordinary income for FY 2023 totaled \$861,301.55 and expenses totaled \$925,918.35 for net ordinary income of -\$64,616.80. As of October 12, 2023, ordinary income for FY 2024 totaled \$426,330.17 and expenses totaled \$285,881.74 for net ordinary income of \$140,448.43. As of this date, UMRBA's cash assets totaled \$195,765.55.



September 13, 2023

The Honorable Sam Graves, Chair
The Honorable Rick Larsen, Ranking Member
U.S. House of Representatives
Transportation and Infrastructure Committee
2165 Rayburn House Office Building
Washington, D.C. 20515-6256

The Honorable Tom Carper, Chair
The Honorable Shelley Moore Capito, Ranking Member
U.S. Senate
Environment and Public Works Committee
410 Dirksen Senate Office Building
Washington, D.C. 20510-6175

The Honorable David Rouzer, Chair
The Honorable Grace Napolitano, Ranking Member
U.S. House of Representatives
Transportation and Infrastructure Committee
Water Resources and Environment Subcommittee
2165 Rayburn House Office Building
Washington, D.C. 20515-6256

The Honorable Mark Kelly, Chair
The Honorable Kevin Cramer, Ranking Member
U.S. Senate
Environment and Public Works Committee
Transportation and Infrastructure Subcommittee
410 Dirksen Senate Office Building
Washington, D.C. 20510-6175

Dear Representatives Graves, Larsen, Rouzer, and Napolitano and Senators Carper, Moore Capito, Kelly and Cramer:

We are very pleased to understand that you are beginning to formulate the 2024 Water Resources Development Act (WRDA). Formed by the Governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin in 1981, the Upper Mississippi River Basin Association (UMRBA) represents its member states' common water resource interests and works collaboratively with the federal and state agencies as well as the navigation industry, environmental organizations, local communities, and others who work directly to improve the Upper Mississippi River System. UMRBA is strongly committed to the principles of sustainability and multi-use as the foundation of managing the Upper Mississippi River System. This authorizing legislation offers an important opportunity to address critical water resource needs in a comprehensive measure that incorporates those same principles.

On behalf of UMRBA, I am pleased to offer our five member states' priorities for WRDA 2024 for which we respectfully request your support. UMRBA's priorities are as follows:

Project Partnership Agreements — Create a more equitable and reasonable approach to non-federal cost share agreements by:

- A) Replacing the current blanket indemnification requirement with a more shared approach to liability. 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

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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.

- B) Establishing a defined cap on operations, maintenance, repair, replacement, and rehabilitation (OMRR&R) obligations. The current PPA terms legally obligate non-federal sponsors to undefined and unbounded OMRR&R for the water resource project. This is challenging for non-federal sponsors to legally assume because 1) the projects have a period of analysis of 50 years and 2) given the dynamic nature of the river ecosystem, ecosystem management needs will undoubtedly change beyond the projects period of analysis. This policy essentially creates a permanent federal hold on non-federal property.

State Permits — Direct that Corps follow state law as required by the respective state in which the Corps is implementing water resource projects unless and until a mutually agreeable solution is reached and reverse legal mandates that would suggest otherwise – e.g., 33 CFR 336.1(c)(10).

Within the last year, it appears that Corps Headquarters has departed from past practice and is instituting a policy by which the Corps is not applying for state permits. This departure has created unnecessary friction between the Corps and states, and is in direct violation of state statute and previously issued federal decree.

This impasse creates a legal challenge for the states and a barrier to important water resource projects. It is prudent for state governments to be fair to all permit seekers and to ensure proper evaluation of any implications of water resource projects to their public and publicly entrusted resources. Further, it is illegal for at least some states and their respective officials serving as a non-federal sponsor to partner on a project that does not adhere to state law, including lack of issued state permits.

Planning flood conveyance and storage, systemically and locally — Authorize a study to develop long term, integrated approaches to improving flood conveyance and storage in the Upper Mississippi River System floodplain, systemically and locally. We believe that the Lower Missouri River Basin Flood Risk and Resiliency Study's authorization provides a model for the authorization that UMRBA envisions for the Upper Mississippi River System.

UMRBA proposes utilizing the region's deeply-rooted state-federal partnership to employ a collaborative, consent-based planning process. Integrating the best available knowledge and expertise, UMRBA's goal for the process is to create a commonly-held vision with shared goals, objectives, and implementation strategies for flood conveyance and storage that build upon the region's multi-jurisdictional governance framework and landscape public and private land ownership.

UMRBA urges that the planning authority allow for innovative approaches for communicating and engaging with the many people and businesses who are directly and indirectly affected by flooding on the Upper Mississippi River System. UMRBA strongly asserts that a transparent and collaborative process, with ongoing conversations among the affected interests and with decision makers listening to and evaluating stakeholder input, is necessary to build effective, lasting solutions.

Upper Mississippi River Restoration (UMRR) Program — Modify the UMRR authorization to:

- A) Increase the annual appropriation authorization of UMRR’s long term resource monitoring to \$25 million. Additional annual funding would allow the UMRR to conduct systemic monitoring of other critically important major resources in the system such as mussels and macroinvertebrate populations, support needed analysis to forecast changes to the river’s ecosystem resulting from changing hydrologic conditions, and develop new tools and models to better understand and manage the ecosystem.
- B) Allow for financial support to UMRBA and the states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin to directly participate in the program, expanding the capacity for cooperative planning and technical expertise.
- C) Expand the availability of restoration opportunities on General Plan lands by allowing for memorandums of agreement (MOAs) to govern projects on those lands (as opposed to project partnership agreements). This change would have an immediate impact of removing a policy barrier to implementing habitat projects on 45,000 acres of General Plan lands.

Full Federal Funding for IJA-Funded Inland Waterways Projects — Authorize full federal funding for the remaining costs for all inland waterways construction and major rehabilitation projects funded by the Infrastructure Investment and Jobs Act (IIJA). This authorization would be consistent with the intent of the IJA that these projects be paid for in full by the federal government, in part, to achieve an accelerated return on investment.

Thank you for the opportunity to provide initial comments on WRDA 2024. We will follow up with you to further explain the value of these suggested provisions. We look forward to working with you to improve our collective ability to strengthen and build resilience of the Upper Mississippi River System.

Sincerely,



Kirsten Wallace
Executive Director
Upper Mississippi River Basin Association

cc: Upper Mississippi River Congressional Delegation
Michael Connor, Assistant Secretary of the Army for Civil Works
Eddie Belk, U.S. Army Corps of Engineers
Brig. Gen. Kimberly Pepples, U.S. Army Corps of Engineers Mississippi Valley Division

October 5, 2023

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

Dear Chairman Carper and Ranking Member Capito:

Our coalition of 12 undersigned organizations either act as, or work with, non-Federal sponsors of many important U.S. Army Corps of Engineers (USACE) water resource projects that provide numerous benefits to communities nationwide. USACE Project Partnership Agreements (PPAs) are the legally binding documents between the Federal government and non-Federal project sponsors that set the terms and conditions for project construction and cost sharing. The widespread interest in the partnerships notwithstanding, the legal terms of the PPAs create major challenges for sponsors to partner with the agency and execute these vital projects.

We are collectively writing to you to respectfully request that the Senate Committee on Environment and Public Works provide USACE with specific direction and authority to rectify structural PPA inequities between the Federal government and non-Federal project sponsors via the Water Resources Development Act (WRDA) of 2024. The current structure of USACE PPAs require that non-federal sponsors assume: 1) complete liability for constructed projects (except for when fault or negligence is proven) and 2) operations, maintenance, repair, replacement, and rehabilitation (OMRR&R) for the project in perpetuity.

Congress can create a more equitable and reasonable approach to PPA non-Federal cost-share agreements via WRDA 2024 by:

1) Replacing the current blanket indemnification requirement with a more shared approach to liability

*Section 103(j) of WRDA 1986:*¹

“Any project to which this section applies...shall be initiated only after non-Federal interests have entered into binding agreements with the Secretary to...hold and save the United States free from damages...”

Indemnifying a third party (including the federal government) is in direct conflict with many states’ constitutions and laws as well as nonprofit organizations’ policies. In fact, 22 states (and counting) have a direct conflict with PPA requirements and their state laws (see map in Attachment 1). Many state constitutions preclude agencies from obligating funds without an

¹ Water Resources Development Act. PL 99-662. Sec. 103(j)(1) (1986).

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. Doing so 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.

Indemnification requires the assumption of liability beyond the extent to which many states' tort law permits. As a result, the unbounded risk that this clause creates for potential project sponsors impedes beneficial water resource projects from advancing. Removing or replacing blanket indemnification with a more shared approach to liability would better enable non-Federal partners to be active equals on USACE-partnered projects.

2) Establishing a defined endpoint on OMRR&R obligations

Section 103(j) of WRDA 1986:²

"Any project to which this section applies...shall be initiated only after non-Federal interests have entered into binding agreements with the Secretary to pay 100 percent of the operations, maintenance and replacement and rehabilitation costs of the project..."

Historically, USACE limited OMRR&R obligations to 50 years, which is the standard design life of a constructed project per the standing Principles and Guidelines. In 2012, USACE changed its policy to require that non-Federal sponsors maintain responsibility for OMRR&R obligations in perpetuity. This change in policy obligates non-Federal sponsors to undefined and perpetual OMRR&R obligations for the water resource project.

PPA reform is in the national interest and will increase opportunities to leverage non-Federal investments to achieve local, regional, and national water resource goals. We are committed to finding a PPA reform solution via WRDA 2024 that will enable project partners to more equitably engage on USACE projects and ensure that USACE meets its Federal obligations.

If you would like to learn about specific project examples impacted by PPA inequities, or if we can provide sample language that will help to rectify PPA shortcomings via WRDA 2024, please contact Beth Callaway, Executive Director of the Interstate Council on Water Policy (beth@icwp.org) or any of the undersigned organizations.

Partner signatories:

Association of Fish & Wildlife Agencies

National Audubon Society

Coastal States Organization

Delaware River Basin Commission

Great Lakes Commission

Interstate Commission on the Potomac River Basin

Interstate Council on Water Policy

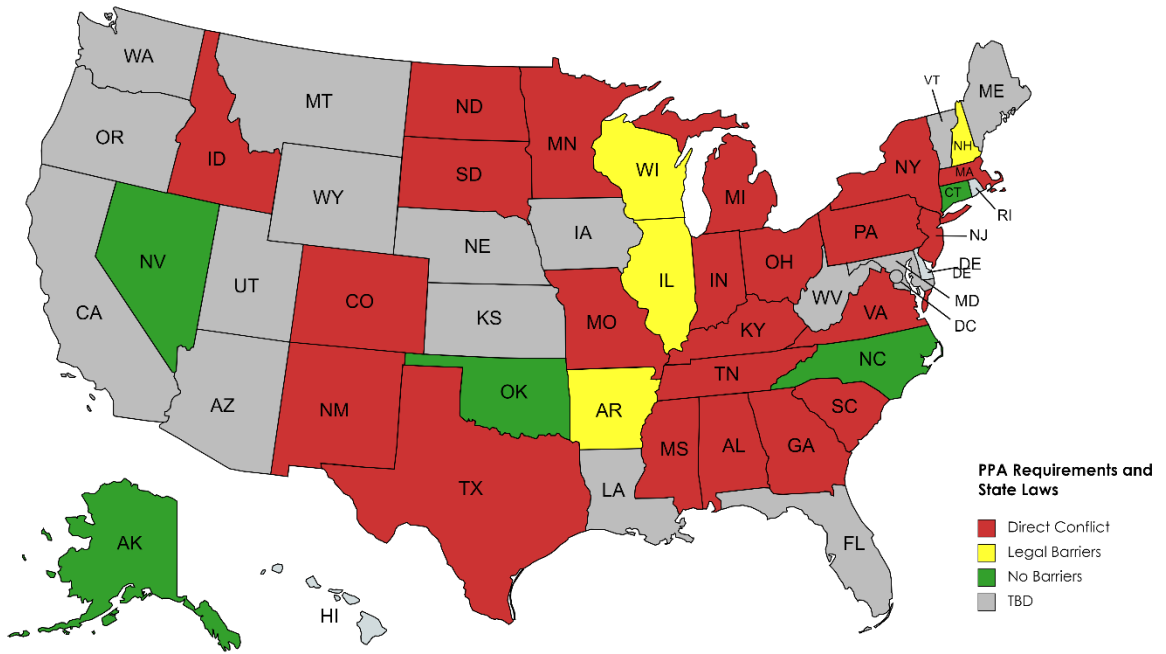
National Association of Flood and Stormwater Management Agencies

Susquehanna River Basin Commission

² Water Resources Development Act, PL 99-662, Sec. 103(j)(1) (1986).

The Nature Conservancy
Theodore Roosevelt Conservation Partnership
Upper Mississippi River Basin Association

Attachment 1: PPA Requirements and State Laws Map



Created with mapchart.net

Source:
Association of Fish & Wildlife Management Agencies. Member Survey. September 2023.

PRESS RELEASE

September 26, 2023

Contact: Kirsten Wallace, Executive Director
Upper Mississippi River Basin Association
(651) 224-2880, kwallace@umrba.org

UMRBA Announces Expansion of the Navigation Assets Inventory to Include Navigable Missouri River

The Upper Mississippi River Basin Association (UMRBA) is expanding on a regional effort to improve freight mobility through innovative, strategic approaches as well as to promote the inland waterways to improve the nation's overall transportation system.

The Upper Mississippi River System and the Missouri River are vital transportation corridors, connecting the Midwest to the world economy. "Use of the Upper Mississippi and Missouri Rivers for freight supports and improves the flexibility of the entire U.S transportation system, and increases our economic competitiveness in a global marketplace," says Iowa DOT Director Scott Marler.

"Through UMRBA, the states DOTs work collaboratively to achieve full integration of the inland waterways into the nation's surface transportation system, ensuring that reliable, regularly scheduled, competitive, sustainable services are routine choices for shippers in the Midwest," says Missouri DOT Director Patrick McKenna.

The Navigation Assets Inventory, launched in 2021, is an interactive map that features ports, terminals, boat accesses, and other navigation-related information on Marine Highways 35 and 55, allowing users to search for intermodal access with a certain dock type or storage capacity. The expansion of the Navigation Assets Inventory includes an additional 734 miles of navigable river from Sioux City to St. Louis, including 2 ports, over 50 terminals, and 14 live National Weather Service and U.S. Geological Survey stream gauges.

The expanded Navigation Assets Inventory now includes Marine Highways 35, 55, 29, and 70, creating new opportunities for ports, terminals, and operators to access federal funding, technical support, and other resources to expand or develop new shipping services and make the Missouri and Upper Mississippi Rivers a more cost-effective and self-sustaining transportation route.

UMRBA hosts the Navigation Assets Inventory as part of its efforts to facilitate interstate coordination and leadership on behalf of the five Upper Mississippi River states – Illinois, Iowa, Minnesota, Missouri, and Wisconsin. UMRBA continues to work to strengthen the Upper Mississippi River transportation mobility and utilization, and to ensure multi-use management of the Upper Mississippi River System.

The recently expanded Navigation Assets Inventory is available here: <https://umrba.org/navigation-assets-inventory>.

About the Upper Mississippi River Basin Association — The Upper Mississippi River Basin Association (UMRBA) is a five-state interstate organization formed by the Governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin to coordinate the states' river-related programs and policies and work with federal agencies that have river responsibilities. The UMRBA is structured as a 501(c) non-profit association, with the Board of Directors composed of all duly Governor-appointed representatives and alternatives. For more information about UMRBA, visit its website at www.umrba.org.

Natalie Lenzen

From: Tidemann, Jason (DNR) <jason.tidemann@state.mn.us>
Sent: Thursday, October 12, 2023 11:27 AM
To: Natalie Lenzen
Cc: Kirsten Wallace, UMRBA
Subject: RE: UMRBA July 1 - September 30 Treasurer Report

Hello Kirsten,

As Treasurer, I have reviewed the monthly financial statements for the period 7/1/23-9/30/23. 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

From: Natalie Lenzen <nlenzen@umrba.org>
Sent: Wednesday, October 11, 2023 4:07 PM
To: Tidemann, Jason (DNR) <jason.tidemann@state.mn.us>
Subject: UMRBA July 1 - September 30 Treasurer Report

This message may be from an external email source.

Do not select links or open attachments unless verified. Report all suspicious emails to Minnesota IT Services Security Operations Center.

Jason –

I would like to request your statement of review of our July 2023 through September 2023 financials for the Treasurer's report in the October 24, 2023 UMRBA Board meeting packet.

Please let me know if you have any questions or need any further information.

Thank you,
Natalie

Natalie Lenzen
Operations Manager | Upper Mississippi River Basin Association (UMRBA)
7831 E. Bush Lake Rd., Suite 302, Bloomington, MN 55439
nlenzen@umrba.org | 651-224-2880 (*office*)
Find us online at www.umrba.org or [Facebook](#)

Upper Mississippi River Basin Association

FY 2023 Profit & Loss Budget Overview

July 2022 - June 2023

	TOTAL		
	ACTUAL	BUDGET	OVER BUDGET
Revenue			
4000 State Dues			
Illinois Dues	63,500.00	63,500.00	0.00
Iowa Dues	63,500.00	63,500.00	0.00
Minnesota Dues	63,500.00	63,500.00	0.00
Missouri Dues	63,500.00	63,500.00	0.00
Wisconsin Dues	63,500.00	63,500.00	0.00
WQ Assessment	102,500.00	102,500.00	0.00
Total 4000 State Dues	420,000.00	420,000.00	0.00
4100 Contracts and Grants			
COE (RTC)	33,500.00	33,500.00	0.00
COE (UMRR)	99,527.59	85,716.60	13,810.99
EPA (OPA)	218,165.40	240,000.00	-21,834.60
Interstate WQ Pilot	12,352.96	2,640.00	9,712.96
NESP		1.00	-1.00
USEPA (OWOW)	68,454.15	82,000.00	-13,545.85
Total 4100 Contracts and Grants	432,000.10	443,857.60	-11,857.50
4200 Interest Income	406.69		406.69
Short Term Interest			
Short Term (CD)		4,000.00	-4,000.00
Short Term (Checking)	3,760.67	4,800.00	-1,039.33
Short Term (Savings)	405.56	400.00	5.56
Short Term (Sweep)	3,258.53	3,000.00	258.53
Total Short Term Interest	7,424.76	12,200.00	-4,775.24
Total 4200 Interest Income	7,831.45	12,200.00	-4,368.55
4300 Other Income			
Meeting Meals Income	810.00		810.00
Workshop Meals Income	660.00		660.00
Total 4300 Other Income	1,470.00		1,470.00
Total Revenue	\$861,301.55	\$876,057.60	\$ -14,756.05
GROSS PROFIT	\$861,301.55	\$876,057.60	\$ -14,756.05
Expenditures			
5000 Depreciation			
Gross Payroll			
Benefits	103,400.53	125,000.00	-21,599.47
Benefits OPA	3,372.24	0.00	3,372.24
Benefits STC	0.00	0.00	0.00
Benefits UMRBA Time	0.00	0.00	0.00
OPA Wages	72,026.07	0.00	72,026.07
UMRBA Time Wages	1.75	0.00	1.75
Total Gross Payroll	178,800.59	125,000.00	53,800.59
Total 5000 Depreciation	178,800.59	125,000.00	53,800.59

Upper Mississippi River Basin Association

FY 2023 Profit & Loss Budget Overview

July 2022 - June 2023

		TOTAL	
	ACTUAL	BUDGET	OVER BUDGET
5001 Payroll Expenses			
Medicare Company	8,542.30	8,627.50	-85.20
Salary	414,262.72	470,000.00	-55,737.28
SocSec Company	35,133.94	36,890.00	-1,756.06
SUTA (Minnesota UC)	857.34	297.50	559.84
Taxes	2,170.87		2,170.87
Workforce Enhancement Fee	362.80	297.50	65.30
Total 5001 Payroll Expenses	461,329.97	516,112.50	-54,782.53
5002 Benefits Administration	977.00	1,000.00	-23.00
5100 Space Rental			
Office Rental	51,050.96	53,000.00	-1,949.04
Total 5100 Space Rental	51,050.96	53,000.00	-1,949.04
5101 Legal and Financial			
Bank Charges	69.00	70.00	-1.00
Insurance	5,977.55	6,200.00	-222.45
Legal and Tax Services	13,170.00	15,000.00	-1,830.00
Total 5101 Legal and Financial	19,216.55	21,270.00	-2,053.45
5102 Telephone/Communications	12,829.26	8,000.00	4,829.26
5103 Communications/Publications	41,461.00	35,000.00	6,461.00
5104 Equipment			
Equipment (Maint./Rental)	2,690.36	1,000.00	1,690.36
Equipment (Purchase)	5,500.07		5,500.07
Total 5104 Equipment	8,190.43	1,000.00	7,190.43
5105 Supplies	938.11	1,500.00	-561.89
5106 Postage	119.89	300.00	-180.11
5107 Other Services	15,287.00	6,000.00	9,287.00
5108 Reproduction			
Copy Service	322.58	600.00	-277.42
Printing		0.00	0.00
Total 5108 Reproduction	322.58	600.00	-277.42
5200 Meeting Expenses	42,685.66	30,000.00	12,685.66
5201 Travel	42,796.52	40,000.00	2,796.52
5202 State Travel Reimbursement			
Illinois	2,317.14	5,000.00	-2,682.86
Iowa	3,103.44	5,000.00	-1,896.56
Minnesota		5,000.00	-5,000.00
Missouri	739.23	5,000.00	-4,260.77
State WQ Travel		3,500.00	-3,500.00
Wisconsin		5,000.00	-5,000.00
Total 5202 State Travel Reimbursement	6,159.81	28,500.00	-22,340.19
5301 OPA Expenses			
Equipment (Maint./Rental) OPA	5,731.98	6,500.00	-768.02

Upper Mississippi River Basin Association

FY 2023 Profit & Loss Budget Overview

July 2022 - June 2023

	TOTAL		
	ACTUAL	BUDGET	OVER BUDGET
Equipment OPA	1,204.26	1,000.00	204.26
Other OPA		50.00	-50.00
Travel OPA	2,430.29	2,000.00	430.29
Total 5301 OPA Expenses	9,366.53	9,550.00	-183.47
5302 USEPA NRS Workshops			
Communications	21,558.28	3,900.00	17,658.28
Meeting Expenses	5,081.03	40,000.00	-34,918.97
Supplies		100.00	-100.00
Travel	2,745.33	4,700.00	-1,954.67
Travel Assistance	4,851.85	10,000.00	-5,148.15
Total 5302 USEPA NRS Workshops	34,236.49	58,700.00	-24,463.51
5303 Interstate WQ Expenses			
Data Collection/Analysis IntWQ		0.00	0.00
Other Interstate WQ	150.00	0.00	150.00
Total 5303 Interstate WQ Expenses	150.00	0.00	150.00
Total Expenditures	\$925,918.35	\$935,532.50	\$ -9,614.15
NET OPERATING REVENUE	\$ -64,616.80	\$ -59,474.90	\$ -5,141.90
NET REVENUE	\$ -64,616.80	\$ -59,474.90	\$ -5,141.90

Upper Mississippi River Basin Association

FY 2024 Profit & Loss Budget Overview

July 2023 - June 2024

		TOTAL	
	ACTUAL	BUDGET	OVER BUDGET
Revenue			
4000 State Dues			
Illinois Dues	67,000.00	67,000.00	0.00
Iowa Dues	50,250.00	67,000.00	-16,750.00
Minnesota Dues	33,500.00	67,000.00	-33,500.00
Missouri Dues	67,000.00	67,000.00	0.00
Wisconsin Dues	67,000.00	67,000.00	0.00
WQ Assessment	86,400.00	108,000.00	-21,600.00
Total 4000 State Dues	371,150.00	443,000.00	-71,850.00
4100 Contracts and Grants			
COE (UMRR)	0.00	135,500.00	-135,500.00
EPA (OPA)	46,222.61	240,000.00	-193,777.39
Interstate WQ Pilot	0.00	0.00	0.00
Missouri DoC (WLM)		0.00	0.00
NESP		200,000.00	-200,000.00
USEPA (HTF)		75,000.00	-75,000.00
USEPA (OWOW)	6,874.76	80,000.00	-73,125.24
USGS Nature-Based Solutions		50,000.00	-50,000.00
Total 4100 Contracts and Grants	53,097.37	780,500.00	-727,402.63
4200 Interest Income			
Short Term Interest			
Short Term (CD)		17,300.00	-17,300.00
Short Term (Checking)	1,166.95	6,000.00	-4,833.05
Short Term (Savings)		0.00	0.00
Short Term (Sweep)	395.85	8,400.00	-8,004.15
Total Short Term Interest	1,562.80	31,700.00	-30,137.20
Total 4200 Interest Income	1,562.80	31,700.00	-30,137.20
4300 Other Income			
Meeting Meals Income	80.00		80.00
Workshop Meals Income	440.00		440.00
Total 4300 Other Income	520.00		520.00
Total Revenue	\$426,330.17	\$1,255,200.00	\$ -828,869.83
GROSS PROFIT	\$426,330.17	\$1,255,200.00	\$ -828,869.83
Expenditures			
5001 Payroll Expenses			
ICHR	425.78		425.78
Salary	192,061.76	810,383.77	-618,322.01
SUTA (Minnesota UC)		405.34	-405.34
Taxes	14,797.73	62,017.30	-47,219.57
Workforce Enhancement Fee		405.34	-405.34
Total 5001 Payroll Expenses	207,285.27	873,211.75	-665,926.48
5002 Benefits Administration	1,086.00	1,000.00	86.00

Upper Mississippi River Basin Association

FY 2024 Profit & Loss Budget Overview

July 2023 - June 2024

	TOTAL		
	ACTUAL	BUDGET	OVER BUDGET
5100 Space Rental			
Office Rental	18,566.52	55,089.00	-36,522.48
Total 5100 Space Rental	18,566.52	55,089.00	-36,522.48
5101 Legal and Financial			
Bank Charges		40.00	-40.00
Insurance	905.00	6,200.00	-5,295.00
Legal and Tax Services		5,000.00	-5,000.00
Total 5101 Legal and Financial	905.00	11,240.00	-10,335.00
5102 Telephone/Communications	6,710.75	8,000.00	-1,289.25
5103 Communications/Publications	16,365.00	50,000.00	-33,635.00
5104 Equipment	86.59		86.59
Equipment (Maint./Rental)	-559.46	1,000.00	-1,559.46
Equipment (Purchase)	3,163.19		3,163.19
Total 5104 Equipment	2,690.32	1,000.00	1,690.32
5105 Supplies	419.07	5,000.00	-4,580.93
5106 Postage		200.00	-200.00
5107 Other Services	6,417.50	10,000.00	-3,582.50
5200 Meeting Expenses	5,127.12	50,000.00	-44,872.88
5201 Travel	8,298.02	50,000.00	-41,701.98
5202 State Travel Reimbursement			
Illinois	714.80	5,000.00	-4,285.20
Iowa		5,000.00	-5,000.00
Minnesota		5,000.00	-5,000.00
Missouri	809.20	5,000.00	-4,190.80
State WQ Travel	201.96	3,500.00	-3,298.04
Wisconsin		5,000.00	-5,000.00
Total 5202 State Travel Reimbursement	1,725.96	28,500.00	-26,774.04
5300 USGS Nature-Based Solutions			
Other Contractual Services		30,000.00	-30,000.00
UMRBA Contractual Services		8,000.00	-8,000.00
Total 5300 USGS Nature-Based Solutions		38,000.00	-38,000.00
5301 OPA Expenses			
Equipment (Maint./Rental) OPA	530.10	6,500.00	-5,969.90
Equipment OPA	4,186.46	1,000.00	3,186.46
Other OPA		50.00	-50.00
Travel OPA	2,170.15	2,000.00	170.15
Total 5301 OPA Expenses	6,886.71	9,550.00	-2,663.29
5302 USEPA NRS Workshops			
Communications	600.00	3,900.00	-3,300.00
Meeting Expenses	2,774.05	40,000.00	-37,225.95
Supplies		100.00	-100.00
Travel	24.45	4,700.00	-4,675.55

Upper Mississippi River Basin Association

FY 2024 Profit & Loss Budget Overview

July 2023 - June 2024

		TOTAL	
	ACTUAL	BUDGET	OVER BUDGET
Travel Assistance		10,000.00	-10,000.00
Total 5302 USEPA NRS Workshops	3,398.50	58,700.00	-55,301.50
Total Expenditures	\$285,881.74	\$1,249,490.75	\$ -963,609.01
NET OPERATING REVENUE	\$140,448.43	\$5,709.25	\$134,739.18
NET REVENUE	\$140,448.43	\$5,709.25	\$134,739.18

Upper Mississippi River Basin Association

Balance Sheet

As of October 12, 2023

	TOTAL
ASSETS	
Current Assets	
Bank Accounts	
Checking HT 2732	195,765.55
Investment	
CD	407,100.42
Sweep HT 5401	259,904.13
Total Investment	667,004.55
Total Bank Accounts	\$862,770.10
Accounts Receivable	
Contract/grants	
Invoiced/Billable	46,141.88
Total Contract/grants	46,141.88
Total Accounts Receivable	\$46,141.88
Other Current Assets	
Prepaid Expense	8.00
Office Rental Prepaid Expense	8,244.10
Total Prepaid Expense	8,252.10
Total Other Current Assets	\$8,252.10
Total Current Assets	\$917,164.08
Fixed Assets	
604(b) Equipment	568.95
Accum. Deprec. 604(b)	-568.95
Accum. Deprec. OPA	-21,703.53
Accum. Deprec. STC	-2,989.68
Accum. Deprec. UMRBA	-31,613.35
Accum. Deprec. WQ	-1,290.00
OPA Equipment	21,705.26
STC Equipment	4,332.67
UMRBA Equipment	34,524.70
WQ Equipment	1,290.47
Total Fixed Assets	\$4,256.54
TOTAL ASSETS	\$921,420.62

Upper Mississippi River Basin Association

Balance Sheet

As of October 12, 2023

	TOTAL
LIABILITIES AND EQUITY	
Liabilities	
Current Liabilities	
Credit Cards	
Visa Chase 5294	7,084.32
Total Credit Cards	\$7,084.32
Other Current Liabilities	
Deferred MO DoC (WLM) Revenue	4,206.05
Office Expense Liabilities	
Travel Expense	1,619.60
Total Office Expense Liabilities	1,619.60
Payroll Liabilities	-695.34
Accrued Vacation	45,786.20
Accrued Vacation FICA	3,502.65
Federal Withholding	189.00
Medicare	
Medicare Company	39.17
Medicare Employee	39.17
Total Medicare	78.34
Minnesota Withholding	-1,113.17
MN Income Tax	1,206.17
MN Unemployment Taxes	-14.72
Social Security	
SocSec Company	167.50
SocSec Employee	167.50
Total Social Security	335.00
SUTA (Minnesota UC)	327.72
Workforce Enhancement Fee	337.18
Total Payroll Liabilities	49,939.03
Total Other Current Liabilities	\$55,764.68
Total Current Liabilities	\$62,849.00
Total Liabilities	\$62,849.00
Equity	
Retained Earnings	718,123.19
Net Revenue	140,448.43
Total Equity	\$858,571.62
TOTAL LIABILITIES AND EQUITY	\$921,420.62

ATTACHMENT C

UMRBA How Clean is the River? Report (8-2023)

- Conclusions and Recommendations (C-1)
- Webpage and Full Report: <https://umrba.org/howcleanriver>

Conclusion and Recommendations

Understanding and improving water quality of the Upper Mississippi River and Illinois River (collectively referred to as the Upper Mississippi River System; “UMRS” or “System”) is vital to the prosperity and sustainability of human communities and economies within the watershed.

Collecting, compiling, and analyzing water quality data is essential to understanding and improving water quality in the UMRS.

This report has generated the following conclusions:

NOTABLE POSITIVE TRENDS

- Dissolved oxygen concentrations have increased throughout the UMRS
- Total suspended solids have decreased significantly throughout the System
- Total phosphorus concentrations have decreased in the UMR above Pool 13
- Total nitrogen and inorganic nitrogen have decreased in the La Grange Pool of the Illinois River
- Lead has decreased in UMR Pool 4

NOTABLE NEGATIVE TRENDS

- Concentrations of chloride and sulfate have increased throughout the System
- Conductivity has increased throughout the System
- Total phosphorus is increasing in UMR Pool 26
- Ammonia is increasing in UMR Pool 15
- Lead has increased in UMR Pools 15 and 17 but levels are below the chronic aquatic life use threshold

IMPORTANT DATA GAPS

- Water quality monitoring frequency, sampling methods, and laboratory analytical methods are not consistent across the Upper Mississippi River System
- Metals data and emerging contaminants data is not collected sufficiently for analyzing trends
- Important data gaps continue to reduce our ability to effectively identify problems and target management actions to protect water quality

MANAGEMENT RECOMMENDATIONS

- State and local governments, as well as conservation and agricultural organizations, should continue to support actions that will maintain positive trends, in particular the total suspended solids and nitrogen and phosphorus improvements that have likely occurred due to changes in land management
- State and local governments, as well as conservation, agricultural, and transportation organizations, should continue to take actions to address negative trends, in particular managing and reducing of chloride, nitrogen, and phosphorus pollution
- State and local governments, as well as conservation, agricultural, and transportation organizations, should continue to support data collection efforts that fill in important information gaps, in particular supporting the Upper Mississippi River Interstate Water Quality Monitoring Plan to provide consistent and uniform data collection on the Upper Mississippi River

ATTACHMENT D

USFWS Inflation Reduction Act Allocation Press Release (3/7/2023)

(D-1 to D-3)



Over \$120M From Inflation Reduction Act Advances Resilience

Image Details

PRESS RELEASE

Inflation Reduction Act Invests Over \$120 Million in Proven Projects to Advance Climate Resilience, Conservation and Equity

Mar 7, 2023

Media Contacts

Sue Kerver


WASHINGTON —The Department of the Interior today announced a more than \$120 million investment from the Inflation Reduction Act to rebuild and restore units of the National Wildlife Refuge System and partnering State Wildlife Management Areas that have been affected by adverse weather events. The investment prioritizes projects that promote coastal resilience and climate adaptation, address invasive species threats, and provide for additional data collection needed to support successful natural resource resilience.


The Inflation Reduction Act is enabling the Department of the Interior to play a leading role in the transition to a clean energy economy, advancing key habitat restoration, land resilience and water projects and securing environmental justice for historically disadvantaged communities.

“Communities across the country continue to face the devastating impacts of weather events made even more extreme due to climate change . The Inflation Reduction Act is a historic and transformational investment towards achieving President Biden’s ambitious goals to help American families and tackle the climate crisis,”

said **Secretary Deb Haaland**. “These projects will increase the resiliency of habitats and infrastructure to withstand severe and unanticipated weather events, furthering our work to restore America’s natural infrastructure through nature-based solutions.”

“The Inflation Reduction Act supports the work of the U.S. Fish and Wildlife Service and its conservation partners, and helps local, state and Tribal communities tackle the climate crisis while advancing endangered species priorities and environmental justice,” said **Service Director Martha Williams**. “These investments will advance climate resilience, support habitat and critically important breeding areas and support the recovery of endangered species.”

Today’s announcement follows the release of the Department’s [restoration and resilience framework](#) , a plan to leverage historic investments in climate and conservation to achieve landscape-level outcomes across the nation. Through President Biden’s [Bipartisan Infrastructure Law](#) and the Inflation Reduction Act, the Department is implementing a more than \$2 billion downpayment to restore our nation’s lands and waters. The framework lays out an initial set of keystone initiatives to guide historic investments from both laws, which are focused on addressing the climate and biodiversity crises, advancing co-stewardship and equity, furthering locally-led, collaborative strategies and focusing landscape-scale restoration work on areas where the Department has an opportunity have a transformational impact at scale.

The funding announced today advances the goals of the framework as well as the Department’s grasslands keystone initiative through investments in prairie potholes and bison management. More than \$7 million of the funding will be dedicated to advancing bison and grasslands restoration, consistent with a new [Secretary’s Order](#) . Examples of investments include funding for new fencing at [Rocky Mountain Arsenal National Wildlife Refuge](#) in Colorado to allow the refuge’s bison herd to graze on an additional 4,500 acres; improving the quality of over 2,000 acres of grasslands; and ensuring consistent access to water for the herd in the face of worsening drought conditions. Another project includes funding to [Rio Mora National Wildlife Refuge](#) in New Mexico to support a co-stewardship effort with the Pueblo of Pojoaque for management and expansion of the Pueblo’s bison herd on the refuge.

The U.S. Fish and Wildlife Service will work with state partners to complete geographically diverse, large-scale projects that are mutually beneficial for these conservation areas, including projects that benefit historically underserved communities and Tribal interests.

The list of projects include:

\$27.25 million for the Albemarle-Pamlico Sound restoration in North Carolina.

\$25 million to create a landscape conservation approach for a climate resilient Northern Forest in the Midwest and Northeastern regions of the United States.

\$23 million for landscape conservation and restoration in the Prairie Pothole Region (Iowa, Minnesota, Montana, North Dakota and South Dakota).

\$20 million for nature-based resiliency in the Lower Mississippi River Valley, encompassing parts of Arkansas, Louisiana, Mississippi and Tennessee.

\$10 million for nature-based resiliency and restoration in the Upper Mississippi and Illinois River to include parts of Illinois, Iowa, Minnesota, Missouri and Wisconsin.

\$7.5 million for bison management and grasslands habitat improvements across several Service refuges.

\$7 million for nature-based solutions to support the endangered Yaqui fish species on [San Bernardino National Wildlife Refuge](#) in Arizona.

\$1 million for the acquisition of LiDAR Data over National Wildlife Refuge System lands in partnership with the 3D Elevation Program.

The announcement also comes as the [Endangered Species Act \(ESA\) turns 50 years old](#) in 2023. Throughout the year, the Department is celebrating the importance of the ESA in preventing the extinction of imperiled species, promoting the recovery of wildlife and conserving the habitats upon which they depend. Each of the projects funded plays a significant role in protecting habitats and species at risk of extinction.

Get more information about the Service's [Inflation Reduction Act](#)-related efforts.

The U.S. Fish and Wildlife Service works with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people. For more information, visit www.fws.gov and connect with us on social media:

[Facebook](#) [Instagram](#), [Twitter](#), [LinkedIn](#), [Flickr](#) and [YouTube](#).

Story Tags

CLIMATE CHANGE

ECOLOGICAL RESILIENCE

ENVIRONMENTAL JUSTICE



Press Release

Published

Mar 7, 2023

Climate Change

Media Contacts

Sue Kerver

ATTACHMENT E

Upper Mississippi River Levee and Floodwall Design Standards Proposed Legislation (H.R. 5722)

- Overview (*E-1*)
- UMIMRA Press Release (9/26/2023) (*E-2 to E-3*)
- House-Introduced Measure (9/26/2023) (*E-4 to E-7*)

UPPER MISSISSIPPI RIVER LEVEE AND FLOODWALL DESIGN STANDARDS

Problem:

Changing weather conditions have altered Flow Frequency profiles in the Upper Mississippi. The region's current level of protection has not been updated to coordinate with these changes. USACE prepared Design Memorandums for the individual Levee Districts to be maintained by the local sponsors. Each district's level of design was based on the benefits protected. Rural Districts were set at a 50-year frequency design profile, plus freeboard to allow for settlement, wave wash, and other uncertainties. Levee districts with both rural and lower populated urban areas were set at 100-year frequency plus freeboard, and more concentrated urban and industrial areas were set at the 500-year level of protection plus freeboard.

Flood frequency and flood profiles have significantly changed since completion of USACE construction. The WRDA Bill uses improved hydrology and hydraulic information to address this change in weather conditions, allowing the local sponsor of these federal works to maintain their originally designed, or prior USACE-approved, level of protection.

Maintaining Upper Mississippi River levees according to current weather and flow conditions will save significant federal, state, and local dollars. Damages in 1993 and 2008 exceeded 15 billion dollars each. Flood damages over the last 50 years, such as the major floods in 1973, 1993, 2008, and 2019, could have been prevented.

Opportunity:

A levee district is a political subdivision of their respective state, similar to a municipality. Each Upper Mississippi levee district, as the local sponsor of the Federal levee, has similar authorities in each State to assess benefits for both flood protection and drainage. These annual and special assessments provide funds by those protected for operation and maintenance of the levee district.

Operation and Maintenance manuals, provided by USACE for these federal levees, provide guidance for flood fighting and other responsibilities, including alterations and encroachments as approved pursuant to 33 CFR 208.10. However, changes in rainfall conditions have put the Upper Mississippi River levees in serious peril. Current guidance from USACE has not been supportive of the local sponsors' ability to maintain their original level of protection as flow frequencies have changed.

Objectives:

The proposed bill is to require USACE to update the Upper Mississippi River flow frequencies no less than every 20 years. The bill calls for adequate public input during these periodic updates of the Flow Frequencies profiles. The bill covers the federal levees in the Upper Mississippi not covered by the Mississippi Rivers & Tributary Act – basically from Cape Girardeau, Missouri, up to Guttenberg, Iowa. The bill does not change the risk transfer from the original USACE designs or prior approved alterations. USACE restoration work under PL84-99 shall be consistent with current USACE flood frequency profiles. The Bill clarifies maintenance as maintaining the local sponsors' original or prior approved level of protection. Maintaining the level of protection is voluntary and at local expense.

: The Upper Mississippi River Federally Improved levees have various authorities including the Flood Control Act of 1946; Flood Control Act of 1954; Flood Control Act of 1962; and foundational authority under the Mississippi River, Between Coon Rapids Dam and the Mouth of Ohio River, Section 10 of the Flood Control Act of 1928 for the purpose of Navigation and Efficient Development of its Water Power, the Control of Floods and the needs of Irrigation.

September 27, 2023
For Immediate Release

Contact:

Tim Maiers, Executive Director, Upper Mississippi, Illinois & Missouri Rivers Association
(217) 257-1020 – tim@umimra.org

Landmark Levee Safety Act Unveiled to Safeguard Upper Mississippi Region

(Quincy, IL) – 2023 marks the 30th anniversary of the 1993 flood of the Upper Mississippi River. The historic flood caused billions of dollars in damages, displaced more than 74,000 people from their homes, and disrupted the region’s transportation and economy. During the last 15 years, the Upper Mississippi River watershed has experienced more frequent flooding with higher river stages with major floods happening in 2008, 2013, 2014, and 2019.

“Flooding in the Upper Mississippi River Valley has been a repeated occurrence for many years. Precipitation events are becoming more intense and happening more often, causing more runoff, leading to more flooding,” said Mike Klingner, chairman of the Upper Mississippi, Illinois & Missouri Rivers Association (UMIMRA). “It’s time to make some significant progress on adequate levee maintenance and preventing future disasters for the Upper Mississippi River.”

Current U.S. Army Corps of Engineers (USACE) policy does not allow levee districts the ability to maintain their levees to their original level of protection authorized. USACE policy does not match Federal Emergency Management Agency (FEMA) policy which requires levee districts to maintain their level of protection or risk losing their levee accreditation.

“USACE policies, such as the current 408 process, are making the Upper Mississippi River LESS safe by not allowing any adjustments to levees due to change in rainfall conditions and updated flood frequency profiles,” said Klingner.

UMIMRA is seeking federal legislation to correct the discrepancy between these federal agencies and help prevent future disasters. UMIMRA has worked closely with Congresswoman Mary Miller’s office (R-IL 15th) in developing the *Upper Mississippi River Levee Safety Act*, which was introduced in the House of Representatives on September 26th. Other co-sponsors of the legislation include Congressman Mike Bost (R-IL 16th), Congressman Darin LaHood (R-IL 12th), and Congressman Eric Sorensen (D-IL 17th).

The Levee Safety Act would require the USACE to update, at least every 20 years, the Mississippi River levee and floodwall design standards to reflect current flood profiles and rainfall frequencies. This would allow local levee districts to maintain their originally Congressional authorized, prior approved, and USACE designed level of flood protection.

The updated standard would only apply to federally improved levees along the Mississippi River between Cape Girardeau, MO and Guttenberg, IA. This proposal would save significant FEMA and PL 84-99 funds by reducing damages from flooding, and would restore Congress and

USACE's original intent to not have sand levees be overtopped, but have controlled entrance on hardened clay levees at the low end of the districts.

"This bill is a critical step to ensure that levee operators have the tools and flexibility they need to do essential maintenance along the Mississippi River," Congresswoman Mary Miller said. "The Mississippi levees protect countless homes and thousands of acres of farmland, and I'm proud to lead the effort in the House to protect Illinois communities from future flood threats. I am pleased to be joined on this bill by several of my colleagues from the Illinois Delegation. We look forward to working with Chairman Sam Graves and my colleagues on the House Transportation and Infrastructure Committee on this important issue, especially as the House begins work on the Water Resources Development Act (WRDA) next year."

The Bill clarifies maintenance as maintaining the local sponsors' original or prior approved level of protection. Maintaining the level of protection is voluntary and is at the local expense, not requiring any federal dollars.

"As the only meteorologist serving in Congress, I know how devastating the impacts of extreme weather can be to families, neighborhoods, and property," said Rep. Eric Sorensen. "I'm proud to work across the aisle to advance this bill that protects our region from the impacts of flooding along the Mississippi, supports our agriculture industry, and helps keep people safe."

"Farmers and families living along the Mississippi River know how devastating floods can be to our low-lying communities," said Rep. Mike Bost. "Oftentimes, our levees are all that stand between our people and the dangerous effects of a natural disaster. Investing in strengthening the levee system can truly be a matter of life and death. I am proud to support this legislation and will continue to do all I can to keep Southern Illinoisans safe."

"In central and northwestern Illinois, inland waterways are critical to the economic viability of our communities and allow small businesses, farmers and manufacturers to export commodities around the world," said Rep. Darin LaHood. "I am proud to join members of the Illinois Delegation to introduce this important legislation to improve levee operations along the Upper Mississippi River and provide local levee districts greater flexibility to maintain their systems."

In addition to UMIMRA, the *Upper Mississippi River Levee Safety Act* is also being supported by the Corn Belt Ports, the Tri-State Development Summit, and the Illinois Farm Bureau.

"This legislation maintains what Congress and the Corps originally intended, or prior approved based on benefits, so it would not change the impact to any other levee districts along the Upper Mississippi River, and as locally funded, would not be taking any federal dollars away from other districts," said Klingner. "The act would also benefit environmental conservation areas protected by levees. We are urging the Senators in Illinois, Missouri, and Iowa to introduce similar bi-partisan legislation in the Senate."

118TH CONGRESS
1ST SESSION

H. R. 5722

To require the Corps of Engineers to update Upper Mississippi River levee and floodwall design standards, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 26, 2023

Mrs. MILLER of Illinois (for herself, Mr. BOST, Mr. SORENSEN, and Mr. LAHOOD) introduced the following bill; which was referred to the Committee on Transportation and Infrastructure

A BILL

To require the Corps of Engineers to update Upper Mississippi River levee and floodwall design standards, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. UPPER MISSISSIPPI RIVER LEVEE AND**
4 **FLOODWALL DESIGN STANDARDS.**

5 (a) UPDATES REQUIRED.—

6 (1) IN GENERAL.—In carrying out the Upper
7 Mississippi River levee and floodwall projects, the
8 Secretary of the Army, acting through the Chief of
9 Engineers, shall not less frequently than every 20

1 years update the design probabilities used to estab-
2 lish the design profiles for levees and floodwalls,
3 using the most recent probabilities and flood fre-
4 quency profiles and current appropriate factors of
5 safety as needed for wave action, settlement, other
6 existing and anticipated future uncertainties, and
7 Federal Emergency Management Agency guidelines
8 to maintain accreditations.

9 (2) CONTENTS.—In updating the design prob-
10 abilities under paragraph (1), the Secretary shall ob-
11 tain public input at each stage of development, in-
12 cluding base elevation data, base hydrological and
13 hydraulic assumptions, and shall utilize a public in-
14 volvement group for meaningful public engagement
15 throughout the development of the updated flood
16 frequency profiles.

17 (b) UNIFORM FLOOD PROTECTION.—Local sponsors
18 of the Upper Mississippi River levee and floodwall projects
19 in paragraph (b) may maintain flood protection at levels
20 consistent with the profiles established under subsection
21 (a) such that—

22 (1) the maintenance for Uniform Flood Protec-
23 tion is hereby deemed as not injurious to the feder-
24 ally authorized flood protection project, and no
25 change in risk transfer from original Corps of Engi-

1 neers probability-based design, and previously ap-
2 proved alterations approved pursuant to section
3 208.10 of title 33, Code of Federal Regulations,
4 prior to 33 USC 408 EC 1165-2-216 dated 31,
5 July 2014;

6 (2) alterations to the Upper Mississippi River
7 levee and floodwall projects made prior to July 31,
8 2014, having met the standard established by sec-
9 tion 208.10 of title 33, Code of Federal Regulations,
10 are hereby federally authorized;

11 (3) repairs made by the United States of Amer-
12 ica pursuant to section 5 of the Flood Control Act
13 of 1941 (33 U.S.C. 701n) shall be consistent with
14 the most recent probabilities and flood frequency
15 profiles and appropriate factors of safety;

16 (4) maintenance under this section shall include
17 local sponsor alteration or improvement of the
18 Upper Mississippi River levee and floodwall projects
19 to the prior approved level of protection using the
20 profiles established under subsection (a);

21 (5) maintenance to meet current flood fre-
22 quency profiles shall be within section 208.10 of title
23 33, Code of Federal Regulations, and coordinated
24 with the local sponsor's respective St. Louis or Rock
25 Island Corps of Engineers District, to preserve the

1 existing and prior approved systemic flood damage
2 reduction planning, in general of rural areas pro-
3 tected to the 2 percent probability event, districts
4 protecting combination urban, critical infrastructure,
5 and rural areas at 1 percent and districts protecting
6 highly industrial or all urban at 0.2 percent levels,
7 as prior Corps of Engineers approved; and

8 (6) maintenance to meet current flood fre-
9 quency profiles are voluntary and shall be the local
10 sponsor's responsibility at local sponsor's cost.

11 (c) PROJECT DEFINED.—In this section, the term
12 “Upper Mississippi River levee and floodwall projects”
13 means the federally authorized projects for flood protec-
14 tion on the Upper Mississippi River that include—

15 (1) levees or floodwalls in the region from Ham-
16 burg, Illinois, to Guttenberg, Iowa;

17 (2) levees in the region from Cape Girardeau,
18 Missouri, to Hamburg, Illinois; and

19 (3) federally improved levees with local spon-
20 sors.

○

ATTACHMENT F

Lower Missouri River Flood Risk and Resilience Study

- Fact Sheet (*F-1*)
- Executive Summary of Flow Frequency Study (*F-2 to F-13*)
- Websites
 - Missouri DNR: <https://dnr.mo.gov/water/what-were-doing/initiatives/lower-missouri-river-flood-resiliency>
 - USACE: <https://www.nwk.usace.army.mil/Missions/Civil-Works/Civil-Works-Programs-And-Projects/Lower-Missouri-River-Basin/>



US Army Corps of Engineers®

Lower Missouri Basin Flood Risk & Resiliency Study

Authority: Section 216 (a) of Water Resources Development Act (WRDA) 2020



Lower Missouri Basin Overview:

The Lower Missouri River Basin extends 735 miles from Sioux City, IA to the mouth in St. Louis, Missouri, and includes multiple counties in Iowa, Kansas, Missouri, and Nebraska. The Basin drains thousands of square miles of rural and urbanized areas. There are more than 400 miles of levees and floodwall in the Missouri River Levee System (MRLS) Units authorized by the 1944 Flood Control Act, and other federal units provide flood protection. Other publicly owned and private levee projects are also present, many of them enrolled in the P.L. 84-99 Program.

Problem & Need:

The Lower Missouri River Basin sustained three devastating floods within 30 years: 1993, 2011, & 2019. The 2019 Flood caused billions of dollars in damages to agriculture, infrastructure, and in communities in the states of Iowa, Nebraska, Kansas and Missouri. Repair costs to levee infrastructure in the lower river in 2019 is approximately \$1.2 billion.

Proposed Solutions:

Lower Missouri River System: The System Plan is the strategic planning vehicle for both USACE and the State Partners to address future flood risk & system resiliency. Findings & recommendations will address flood risk management infrastructure, economic damages, future flood risk, and future site-specific studies. This strategic plan will have a suite of actions to guide collaborative flood risk management for USACE & state partners.

Additional Study Opportunities for Recurring Flood Problem Areas: Congress directed additional resources for planning at site specific areas with recurring flood problems. This concurrent effort allows for seamless progression into design for project areas with approved feasibility reports. Initial sites selected for further evaluation include Holt County, Brunswick, and Jefferson City in Missouri. More sites may be determined as the system plan progresses.

Anticipated Completion Date: Interim System Plan Report to Congress to be completed October 2023. Study completion date is March 2027.

Project Partners



MISSOURI DEPARTMENT OF NATURAL RESOURCES



Executive Summary

Lower Missouri River flow frequency was estimated at 10 gages from Yankton, SD, or Gavins Point Dam, to Hermann, MO, thus providing estimates of the Missouri River flow in cubic feet per second (cfs) associated with annual exceedance probabilities. This analysis incorporates new data and statistical analysis and applies state of the practice methodologies. These methods more completely assess risks for combinations of floods impacting portions of the basin downstream of the Missouri River reservoir system. Technological advances in methods, modeling capabilities, and computing power have strengthened the quality of data and analysis.

Previous flow frequency analysis on the lower Missouri River from Gavins Point Dam to Hermann, MO was completed in 2003 as part of the Upper Mississippi River System Flow Frequency Study (UMRSFFS) by the United States Army Corps of Engineers (USACE, 2003). The 2003 study was initiated following record flooding in 1993, updating previous flow frequencies published in 1962 using a period of record of 1898 to 1997. Several pieces of new information and technical advancements have become available since that time which warranted the update. Major flooding occurred on the Missouri River in 2011 and 2019. Bulletin 17C was published in 2018, replacing the previous Bulletin 17B federal guidelines for flow frequency estimation from 1982. Bulletin 17C incorporates methods to incorporate periods in between historical flood observations and gaps in the systematic record by means of perception thresholds, something not possible in 2003. Further, methods to detect non-stationarities in the flow data and qualitatively consider the effects of climate change per Engineering and Construction Bulletin (ECB) 2018-14 have also been developed.

Monte Carlo techniques in hydrology, referenced in Chapter 12 Engineering Manual (EM) 1110-2-1415, have advanced considerably as computing power has improved and have been used successfully for complex studies such as the Columbia River Treaty (CRT). With the creation of the Hydrologic Engineering Center (HEC) Watershed Analysis Tool (WAT), Monte Carlo techniques are being used more often. Hydrologic and hydraulic modeling software for water accounting and hydraulic calculations has undergone major upgrades with the HEC Reservoir Simulation (ResSim) and River Analysis System (RAS) software since 2003. Within the Missouri River Basin, HEC-ResSim and HEC-RAS models have been developed for the 2018 Missouri River Basin Management Plan and the Corps of Engineers Water Management Systems upgrades completed in 2021.

This study replicated the 2003 UMRSFFS methodology to compute unregulated flow frequency based on EM 1110-2-1415, Bulletin 17C, ECB 2018-14, and an updated period of record (POR) daily flows from 1930 to 2019. The POR daily flow record was computed by means of the Mainstem Missouri River Basin HEC-ResSim model, adjusting the flows for consistency with current depletions and for scenarios as if the dams were in place or were not in place the whole time, referred to as the "regulated" and "unregulated" flows,

respectively. As part of developing the POR, historical estimates of water usage, or depletions, have been updated by the U.S. Bureau of Reclamation. A 177-year historic period back to 1843/1844 was adopted when computing the Bulletin 17C unregulated flow frequencies. Sensitivity to earlier flood estimates and settlement dates was also considered for a historic period of 200 to 204 years at five study gages with detailed flood history information, and up to 321 years at Hermann and Boonville, MO.

Flows from the HEC-ResSim model with Gavins Point Dam as the upstream boundary condition were re-routed with HEC-RAS hydraulic models to assess the impact of hydraulic versus hydrologic routing methods, ultimately incorporating the HEC-ResSim results. Regulated flow frequencies were computed for this study first by mimicking the 2003 study in a method referred to as the "transform method". Additionally, a Monte Carlo simulation was performed using HEC-WAT controlling HEC-ResSim. The results of the Monte Carlo simulation are recommended for adoption as the estimate of regulated flow frequency on the lower Missouri River as the method more completely assesses risks for combinations of floods impacting portions of the basin downstream of the reservoir systems.

Monte Carlo analysis completed for this study took the CRT techniques and added the use of a "big bucket" synthetic record and a post-processing method. The "big bucket" synthetic record adds 500 events of synthetic data generated externally along with the 90 events in the historical record. Additionally, to improve the sampling at extreme probabilities, 15 synthetic events for the Missouri River Mainstem Reservoir System and 13 for the Kansas and Osage Basin Reservoirs were generated based on scaling of flood events and assigning a probability based on the most representative location for each event. The post-processing method allows the unregulated flow frequency curves produced by the WAT to match the Bulletin 17C frequency curves at each study location.

These results are summarized in Tables ES-1 for the Bulletin 17C unregulated flow frequencies and Table ES-2 for the Monte Carlo regulated flow frequencies. Bulletin 17C is the accepted method for computing unregulated flow frequencies. As shown in Section 6.3.3 and 7.6 of the report, unregulated flow frequency from HEC-WAT as sampled from the "big bucket" and synthetic events and routed through the HEC-ResSIM model is also shown to indicate how close they match the Bulletin 17C curves. Although climate change may already be impacting portions of the basin, results in this study are considered reflective of the existing conditions flows of the Missouri River Basin as detailed in Section 2.6 and 2.7. Results are valid for floods between a 99% and 0.2% annual exceedance probability (AEP) event. Extrapolating the results to estimate floods less frequent than the 0.2% AEP is not recommended without additional study. Conceptual examples showing results of the transform method and Monte Carlo method of computing regulated flow frequency are presented in Figures ES-1 and ES-2, respectively.

Table ES-1. Final Unregulated Bulletin 17C Flow Frequency Annual Exceedance Expected Probability (Flow in CFS)

AEP (%)	Yankton	Sioux City	Omaha	Nebraska City	Rulo	St Joseph	Kansas City	Waverly	Boonville	Hermann
0.2	686,000	719,000	727,000	730,000	715,000	707,000	835,000	848,000	924,000	1,230,000
0.4	565,000	591,000	602,000	617,000	608,000	607,000	738,000	751,000	827,000	1,090,000
0.5	531,000	555,000	567,000	584,000	578,000	578,000	709,000	723,000	798,000	1,050,000
1	438,000	458,000	471,000	497,000	497,000	500,000	624,000	639,000	711,000	928,000
2	362,000	378,000	391,000	424,000	429,000	435,000	547,000	562,000	630,000	816,000
4	301,000	313,000	327,000	364,000	372,000	379,000	476,000	490,000	553,000	710,000
5	283,000	295,000	309,000	346,000	356,000	362,000	454,000	468,000	528,000	676,000
10	236,000	246,000	258,000	296,000	307,000	314,000	387,000	401,000	454,000	575,000
20	196,000	203,000	215,000	251,000	262,000	268,000	322,000	334,000	379,000	473,000
50	144,000	150,000	159,000	189,000	198,000	205,000	231,000	239,000	269,000	327,000
80	110,000	114,000	121,000	147,000	154,000	160,000	169,000	174,000	191,000	226,000
90	96,200	99,500	106,000	129,000	136,000	141,000	145,000	148,000	160,000	186,000
95	86,400	89,300	95,500	117,000	123,000	128,000	128,000	130,000	138,000	158,000
99	70,900	73,200	78,600	96,600	101,000	107,000	100,000	101,000	103,000	114,600

Note: Table ES-1 is also reported as Table 3-19; Yankton / Gavins Point, Sioux City, Omaha, Nebraska City, Rulo, and St. Joseph are results of a mixed population analysis. Kansas City, Waverly, Boonville, and Hermann are results of a single population analysis.

Table ES-2. Summary of Regulated Flow Frequency Annual Exceedance % Probability (Flow in CFS) Produced by the Monte Carlo Analysis

AEP (%)	Yankton	Sioux City	Omaha	Nebraska City	Rulo	St Joseph	Kansas City	Waverly	Boonville	Hermann
0.2	213,000	285,000	351,000	480,000	510,000	526,000	640,000	674,000	731,000	933,000
0.4	169,000	268,000	312,000	399,000	432,000	444,000	555,000	588,000	702,000	742,000
0.5	164,000	266,000	293,000	382,000	422,000	433,000	546,000	573,000	672,000	722,000
1	164,000	218,000	232,000	329,000	336,000	349,000	467,000	503,000	572,000	666,000
2	104,000	156,000	187,000	244,000	294,000	296,000	393,000	412,000	531,000	571,000
4	81,000	121,000	154,000	220,000	250,000	255,000	312,000	323,000	417,000	506,000
5	77,000	111,000	151,000	212,000	233,000	239,000	293,000	294,000	393,000	473,000
10	64,000	89,000	118,000	171,000	187,000	197,000	247,000	251,000	334,000	416,000
20	54,000	71,000	99,000	132,000	148,000	157,000	197,000	214,000	280,000	345,000
50	44,000	47,000	62,000	88,000	101,000	107,000	136,000	142,000	204,000	262,000
80	38,000	41,000	47,000	61,000	65,000	75,000	97,000	101,000	134,000	175,000
90	35,000	38,000	43,000	54,000	57,000	66,000	82,000	86,000	109,000	142,000
95	33,000	36,000	40,000	49,000	51,000	59,000	72,000	75,000	97,000	123,000
99	28,000	32,000	37,000	42,000	44,000	52,000	58,000	59,000	78,000	100,000

Note: Table ES-2 is also reported as Table 6-18.

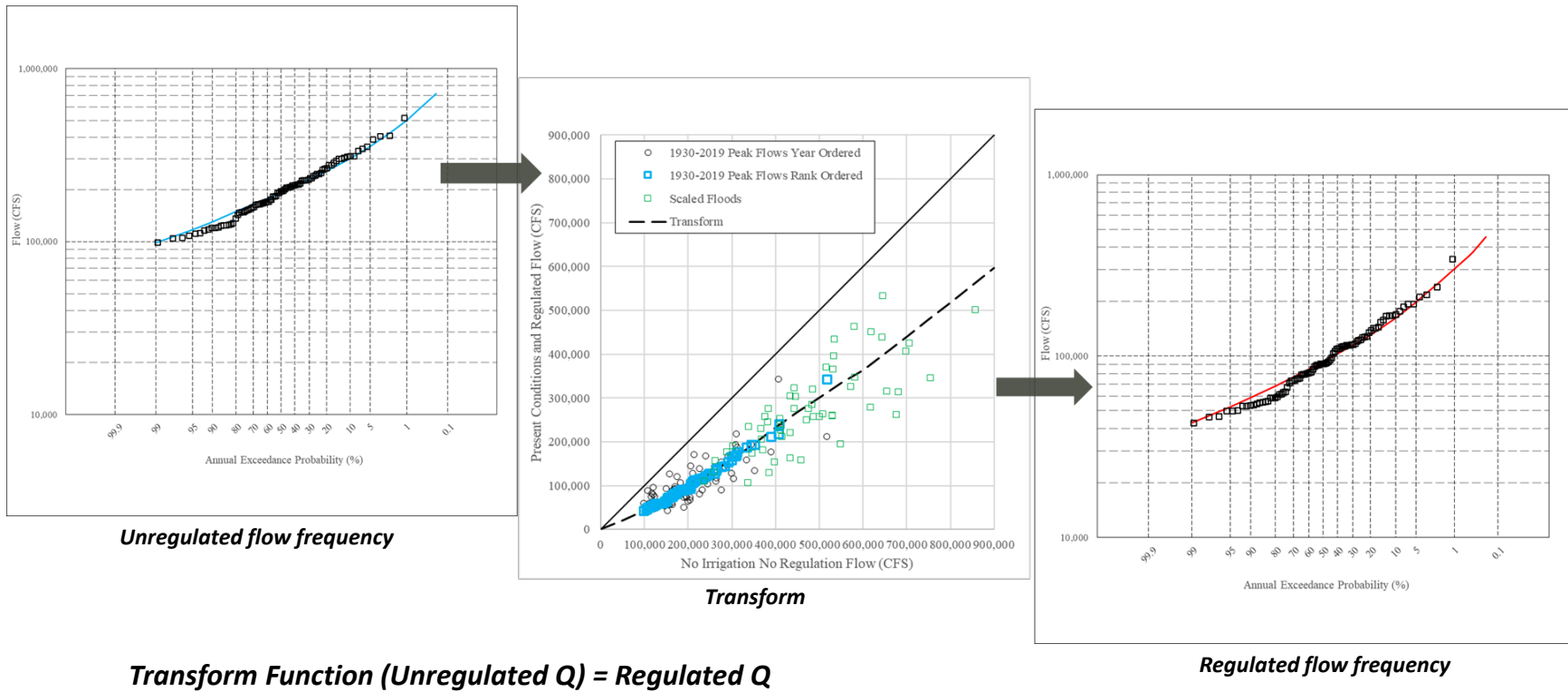


Figure ES-1. Conceptual Example of Transform Method Results for Computing Regulated Flow Frequency

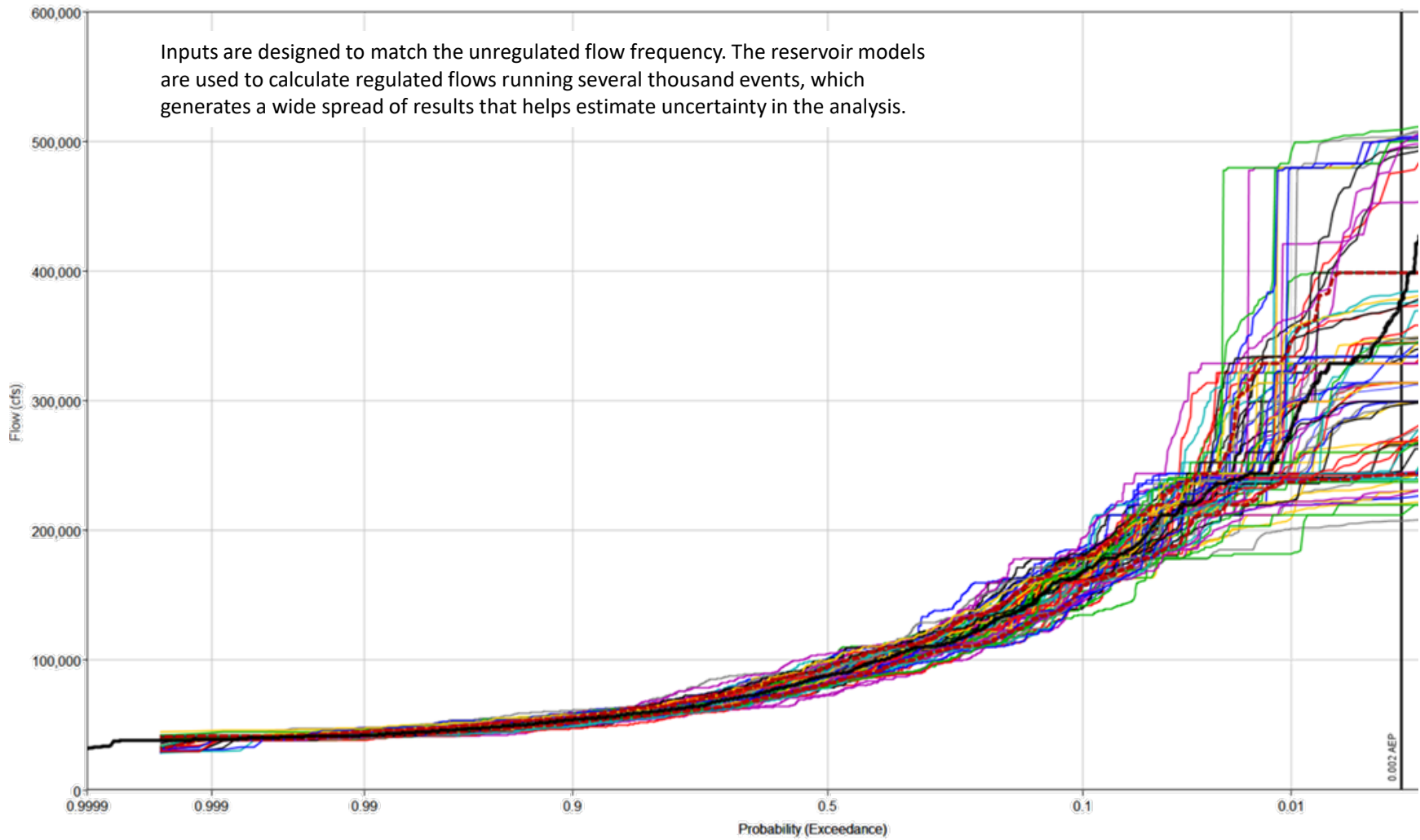


Figure ES-2. Conceptual Example of WAT Monte-Carlo Method Results for Computing Regulated Flow Frequency

The regulated flow frequencies calculated by the Monte Carlo method are compared to the UMRSFFS 2003 results in Figures ES-3, ES-4, and ES-5, representing the common 10%, 1%, and 0.2% AEP. Table ES-3 compiles these results. See below (Tables ES-4, ES-5, and ES-6) and Section 7 for an expanded discussion and presentation of flow frequencies at all 14 AEPs.

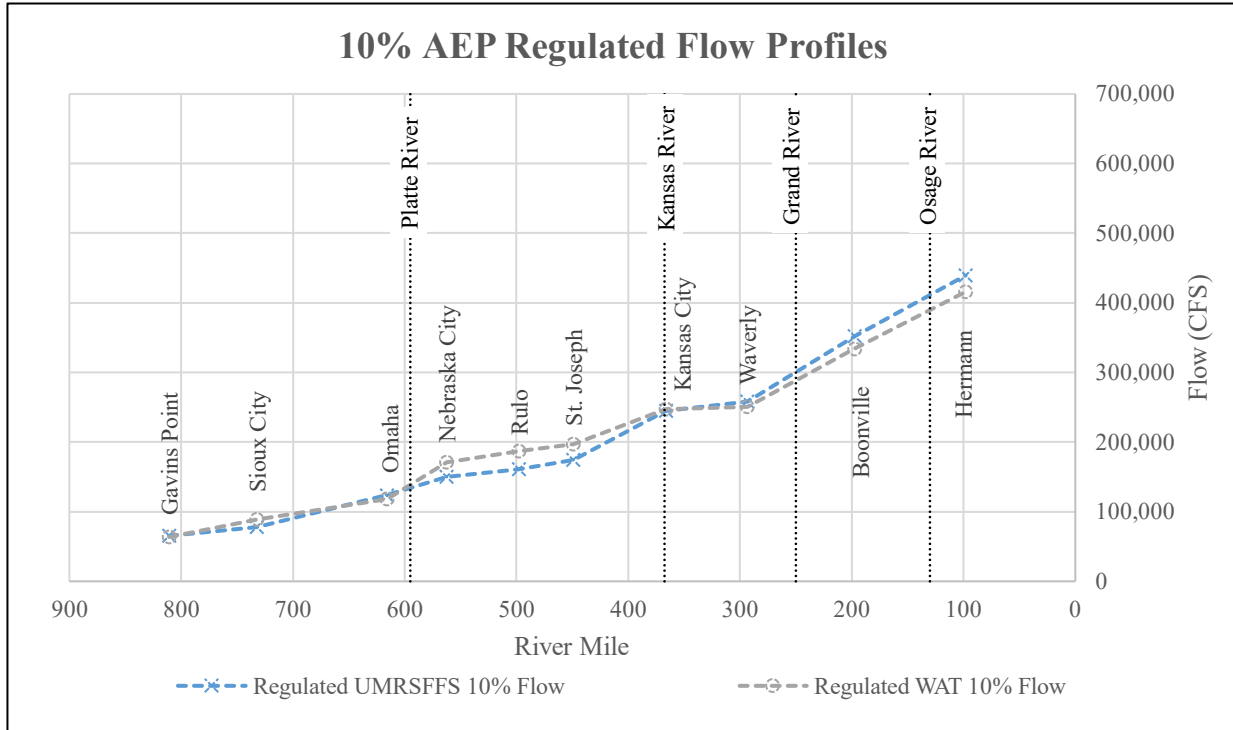


Figure ES-3. Regulated 10% AEP Flow vs River Mile, 2003 UMRSFFS, and Current Study from WAT Monte Carlo (Adopted)

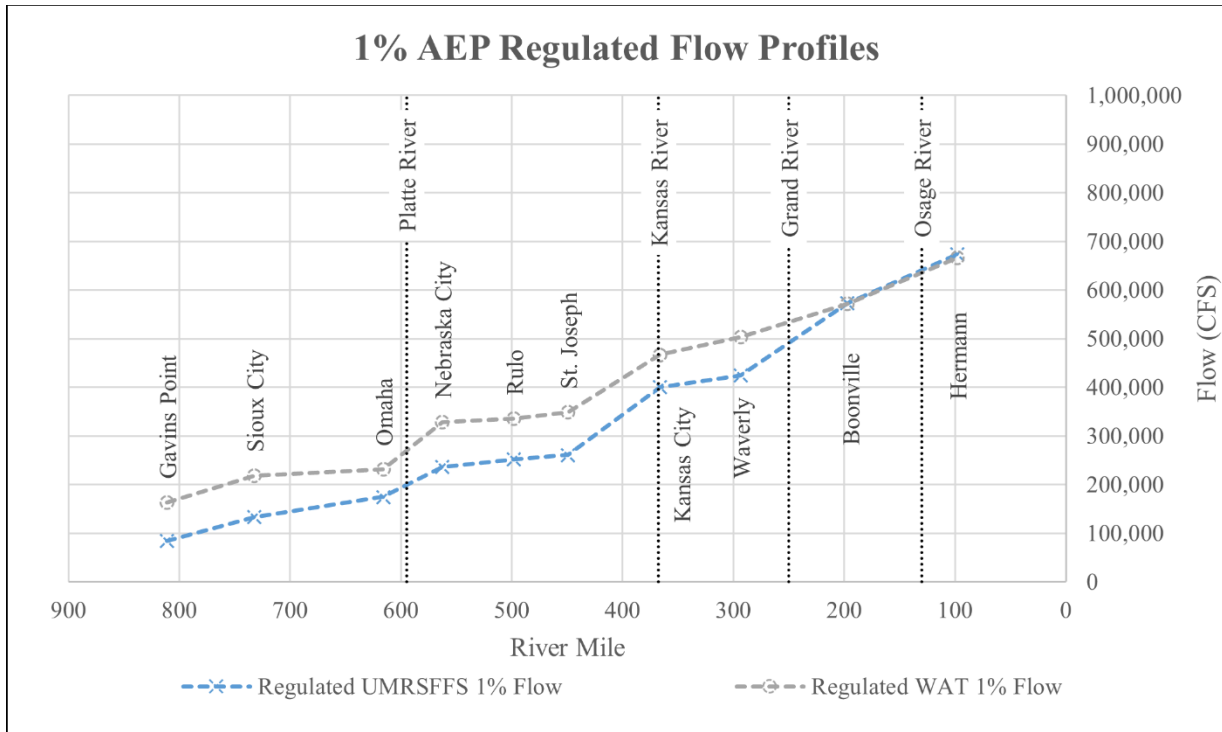


Figure ES-4. Regulated 10% AEP Flow vs River Mile, 2003 UMRSSFFS, and Current Study from WAT Monte Carlo (Adopted)

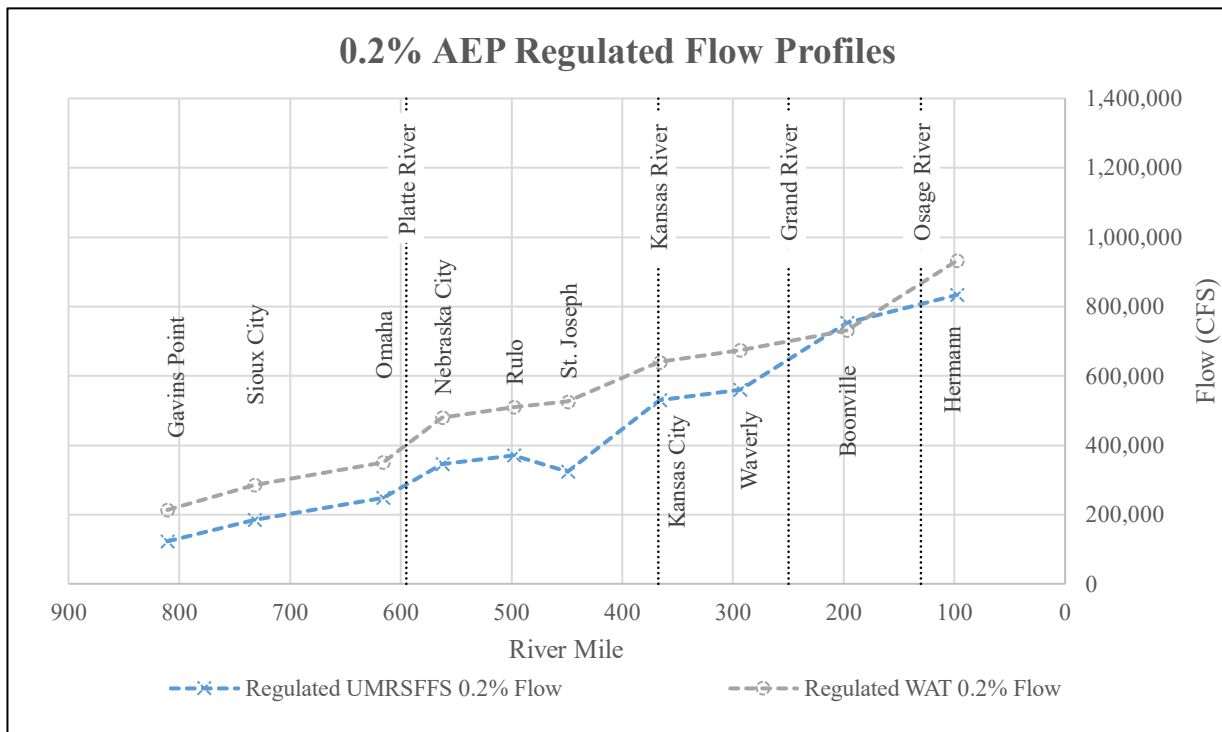


Figure ES-5. Regulated 0.2% AEP Flow vs River Mile, 2003 UMRSSFFS, and Current Study from WAT Monte Carlo (Adopted)

Table ES-3. Comparison of Regulated Flow Frequency for 10%, 1%, and 0.2% Annual Exceedance Probability (Flow in CFS), 2003 UMRSFFS and Current Study from WAT Monte Carlo (Adopted)

Gage Location	10% AEP		1% AEP		0.2% AEP	
	2003 UMRSFFS	2023 MRFFS	2003 UMRSFFS	2023 MRFFS	2003 UMRSFFS	2023 MRFFS
Gavins Point	65,000	64,000	84,900	164,000	123,500	213,000
Sioux City	78,300	89,000	133,800	218,000	185,400	285,000
Omaha	123,600	118,000	174,700	232,000	247,900	351,000
Nebraska City	149,800	171,000	236,700	329,000	345,400	480,000
Rulo	160,900	187,000	252,200	336,000	370,700	510,000
St. Joseph	174,000	197,000	261,000	349,000	324,000	526,000
Kansas City	245,000	247,000	401,000	467,000	530,000	640,000
Waverly	258,000	251,000	424,000	503,000	561,000	674,000
Boonville	352,000	334,000	573,000	572,000	753,000	731,000
Hermann	439,000	416,000	673,000	666,000	833,000	933,000

Note: Tabular Summary of Figures ES-3 through ES-5.

Table ES-4. Summary of Published Lower Missouri River Regulated Flow Frequency Results of the current 2023 study, 2003 UMRSFFS, and 1962 Levee Re-study Report, Gavins Point, Sioux City, Omaha, and Nebraska City (cfs)

AEP %	Gavins Point			Sioux City			Omaha			Nebraska City		
	2003 ² UMRSFFS	2023 ³ MRFFS	1962 ¹ Restudy	2003 ² UMRSFFS	2023 ³ MRFFS	1962 ¹ Restudy	2003 ² UMRSFFS	2023 ³ MRFFS	1962 ¹ Restudy	2003 ² UMRSFFS	2023 ³ MRFFS	
0.2	123,500	213,000		185,400	285,000		247,900	351,000		345,400	480,000	
0.4		169,000			268,000			312,000			399,000	
0.5	98,000	164,000		155,000	266,000		204,500	293,000		275,900	382,000	
1	84,900	164,000	90,000	133,800	218,000	190,000	174,700	232,000	220,000	236,700	329,000	
2	74,700	104,000	82,000	113,800	156,000	170,000	147,900	187,000	200,000	206,400	244,000	
4		81,000			121,000			154,000			220,000	
5	69,100	77,000		93,900	111,000		132,700	151,000		189,900	212,000	
10	65,000	64,000	65,000	78,300	89,000	125,000	123,600	118,000	160,000	149,800	171,000	
20	63,000	54,000		66,800	71,000		85,300	99,000		118,700	132,000	
50	45,300	44,000	44,000	49,500	47,000	74,000	64,200	62,000	108,000	88,000	88,000	
80	38,300	38,000		39,100	41,000		49,900	47,000		70,500	61,000	
90	34,800	35,000		36,100	38,000		44,800	43,000		60,500	54,000	
95	32,100	33,000		34,000	36,000		40,700	40,000		53,500	49,000	
99	27,000	28,000		31,200	32,000		34,600	37,000		40,600	42,000	

Note: Table ES-4 also reported as Table 7-3.

¹U.S. Army Corps of Engineers, 1962. 'Missouri River Agricultural Levee Restudy Program -- Hydrology Report,' Missouri River Division, Omaha District, Kansas City District. Reproduced from Table F-3 of UMRSFFS. NOTE: flows for Gavins Point Dam / Yankton were not published in the 1962 Report.

²Data from Table F-49 of the 2003 Upper Mississippi River System Flow Frequency Study (UMRSFFS) Appendix F.

³Current Missouri River Flow Frequency Study Adopted Results from the WAT Monte Carlo Analysis

Table ES-5. Summary of Published Lower Missouri River Regulated Flow Frequency Results of the current 2023 study, 2003 UMRSFFS, and 1962 Levee Re-study Report, Rulo, St. Joseph, and Kansas City (cfs)

AEP %	Rulo			St. Joseph			Kansas City		
	1962 ¹ Restudy	2003 ² UMRSFFS	2023 ³ MRFFS	1962 ¹ Restudy	2003 ² UMRSFFS	2023 ³ MRFFS	1962 ¹ Restudy	2003 ² UMRSFFS	2023 ³ MRFFS
0.2		370,700	510,000	330,000	324,000	526,000	540,000	530,000	640,000
0.4			432,000			444,000			555,000
0.5		296,900	422,000		287,000	433,000		454,000	546,000
1	241,000	252,200	336,000	270,000	261,000	349,000	425,000	401,000	467,000
2	220,000	217,300	294,000	246,000	233,000	296,000	380,000	351,000	393,000
4			250,000			255,000			312,000
5		188,600	233,000		199,000	239,000		289,000	293,000
10	170,000	160,900	187,000	185,000	174,000	197,000	270,000	245,000	247,000
20		132,300	148,000		147,000	157,000		210,000	197,000
50	117,000	94,700	101,000	120,000	109,000	107,000	150,000	142,000	136,000
80		72,600	65,000			75,000			97,000
90		62,800	57,000			66,000			82,000
95		55,800	51,000			59,000			72,000
99		44,900	44,000			52,000			58,000

Note: Table ES-5 also reported as Table 7-4.

¹U.S. Army Corps of Engineers, 1962. 'Missouri River Agricultural Levee Restudy Program -- Hydrology Report,' Missouri River Division, Omaha District, Kansas City District. Reproduced from the Executive Summary of Appendix E and 50% AEP from Table F-3 of UMRSFFS.

² Data from Table E-15 of the 2003 Upper Mississippi River System Flow Frequency Study (UMRSFFS) Appendix E, except Rulo which is from Appendix F. NOTE: Appendix E, also publishes flows for Rulo, being 320,000 cfs at the 0.2% AEP, 281,000 cfs at the 0.5% AEP, and 250,000 cfs at the 1% AEP.

³Current Missouri River Flow Frequency Study Adopted Results from the WAT Monte Carlo Analysis

Table ES-6. Summary of Published Lower Missouri River Regulated Flow Frequency Results of the current 2023 study, 2003 UMRSFFS, and 1962 Levee Re-study Report, Waverly, Boonville, and Hermann (cfs)

AEP %	Waverly			Boonville			Hermann		
	1962 ¹ Restudy	2003 ² UMRSFFS	2023 ³ MRFFS	1962 ¹ Restudy	2003 ² UMRSFFS	2023 ³ MRFFS	1962 ¹ Restudy	2003 ² UMRSFFS	2023 ³ MRFFS
0.2		561,000	674,000	700,000	753,000	731,000	820,000	833,000	933,000
0.4			588,000			702,000			742,000
0.5		480,000	573,000		648,000	672,000		742,000	722,000
1	445,000	424,000	503,000	550,000	573,000	572,000	620,000	673,000	666,000
2	395,000	371,000	412,000	485,000	503,000	531,000	555,000	604,000	571,000
4			323,000			417,000			506,000
5		305,000	294,000		415,000	393,000		511,000	473,000
10	285,000	258,000	251,000	365,000	352,000	334,000	405,000	439,000	416,000
20		212,000	214,000		289,000	280,000		363,000	345,000
50	158,000	150,000	142,000	195,000	203,000	204,000	220,000	248,000	262,000
80			101,000			134,000			175,000
90			86,000			109,000			142,000
95			75,000			97,000			123,000
99			59,000			78,000			100,000

Note: Table ES-6 also reported as Table 7-5.

¹U.S. Army Corps of Engineers, 1962. 'Missouri River Agricultural Levee Restudy Program -- Hydrology Report,' Missouri River Division, Omaha District, Kansas City District. Reproduced from the Executive Summary of Appendix E and 50% AEP from Table F-3 of UMRSFFS.

²Data from Table E-15 of the 2003 Upper Mississippi River System Flow Frequency Study (UMRSFFS) Appendix E.

³Current Missouri River Flow Frequency Study Adopted Results from the WAT Monte Carlo Analysis

ATTACHMENT G

Mississippi River Cities and Towns Initiative **Mississippi River Compact Proposal**

- Associated Press Article (9/12/2023) (G-1 to G-5)

Dry states taking Mississippi River water isn't a new idea. But some mayors want to kill it







ST. LOUIS (AP) — Community leaders along the Mississippi River worried that dry southwestern states will someday try to take the river's water may soon take their first step toward blocking such a diversion.

Mayors from cities along the river are expected to vote on whether to support a new compact among the river's 10 states at this week's annual meeting of the Mississippi River Cities and Towns Initiative,

according to its executive director Colin Wellenkamp. Supporters of a compact hope it will strengthen the region's collective power around shared goals like stopping water from leaving the corridor.

"It is the most important working river on earth," said Wellenkamp. "It's a matter of national security that the Mississippi River corridor remain intact, remain sustainable and remain ecologically and hydrologically healthy."

[The Southwest has long struggled to find enough water](#) for its growing population in a region prone to drought that climate change is making worse. [Transporting water from the Mississippi River basin](#), which drains roughly 40% of the continental United States, has always been a long shot that many say isn't practical or remotely cost-effective. But Wellenkamp worries that conversation around the idea hasn't stopped.

A formal compact is still far off. The mayors' support would be just the first step in a lengthy, politically fraught process that would require buy-in from all 10 states along the river and federal approval, experts said. Those states range from left-leaning states like Minnesota, where the river begins, to thoroughly conservative states like Louisiana, where it empties into the Gulf of Mexico.

The others are Wisconsin, Iowa, Illinois, Missouri, Kentucky, Tennessee, Arkansas and Mississippi.

Proponents say a compact would protect the river's water levels and ecology, make it easier to coordinate when floods or other disaster strikes and provide a way to resolve conflict among the river states. A favorable vote would ask the Mississippi River Cities and Towns Initiative to pursue a new river compact, according to a draft copy of the motion.

"This is not going to be easy and it's not going to happen overnight," said Wellenkamp. "But, you know, every journey begins with a first step and a cash advance, I like to say."

Fear of water export has ignited political action before. Plans by a Canadian company in the 1990s to fill up tankers with Great Lakes water and ship it to Asia "was probably the tipping point" for establishing the Great Lakes Compact that went into effect in 2008. It strengthened cooperation among Great Lakes states that work with two Canadian providences to manage water from the lakes effectively, monitor its use and prevent it from leaving the basin.

"The Great Lakes are better protected today than they ever have been before," said David Strifling, director of Marquette Law School's Water Law and Policy Initiative.

But Strifling said it was difficult to get an agreement together decades ago and it would be even harder to do so now "just due to the increased level of political polarization that exists."

Wellenkamp said a Mississippi River compact, besides blocking diversions, would ensure that nearby water users also act in a sustainable way.

[The river's water levels can be precarious](#). Last fall, they fell so low that they disrupted ship and barge traffic that moved soybeans, corn and other goods downriver for export. Much of the river is once again facing drought.

People realize that the river "is not some stable resource," said Melissa Scanlan, director for the Center for Water Policy at the University of Wisconsin-Milwaukee.

"People are aware of how those low levels on the Mississippi River affect commerce and the communities," she said.

There are protections against some water diversions now. If one of the five states on the upper portion of the river wants to move large amounts of water out of the basin, it must notify and consult with the other four states first. The Upper Mississippi River Basin Association has existed for decades to foster cooperative management of the river. Currently, there's an effort to quantify water use among the upper basin states and understand how that use affects the river, officials said.

John Fleck, a water expert at the Utton Center at the University of New Mexico School of Law, said he is rooting for a Mississippi River compact so that what he calls the unworkable idea of a water pipeline to the west will die.

"This is a waste of our time because (diversion) is magical thinking and it will never happen," he said.

Jennifer Gimbel, senior water policy scholar at Colorado State University, said the obstacles to a pipeline are high. It would need approval from Congress and from legislatures in each state it passes through, payments for landowners and condemnation procedures for those who didn't want the pipeline through their properties, and expensive permitting. Then there is the engineering nightmare and huge costs of moving huge amounts of water west.

"It becomes pretty complicated real fast," Gimbel said.

The talk of diverting water to the Southwest will hopefully "light a fire under some states" to approve a Mississippi River compact, said Olivia Dorothy, director of river restoration with the conservation group American Rivers.

Diverting water can harm the river's ecology, depriving species of the water they rely on. It could also slow the movement of sediment that's vital to the health of Louisiana and the Gulf of Mexico, among many other problems, she said.

Dorothy said a compact would be a good way to say "this is our water."

"If you want the Mississippi River water, you can move here," she said.

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ATTACHMENT H

Additional Items

- Future Meeting Schedule (*H-1*)
- Frequently Used Acronyms (4-29-2022) (*H-2 to H-8*)

**QUARTERLY MEETINGS
FUTURE MEETING SCHEDULE**

FEBRUARY 2024	
<u>Virtual</u>	
February 27	UMRBA Quarterly Meeting
February 28	UMRR Coordinating Committee Quarterly Meeting

MAY 2024	
<u>Quad Cities</u>	
May 21	UMRBA Quarterly Meeting
May 22	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
BCOES	Bid-ability, Constructability, Operability, Environmental, Sustainability
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
CEICA	Cost Effectiveness Incremental Cost Analysis
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CFS	Cubic Feet Per Second
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
CY	Cubic Yards
DALS	Department of Agriculture and Land Stewardship
DED	Department of Economic Development
DEM	Digital Elevation Model
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
EPM	Environmental Pool Management
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
FMG	Forest Management Geodatabase
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
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
H&H	Hydrology and Hydraulics
HAB	Harmful Algal Bloom
HEC-EFM	Hydrologic Engineering Center Ecosystems Function Model
HEC-RAS	Hydrologic Engineering Center River Analysis System
HEL	Highly Erodible Land
HEP	Habitat Evaluation Procedure
HNA	Habitat Needs Assessment
HPSF	HREP Planning and Sequencing Framework
HQUSACE	Headquarters, USACE
H.R.	House of Representatives
HREP	Habitat Rehabilitation and Enhancement Project
HSI	Habitat Suitability Index
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
IGE	Independent Government Estimate
IIA	Implementation Issues Assessment
IIFO	Illinois-Iowa Field Office (formerly RIFO - Rock Island Field Office)
ILP	Integrated License Process
IMTS	Inland Marine Transportation System
IPR	In-Progress Review
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
IWS	Integrated Water Science
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
M-35	Marine Highway 35
MAFC	Mid-America Freight Coalition
MARAD	U.S. Maritime Administration
MARC 2000	Midwest Area River Coalition 2000
MCAT	Mussel Community Assessment Tool
MICRA	Mississippi Interstate Cooperative Resource Association
MDM	Major subordinate command Decision Milestone
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
NGWOS	Next Generation Water Observing System
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
OHWM	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	Preconstruction 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
RPEDN	Regional Planning and Environment Division North
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
SMART	Specific, Measurable, Attainable, Risk Informed, Timely
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
WLM	Water Level Management
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