

February 27, 2024



Upper Mississippi River Basin Association

169th Quarterly Meeting

Agenda

with
Background
and
Supporting
Materials

Virtual



Upper Mississippi River Basin Association

169th Quarterly Meeting

Agenda

February 27, 2024

Virtual

| Time | Topic | Presenter |
|------------|--|---|
| 9:00 a.m. | Call to Order and Introductions | Rick Pohlman, <i>Illinois DNR</i> |
| 9:10 | A1-8 Approval of Minutes of October 24, 2023 Meeting | |
| 9:20 | B1-17 Executive Director's Report | Kirsten Wallace, <i>UMRBA</i> |
| 9:30 | C1 Interbasin Diversion Consultation <ul style="list-style-type: none">▪ Annual Reporting | <i>UMRBA Board Members</i> |
| 9:45 | D1 Upper Mississippi River Basin Flood/Drought Forecast | Mike Welvaert, <i>National Weather Service</i> |
| 10:00 | Navigation Water Level Forecasting in St. Louis District | Joan Stemler, <i>USACE</i> |
| 10:20 | Break | |
| 10:40 | Inland Waterway Trust Fund <ul style="list-style-type: none">▪ Status Report and Outlook | Tracy Zea, <i>Waterways Council, Ind</i> |
| 11:00 | E1-2 Upper Mississippi River Restoration Program and Navigation and Ecosystem Sustainability Program <ul style="list-style-type: none">▪ Status Report and Outlook | Marshall Plumley and Andrew Goodall, <i>USACE</i> |
| 11:30 a.m. | Lunch | |
| 1:00 p.m. | Minnesota Invasive Carp Management <ul style="list-style-type: none">F1-2 ▪ Ten-Year Invasive Carp Action PlanF3-11 ▪ Interagency Eradication Efforts | Kelly Pennington and Grace Loppnow, <i>Minnesota DNR</i> |
| 1:30 | G1-4 Minnesota Wetlands Status and Trends | Amy Kendig, <i>Minnesota DNR</i> |
| 1:50 | Gulf Hypoxia Program <ul style="list-style-type: none">H1-6 ▪ Hypoxia Task Force 2023 Report to Congress▪ UMR Sub-Basin Committee Work Plan | Jacob Greif, <i>USEPA</i> Lauren Salvato, <i>UMRBA</i> |
| 2:20 | I1-8 Administrative Issues <ul style="list-style-type: none">▪ Election of Officers▪ Future Meeting Schedule | |
| 2:30 p.m. | Adjourn | |

ATTACHMENT A

Minutes of the October 24, 2023 **UMRBA Quarterly Meeting**

(A-1 to A-8)

**Draft
Minutes of the 168th Quarterly Meeting
of the
Upper Mississippi River Basin Association**

**October 24, 2023
St. Louis, Missouri**

Rick Pohlman called the meeting to order at 10:00 a.m. Participants were as follows:

UMRBA Representatives, Alternates, and State Members of the Water Quality Executive Committee:

| | |
|-----------------|---|
| Rick Pohlman | Illinois Department of Natural Resources |
| Loren Wobig | Illinois Department of Natural Resources |
| Chad Craycraft | Illinois Department of Natural Resources |
| Nicole Vidales | Illinois Environmental Protection Agency |
| Tim Hall | Iowa Department of Natural Resources |
| Jake Hansen | Iowa Department of Agriculture and Land Stewardship |
| Grant Wilson | Minnesota Department of Natural Resources |
| Glenn Skuta | Minnesota Pollution Control Agency |
| Patrick Phenow | Minnesota Department of Transportation (Virtual) |
| Chris Wieberg | Missouri Department of Natural Resources |
| Chris Klenklen | Missouri Department of Agriculture |
| Matt Vitello | Missouri Department of Conservation |
| Levi Woods | Missouri Department of Transportation |
| Wade Strickland | Wisconsin Department of Natural Resources |

Federal UMRBA Liaisons:

| | |
|------------------|---|
| Thatch Shepard | U.S. Army Corps of Engineers, MVD (on behalf of Brain Chewning) |
| Mark Gaikowski | U.S. Geological Survey, Midcontinent Region (Virtual) |
| Sabrina Chandler | U.S. Fish and Wildlife Service |
| Travis Black | U.S. Department of Transportation, MARAD |

Others in Attendance:

| | |
|-----------------|--|
| Kirk Hansen | Iowa Department of Natural Resources |
| Mark Newhall | Iowa Homeland Security and Emergency Management Department (Virtual) |
| Brian McCoy | Illinois Department of Transportation |
| Vanessa Perry | Minnesota Department of Natural Resources |
| Nick Schlessler | Minnesota Department of Natural Resources |
| Ken Henderson | Missouri Department of Agriculture |
| Erin Fanning | Missouri Department of Natural Resources |
| Stacey Fowler | Missouri Department of Transportation |
| Kevin Krisch | Wisconsin Department of Natural Resources (Virtual) |
| Sammi Boyd | Wisconsin Department of Natural Resources (Virtual) |
| Mike Halsted | Wisconsin Department of Transportation, Harbors, and Waterways (Virtual) |

| | |
|--------------------|--|
| LeeAnn Riggs | U.S. Army Corps of Engineers, Mississippi Valley Division |
| Col. Eric Swenson | U.S. Army Corps of Engineers, St. Paul District |
| Karl Jansen | U.S. Army Corps of Engineers, St. Paul District |
| Nathan Wallerstedt | U.S. Army Corps of Engineers, St. Paul District |
| Marshall Plumley | U.S. Army Corps of Engineers, Rock Island District |
| Davi Michl | U.S. Army Corps of Engineers, Rock Island District (Virtual) |
| John Peukert | U.S. Army Corps of Engineers, St. Louis District |
| Andrew Schimpf | U.S. Army Corps of Engineers, St. Louis District |
| Brian Markert | U.S. Army Corps of Engineers, St. Louis District |
| Shawn Sullivan | U.S. Army Corps of Engineers, St. Louis District |
| Brian Johnson | U.S. Army Corps of Engineers, Regional Planning Division North |
| Ryan Larsen | U.S. Army Corps of Engineers, Northwestern Division |
| Colleen Roberts | U.S. Army Corps of Engineers, Kansas City District |
| Paul Boyd | U.S. Army Corps of Engineers, Kansas City District |
| Richard Vaughn | U.S. Department of Agriculture, Natural Resources Conversation Service |
| Katie Flahive | U.S. Environmental Protection Agency, Office of Water |
| Steve Schaff | U.S. Environmental Protection Agency, Region 7 |
| Jared Schmalstieg | U.S. Environmental Protection Agency, Region 7 |
| John Winter | U.S. Fish and Wildlife Service, UMR Refuges |
| Heidi Keuler | U.S. Fish and Wildlife Service, Fishers and Farmers (Virtual) |
| Lauren Larson | U.S. Fish and Wildlife Service, Illinois-Iowa Field Office (Virtual) |
| Sara Schmuecker | U.S. Fish and Wildlife Service, Illinois-Iowa Field Office (Virtual) |
| JC Nelson | U.S. Geological Survey, Midcontinent Region |
| Jim Duncker | U.S. Geological Survey, Central Midwest Water Science Center (Virtual) |
| Steve Buan | National Oceanic and Atmospheric Administration, NWS (Virtual) |
| Mike Welvaert | National Oceanic and Atmospheric Administration, NWS (Virtual) |
| Kim Lutz | America's Watershed Initiative |
| Lindsay Brice | Audubon (Virtual) |
| Brent Newman | Audubon (Virtual) |
| Jo Anne Smiley | Clarksville, City (Virtual) |
| Anshu Singh | Corn Belt Ports (Virtual) |
| Bob Sinkler | Corn Belt Ports (Virtual) |
| Chris Smith | Corn Belt Ports (Virtual) |
| Kelly Suttles | Environmental Defense Fund |
| John O'Donnell | Heartlands Conservancy |
| Gretchen Sabel | League of Women Voters, Upper Mississippi River (Virtual) |
| Doug Daigle | Louisiana Hypoxia Working Group (Virtual) |
| Charles Williamson | Neighbors of the Mississippi |
| Paul Rohde | Waterways Council, Inc. |
| Rob Levinthal | University of Pennsylvania |
| Kirsten Wallace | Upper Mississippi River Basin Association |
| Brian Stenquist | Upper Mississippi River Basin Association |
| Mark Ellis | Upper Mississippi River Basin Association |
| Lauren Salvato | Upper Mississippi River Basin Association |
| Erin Spry | Upper Mississippi River Basin Association |
| Andrew Stephenson | Upper Mississippi River Basin Association |

Minutes

Loren Wobig moved and Tim Hall seconded a motion to approve the draft minutes of the August 8, 2023 UMRBA quarterly meeting and the September 22, 2023 UMRBA Board business meeting as provided in the agenda packet. The motion was approved unanimously.

Executive Director's Report

Kirsten Wallace pointed to the Executive Director's report in the agenda packet for a summary of the Association's work efforts since the August 2023 meeting. Wallace elaborated on the following key events and UMRBA products:

- On October 23, 2023, the St. Louis District hosted UMRBA for a tour of L&D 25 for the purpose of learning more about the Navigation and Ecosystem Sustainability Program (NESP).
- On October 3-4, 2023, UMRBA hosted a workshop in St. Paul, Minnesota for the purpose of accelerating the adoption of multi-benefit conservation practices. 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.
- On September 13, 2023, UMRBA submitted to Congress its priorities for the Water Resources Development Act (WRDA) of 2024. On September 18-21, 2023, UMRBA staff met with several Congressional offices in Washington, D.C. to request support for the set of priorities. UMRBA also joined a multi-signatory partner letter to Congress, dated October 5, 2023, led by the Interstate Council on Water Policy (ICWP), requesting reform of the Corps' project partnership agreements (PPAs) in WRDA 2024.
- On August 3, 2023, the UMRR Coordinating Committee met on August 3, 2023 to discuss outyear funding scenarios, staffing plans, and programmatic priorities for FY 2024. The Committee 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.
- On August 14-17, 2023, the Mississippi River Commission hosted a series of meetings during its low water inspection tour of the Upper Mississippi River. UMRBA staff provided public comments participated in the Commission's panels related to flood risk and resilience and the Navigation and Ecosystem Sustainability Program (NESP).
- On October 11, 2023, USGS hosted a dedication ceremony for the facility renovations at the Upper Midwest Environmental Sciences Center (UMESC).
- On October 4, 2023, the Rock Island District hosted a groundbreaking ceremony for the Steamboat Island Habitat Rehabilitation and Enhancement Project on the Mississippi River near Princeton, Iowa. Remarks were provided by the Chief of Engineers and Commanding General of the U.S. Army Corps of Engineers, Lt. Gen. Scott A. Spellmon, and USFWS Upper Mississippi River National Wildlife and Fish Refuge Manager.

Wallace pointed to UMRBA's July 2023 through September 2023 financial statements provided on pages B-15 to B-23 of the agenda packet. Loren Wobig moved and Grant Wilson 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 Water Quality Program

As Chair of the UMRBA Water Quality Executive Committee, Nicole Vidales reported on UMRBA's water quality program in 2023 and its outlook for 2024. Highlights of UMRBA's water quality program include:

- UMRBA is finalizing the How Clean is the River? Report, which is UMRBA's second comprehensive assessment of water quality conditions along the Upper Mississippi River. UMRBA is planning to publish the report and implement a communications plan in January 2024.
- UMRBA is preparing to implement the fixed site monitoring component of the UMRBA Interstate Water Quality Monitoring Plan. The states are planning to collect monthly samples from October 2025 to September 2026 at various fixed sites extending from L&D 2 to Thebes, Illinois. UMRBA is coordinating with USEPA's Region 5 and 7 for partnership opportunities.
- Over the summer, UMRBA has submitted to USEPA Office of Water a three-year work plan for its support of the Hypoxia Task Force's Upper Mississippi River Sub-Basin Committee. The Water Quality Executive Committee is currently considering establishing a more formal committee to convene interstate collaboration on nutrient management. An example of such work is the states' recent discussions about a potential multi-state grant application through USDA NRCS to advance "batch-and-build" arrangements as a means for accelerating conservation practices on agricultural lands.
- On October 3-4, 2023, UMRBA hosted a workshop in St. Paul, Minnesota for the purpose of accelerating the adoption of multi-benefit conservation practices. 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.

Vidales reported that the WQEC has set priorities for UMRBA's water quality program in 2024 as including:

- Developing a set of position statements regarding emerging contaminants and nutrients, including recommendations for interstate collaboration through UMRBA
- Developing a recreational use survey to understand how water quality perceptions change longitudinally throughout the Upper Mississippi River
- Outlining an approach to advance the states' goals for alignment in their individual water quality standards and assessments

USFWS Nature-Based Projects in the Upper Mississippi River System Floodplain

Sabrina Chandler reported that USFWS allocated \$10 million of its \$120 million Inflation Reduction Act appropriation to implement projects that advance nature-based resiliency and restoration in the Upper Mississippi and Illinois Rivers. Of the \$10 million available, USFWS is allocating 20 percent of those funds to implement projects located on state managed lands. These projects allow for restoration or resilience improvements in ways that would not be eligible through the Upper Mississippi River Restoration program for reasons such as being too small. Chandler discussed the coordination among USFWS, the states, and UMRBA to develop prioritization criteria and select projects. Chandler underscored the value of our regional cooperative partnerships between federal agencies and states.

Kirsten Wallace applauded Chandler’s leadership for securing this investment opportunity and leveraging our shared partnership interests and resources.

Upper Mississippi River Levee Safety Act

On behalf of the Upper Mississippi, Illinois, and Missouri Rivers Association (UMIMRA), Bob Sinkler provided a briefing on UMIMRA’s legislative proposal to purpose and objectives of the Upper Mississippi River Levee and Floodwall Design Standards. On September 27, 2023, Representative Mary Miller and other members of Congress introduced the measure as H.R. 5722. in improving flood protection on the Upper Mississippi River System. As such, the states support the basic purpose and objectives of the Upper Mississippi River Levee and Floodwall Design Standards bill (H.R. 5722),

Loren Wobig expressed support for the measure’s basic purpose and objectives, including by more frequently renewing surface water profiles and flood frequency probabilities. Wobig acknowledge the necessity to improve flood protection in certain places given current understandings of flood frequency probabilities and associated impacts. However, Wobig expressed concern with the bill language, which may be interpreted to allow for levees to be automatically adjusted to increase protection without mitigation for impacts onto others. Wobig stated that adjustments to levee heights and placement must abide by applicable state and federal law. That involves evaluating, acknowledging, and mitigating for any resulting impacts to other areas of the river floodplain.

On behalf of the Neighbors of the Mississippi River, Charles Williams shared its perspective of risk associated with not having federal levee protection. Williams advocated for a systemic planning process with a more fair and equitable stakeholder involvement process, particularly by the people who live and work in the affected areas.

Chris Wieberg noted that the Lower Missouri River Flood Risk and Resiliency Study may be a model authority to apply on the Upper Mississippi River System.

Col. Eric Swenson asked whether a shortened timeframe than 20 years is appropriate for updating water surface profiles and flow frequencies. Col. Swenson mentioned the impact of longer duration floods on levee integrity. He offered the District’s interest in collaborating with partners on solutions.

Drought

State and Federal Agency Management Efforts

UMRBA Board Members and USACE St. Paul District shared status of drought and ongoing drought impacts in their respective geographic areas. Impacts of concern included limited availability of water for livestock, public supply, and navigation as well as the increase risk for fires. They also shared concerns about drought conditions in 2024.

UMRBA Water Availability Cumulative Impact Assessment

Erin Spry reported that, in response to the UMRBA Board’s direction, the *ad hoc* team evaluating the UMR Basin Charter has scoped a three-step process for better understanding water availability – i.e., to develop a cumulative impact assessment. The long-term goal is to assess vulnerabilities in water availability in the Upper Mississippi River System (UMRS) to support multiple water users and uses for the primary purpose

of informing the Upper Mississippi River (UMR) states' evaluation of potential out-of-basin water diversions. As a first step, the *ad hoc* team is recommending focusing on the 9-foot navigation channel as the threshold to develop pool-by-pool assessments using the Corps' pool-specific water control plans as well as stage and discharge data. The three-part process is to:

- Collect states' water use data within the basin from 2017 to 2021
- Calculate a water budget for the Upper Mississippi River Basin at a HUC-6 scale
- Assess water availability, using the 9-foot navigation channel at a threshold for pool-specific assessments

Spry said next steps include securing funding and a contractor. In response to a question from Rick Pohlman, Lauren Salvato clarified that the states have provided in-kind contributions to implement part I (i.e., collecting and aligning the states' water use data) as well as the scenario exercises for implementing the Charter's notification and consultation process in 2022. After a brief discussion about the previous interest expressed from contracts for out-of-basin water diversions, it was noted that the proposals could not demonstrate a beneficial use for that water. If and when a beneficial use is demonstrated, there may be no legal reason to deny the request. Grant Wilson noted the Mississippi River Cities and Towns Initiative recent interest in encouraging an interstate compact governing water use.

Missouri River Flood Risk and Resilience Study

Colleen Roberts presented on the purpose, process, and status of various flood-related studies on the Lower Missouri River. Through the Lower Missouri River Flood Risk and Resiliency Comprehensive Study, the Corps is partnering with Missouri, Iowa, Kansas, and Nebraska to evaluate means for reducing risk and improving resilience to major floods at systemic, reach, and site-specific spatial scales – i.e., “spin-off” studies. Currently, the three areas are selected for more refined planning are Hold County/Doniphan County, City of Brunswick, and Jefferson City. The anticipated schedule is to submit to Congress an Interim System Plan Report by December 2023 and the final study by March 2027.

Roberts reported that the Corps is simultaneously advancing a study to improve the performance of the Missouri River Bank Stabilization and Navigation Project. The study is particularly focused on sustaining the navigation channel in light of changing hydrologic conditions and extreme flow regimes. The study will evaluate structural and well as operational and maintenance measure.

Paul Boyd explained the Corps' efforts to renew flow and stage frequency – i.e., the annual probability that a flow will be met or exceeded at a specific location. This dataset is important to inform an assessment of risk. This information will be used in the systemic and more local evaluations of measures needed to reduce that risk or improve resiliency to that risk. Boyd provided a detailed explanation of the methodology and the assumptions – e.g., the hydraulic impact on stage-flow as influenced by tributary backwaters or levees (including potential failures). Boyd said the Corps is planning for outreach in winter 2023 and is encouraging meetings with individual people or stakeholders.

Roberts explained outreach efforts to date on the flood studies, in partnership with Missouri DNR and other state agency partners.

Chris Wieberg applauded Roberts and the team of Corps and state agency staff. The study is a tremendous amount of work, requiring a high degree of stakeholder outreach and engagement. A third

party entity was leveraged to assess the various public interests and to understand their respective perspectives. That has been helpful to ensure there is outreach to all affected interests. Wieberg said the Missouri state government is contributing to the study. The legislature approved \$5 million to-date, and the Administration will be proposing another \$5 million allocation in the next legislative session. Wieberg reiterated Missouri's interest to ensure proper stakeholder involvement throughout the study process.

In response to a question from Shawn Sullivan, Roberts said the current estimated cost for the systemic study is \$7 million. The Federal government is contributing \$4 million and the four partnering states are sharing in contributing the remaining costs.

Mississippi River Cities and Towns Initiative

Safeguarding the Mississippi River Together (SMRT) Initiative

Saskia Pardaans said the Embassy of the Kingdom of the Netherlands is partnering with the Mississippi River Cities and Towns Initiative (MRCTI) and the Andrew Young Foundation to improve the resilience of the Mississippi River related to floods, droughts, water quality, social equity as well as ecological and economic health. Under the umbrella of the Safeguarding the Mississippi River Together (SMRT) initiative, the partnership recently launched a collaborative and planning and project development challenge. The purpose is to provide financial support to local entities to employ an innovative planning process to generate a local or regional adaptation plan and specific local project(s) to implement that plan.

Pardaans anticipates that this challenge will be launched in 2024, pending fundraising of about \$5 million to support the competitive process. The selection process will likely entail one or more multi-day workshops to facilitate information sharing, networking, and collaborative, innovative, and multi-disciplinary planning.

Loren Wobig raised a recent example of a similar competitive planning process. Even without being selected in the end, there was tremendous value in the education and networking and other benefits throughout the process. In response to a question from Wobig, Pardaans said a possible request for UMRBA is a) for its member states to collaborate with the local communities within their jurisdictions in developing a competitive proposal and b) to serve as technical experts in the multi-day workshop(s).

Mississippi River Compact

On behalf of the Mississippi River Cities and Towns Initiative (MRCTI), Alton, Illinois Mayor David Goins spoke about MRCTI's current priorities and partnerships, as including:

- Economic sustainability and environmental stewardship, including through a recent partnership with Red Lake Nation, Leech Lake Band of Ojibwe, and White Earth Nation.
- Reducing plastic pollution, including through a partnership with the United Nations to improve municipal waste management and infrastructure
- Improve drought resiliency, including by proposing an interstate compact among the 10 bordering river states with respect to governing out-of-basin water diversions

Mayor Goins also reported that Congress authorized a major component of MRCTI's SMRT legislation – i.e., a Lower Mississippi River ecosystem restoration program.

Loren Wobig asked if MRCTI has considered the role of a secretariat in its multi-state compact proposal. As an example, the Council of Great Lakes Governors serves as the secretariat to the Governors' Compact Council created by the Great Lakes-St. Lawrence River Basin Water Resources Compact. Colin Wellenkamp explained that, based on international models, MRCTI understands the value of a secretariat. While MRCTI does not currently have a position on who would serve in that role, Wellenkamp offered the potential Mississippi River Program Office that is being proposed in legislation.

Other Business

Future Meeting Schedule

February 2024 (Virtual)

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

May 2024 in St. Paul, Minnesota

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

August 2024 in St. Louis, Missouri

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

With no further business, the meeting adjourned at 3:10 p.m.

ATTACHMENT B

Executive Director's Report

- Executive Director's Report *(B-1 to B-6)*
- UMRBA H.R. 5722 Comment Letter (12/13/2023) *(B-7 to B-8)*
- Treasurer's Quarterly Statement (2/13/2024) *(B-9)*
- FY 2023 Profit and Loss Statement (6/30/2023) *(B-10 to B-12)*
- FY 2024 Profit and Loss Statement (2/13/2024) *(B-13 to B-15)*
- Balance Sheet (2/13/2024) *(B-16 to B-17)*



Executive Director's Report February 2024

ADVOCACY

Water Resources Development Act

Throughout this quarter, UMRBA staff have met with Congressional offices representing Illinois, Iowa, Minnesota, Missouri, and Wisconsin to explain UMRBA's priorities for the potential Water Resources Development Act of 2024 and provide support to offices in submitting their UMRBA-related requests to the respective House and Senate authorizing committees.

Navigation and Ecosystem Sustainability Program

UMRBA participated in the Waterways Council's hosted meetings on February 7, 2024 with Congressional offices regarding the Navigation and Ecosystem Sustainability Program. The requests were to pass an FY 2024 energy and water appropriations measure (rather than a continuing resolution agreement), fully spend the Inland Waterway Trust Fund monies in support of navigation projects, and support the proposed provision in WRDA 2024 to adjust the Inland Waterway Trust Fund cost share for projects intended to be fully funded through the Infrastructure Investment and Jobs Act.

COMMERCIAL NAVIGATION

National Waterways Foundation

Kirsten Wallace serves as a Trustee of the National Waterways Foundation, and participated in its November 15, 2023 meeting in New Orleans and February 6, 2024 meeting in Washington, D.C. In addition to routine business, the Foundation discussed ongoing projects related to workforce development, economic value of river transportation, and waterways beneficiaries as well as future research opportunities. On February 12, 2024, the Foundation launched renewed economic profiles for inland waterways states. The profiles are available here:

<https://nationalwaterwaysfoundation.org/foundation-studies/economic-impact-by-state>.

Waterways Council, Inc.

The Waterways Council held its Annual Waterways Symposium on November 14-15, 2023 in New Orleans and its Capitol Hill Fly-In on February 6-7, 2024 in Washington, D.C. The agendas included Waterways Council's priorities and accomplishments, political and financial briefings, and updates from the Corps on their national and regional navigation programs.

ECOSYSTEM HEALTH

Policy and Programmatic Interagency Coordination

UMRR Coordinating Committee Meeting

The UMRR Coordinating Committee met on October 25, 2023 in St. Louis, Missouri. The agenda involved programmatic briefings regarding accomplishments and progress related to habitat

rehabilitation and enhancement projects (HREPs), long term resource monitoring, and communications. The Committee also provided input and direction to Marshall Plumley and UMRBA regarding a scoping framework for developing the program's next strategic plan.

NESP Coordinating Committee Meetings

The Navigation and Ecosystem Sustainability Program (NESP) Consultation Committee met in-person on November 6, 2023 in the Quad Cities. The Committee also 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.

Programmatic Strategic Planning

Upper Mississippi River Restoration Program

The UMRR Coordinating Committee convened meetings on November 27, 2023 and December 11, 2023 to refine a process for developing the next strategic plan for UMRR. With advice from an "independent" facilitator, an interagency team of program leaders will determine a planning process and scope. The leadership team has agreed that the process shall employ a robust public participation, including through UMRR Coordinating Committee quarterly meetings, for exploration, discussion, review, and feedback on emerging ideas.

Navigation and Ecosystem Sustainability Program

An *ad hoc* group of the Navigation and Ecosystem Sustainability Program Consultation Committee is developing a framework to guide the purpose, objectives, and process for strategic planning. UMRBA staff are participating in the *ad hoc* group.

Communications

Communications and Outreach Team

UMRBA staff participated in the UMRR Communication and Outreach Team's (COT) November 1, 2023 and February 7, 2024 meetings. Topics included prioritizing the team's calendar year 2024 plan of work, providing support for the release of the 2022 UMRR Report to Congress, initiating a photo contest, and planning to update UMRR related material at current kiosks/interpretive stations along the UMRS.

Ecological Sustainability and Restoration

NESP Systemic Forest Stewardship

UMRBA participated in a NESP systemic forest stewardship planning meeting on February 1, 2024. Topics discussed include the NESP authority related to forest management, a programmatic environmental assessment, and updates to the Implementation Appendix of the Systemic Forest Stewardship Plan.

NESP Systemic Ecosystem Planning Team

UMRBA staff participated in meetings on February 8, 2024 and February 15, 2024 to discuss a general process and timeline for a) reviewing the existing four reach plans and b) renewing the First Increment

Plan for NESP ecosystem restoration projects. The review of reach plans will focus on the key elements of the existing reports (e.g., 2009 Ecosystem restoration objectives), primarily by identifying discrete elements of the existing reach plans that are no longer valid due to specifically identifiable changes.

Riverine Aquatic Sediment Placement

The Corps Engineer Research and Development Center (ERDC) and the Corps' Upper Mississippi River Districts collaborated in hosting an interagency workshop focused on riverine aquatic sediment placement. UMRBA staff participated in the workshop, which was convened on January 24-25, 2024 in St. Paul. The purpose for the workshop was to explore innovative approaches and respective associated risks to beneficial use of dredged material in the Upper Mississippi River System.

Science/Long Term Resource Monitoring

USGS hosted the biennial UMRR Science Meeting on January 16-18, 2024 at the Upper Midwest Environmental Science Center in La Crosse, Wisconsin. The purpose of the meeting was to identify and prioritize science and other information needs and to develop research proposal ideas through a collaborative, interagency and interdisciplinary process. Thematic areas were modeling physical and biological components, water quality, water temperature, fisheries, floodplain ecology, and ecological response to restoration.

Interagency Meetings

UMRBA staff participated in the following meetings:

- Minnesota DNR Roundtable (January 19, 2024)
- St. Paul District River Resource Forum (December 5-6, 2024)
- St. Paul District Fish and Wildlife Working Group (January 9, 2024)
- Rock Island District River Resources Coordinating Team (January 23, 2024)
- 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 have completed the Illinois statewide Inland Sensitivity Atlas (ISA) update and continue work on Wisconsin updates. Staff are also developing a new jurisdictional boundary layer for inclusion in the regional database. UMRBA incorporated updates into the regional database that it developed for Illinois and Wisconsin as well as updates received from the Great Lakes Commission (GLC) for Ohio and adjacent counties in Kentucky and West Virginia.

Staff participated in monthly Mapping Group meetings and an Inland Zone Planning call on February 8, 2024.

UMRBA provided general support for spill response planning in the Upper Mississippi River, Minneapolis/St. Paul, and Red River sub-areas. UMRBA attended the Greater St. Louis Sub-area planning meeting on November 1, 2023.

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

The UMR Spills Group held its virtual fall meeting on October 31, 2023. The Group discussed various response-related planning activities scheduled throughout the next year, including a potential response exercise. Tetra Tech, a contractor for USEPA, demonstrated a Mississippi River-centric response map viewer with analysis and reporting tools it has developed for USEPA Region 7.

The Spills Group also met virtually on December 7, 2023 to further develop the idea of a UMRBA-hosted workshop or conference in 2024.

UMRBA is contributing to an interagency planning effort to employ a spill response exercise, which is scheduled for June 24-26, 2024 in the Quad Cities area. The event will include training.

UMRBA presented Inland Sensitivity Atlas and regional spill response planning resources to Mississippi River CAER groups on February 7, 2024.

WATER QUALITY

How Clean is the River? Report

On January 9, 2024, UMRBA published the report titled, *How Clean is the River?* The report is a 30-year trend analysis of water quality conditions in the Upper Mississippi and Illinois Rivers – i.e., evaluating data collected from 1989 to 2018. The report highlights a variety of notable positive trends and areas of improvement for the river. The conclusions and press release are available in Attachment C of the agenda packet, and the full report is available here: <https://umrba.org/how-clean-river-2023>.

Water Quality Committees

The UMRBA Water Quality Task Force winter meeting was held on February 1, 2024. The Task Force focused on emerging contaminants studies on mayflies, summer 2024 monitoring plans, Iowa's harmful algal bloom monitoring, and a Mississippi River Water Quality Survey.

The UMRBA Water Quality Task Force met on January 31, 2024 to plan fixed site implementation of its UMR Interstate Water Quality Monitoring Plan beginning in October 2025. The majority of the discussion centered on a comparison on state agency laboratory methodologies to ensure that field sampling and analytical protocols yield comparable results.

USEPA Region 5 Water Quality Managers' Meeting

The USEPA Region 5 Water Quality Managers' Meeting was held December 5-7, 2023 in Chicago, Illinois. The annual meeting allows managers the opportunity to collaborate, share successes and challenges from the 2023 year, and recommend regional-level initiatives. Select topics discussed were state- and Region 5-specific programmatic updates, monitoring initiative proposals, and PFAS monitoring.

Hypoxia Task Force Meeting

The Hypoxia Task Force convened the following series of meetings December 6-7, 2023 in Fayetteville, Arkansas: Executive Committee Session, Executive Committee Public Meeting, and Coordinating Committee Workshop. State agency membership from the 12 Hypoxia Task Force states, federal agencies, universities, and sub-basin committees gathered to 1) share and amplify Infrastructure Investment and Jobs Act/Bipartisan Infrastructure Law work of HTF members and 2) prepare for 2025

Interim Target communications. UMRBA provided its proposed work plan to support the Upper Mississippi River Sub-Basin Committee using its Gulf Hypoxia Program allocation.

Meetings and Conferences

UMRBA staff participated in the following conferences and partnership meetings:

- New England Interstate Water Pollution Control Commission National Nonpoint Source Workshop (November 6-9, 2023)
- University of Wisconsin-Madison Division of Extension Algal Bloom Symposium (January 4, 2024)
- Wisconsin Salt Wise Winter Salt Awareness Week (January 22-26, 2024)
- USGS Illinois River Basin Next Generation Water Observing System Stakeholder Meeting (January 17, 2024)
- Hypoxia Task Force Coordinating Committee monthly meetings and communications work group (January 24, 2024)

WATER QUANTITY/RESILIENCE

Comments on Flood Legislation

In response to Rep. Mary Miller (Illinois) introducing the Upper Mississippi River Levee and Floodwall Design Standards bill (H.R. 5722), UMRBA submitted a comment letter, dated December 13, 2023, to the House Transportation and Infrastructure Committee and Senate Environment and Public Works Committee. The letter is provided on pages B-7 to B-8 of the agenda packet.

Downscale Climate Modeling

In November and December 2023, UMRBA convened three workshops among potential users of the downscale hydroclimatic forecasts being created by the University of Minnesota Institute on the Environment (UMN IonE) and the National Oceanic and Atmospheric Administration (NOAA). UMRBA communicated a summary of users' perspectives and input to UMN IonE and NOAA for their use in developing climate and hydrologic outputs that allow for integration into decisions and reuse by technical stakeholders within the UMRBA region.

Water Availability Assessment

In partnership with UMRBA, on February 9, 2024, the University of Minnesota submitted to the Cooperative Institute for Research to Operations in Hydrology (CIROH) a research proposal, titled "Upper Mississippi River System Interstate Water Availability Assessment." This project would be funded by the U.S. Geological Survey Integrated Water Availability Assessment Program. The purpose for this research project is to strengthen the scientific basis for water management decision making through the development of an Upper Mississippi River System Integrated Water Availability Assessment. The long-term vision is to build a comprehensive hydrologic analysis to assess water availability related to the river's many complex and intertwined water uses. This approach will allow for building a framework that illuminates which sub-watersheds have greater effects on river flows in the Upper Mississippi River System (UMRS).

FINANCIAL REPORT

Attached as page B-9 is UMRBA Treasurer Jason Tidemann's statement regarding his review of UMRBA's financial statement for the period of October 1, 2023 to December 31, 2023.

Attached as pages B-10 to B-17 are UMRBA's FY 2023 and 2024 budget reports and balance sheet. As of June 30, 2023, ordinary income for FY 2023 totaled \$864,002.98 and expenses totaled \$948,238.34 for net ordinary income of -\$84,235.36. As of February 13, 2024, ordinary income for FY 2024 totaled \$632,245.50 and expenses totaled \$660,611.32 for net ordinary income of -\$28,365.82. As of this date, UMRBA's cash assets totaled \$199,939.20.



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 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

Dear Representatives Graves, Larsen, Rouzer, and Napolitano:

The Upper Mississippi River Basin Association (UMRBA) strongly supports efforts to improve the ability of people and organizations to prepare for, respond to, and recover from major floods events. This involves improving and better utilizing information to understand their respective risk of being impacted from flooding on the Upper Mississippi River System and to assess their vulnerabilities.

UMRBA applauds the leadership of Representative Mary Miller and other members of Congress in improving flood protection on the Upper Mississippi River System. As such, the states support the basic purpose and objectives of the Upper Mississippi River Levee and Floodwall Design Standards bill (H.R. 5722), including by more frequently renewing surface water profiles and flood frequency probabilities.

UMRBA acknowledges the increasing likelihood that high intensity floods will be experienced on the Upper Mississippi River System and that people, economies, and ecosystems will be impacted. Levee systems authorized fifty or more years ago likely do not offer the same levels of protection as we understood them to have then.

In the spirit of continued cooperation with Congress, our federal agency partners, affected interests, UMRBA is writing to respectfully offer the following comments regarding H.R. 5722:

- UMRBA acknowledges the importance of more frequently renewing surface water profiles and flood frequency probabilities to inform risk assessments and systemic and localized planning.

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

- UMRBA supports efforts to improve flood protection in certain places given current understandings of flood frequency probabilities and associated impacts.
- UMRBA's interpretation of the bill is that levees would be automatically allowed to adjust levee protection without mitigation for impacts onto others. However, UMRBA recognizes that any adjustments to levee heights and placement must abide by applicable state and federal law. That involves evaluating, acknowledging, and mitigating for any resulting impacts to other areas of the river floodplain.
- UMRBA respectfully requests that the bill include language acknowledging that modifications to levee heights and placement must abide by applicable state and federal law.

Relatedly, UMRBA is seeking a federal authorize in the Water Resources Development Act of 2024 to develop long term, integrated approaches to improving flood conveyance and storage in the Upper Mississippi River System floodplain, systemically and locally. We intend for the process to facilitate a collaborative approach to evaluating of an extensive array of structural and nonstructural measures that would collectively improve flood conveyance and storage.

Please direct any questions about UMRBA's comments with respect to H.R. 5722, as introduced on September 27, 2023, to Kirsten Wallace at kwallace@umrba.org.

Sincerely,



Kirsten Wallace
Executive Director
Upper Mississippi River Basin Association

cc: H.R. 5722 Bill Sponsors
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

Natalie Lenzen

From: Tidemann, Jason (DNR) <jason.tidemann@state.mn.us>
Sent: Tuesday, February 13, 2024 1:08 PM
To: Natalie Lenzen
Subject: UMRBA October 1 - December 31 Treasurer Report

Hello Kirsten,

As Treasurer, I have reviewed the monthly financial statements for the period 10/1/23-12/31/23. 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

Jason Tidemann
MN Department of Natural Resources
Grants Coordinator
Liaison to Legislative-Citizen Commission on MN Resources
500 Lafayette Road
St. Paul, MN 55155
651-259-5534



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 | | | |
| Short Term Interest | | | |
| Short Term (CD) | 3,108.12 | 4,000.00 | -891.88 |
| 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 | 10,532.88 | 12,200.00 | -1,667.12 |
| Total 4200 Interest Income | 10,532.88 | 12,200.00 | -1,667.12 |
| 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 | \$864,002.98 | \$876,057.60 | \$ -12,054.62 |
| GROSS PROFIT | \$864,002.98 | \$876,057.60 | \$ -12,054.62 |
| Expenditures | | | |
| 5000 Depreciation | | | |
| Depreciation OPA | 1,300.62 | | 1,300.62 |
| Depreciation UMRBA | 1,393.06 | | 1,393.06 |
| Gross Payroll | | | |
| Accrued Vacation | 5,870.35 | | 5,870.35 |
| Benefits | 108,880.87 | 125,000.00 | -16,119.13 |
| 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 |

Upper Mississippi River Basin Association

FY 2023 Profit & Loss Budget Overview

July 2022 - June 2023

| | TOTAL | | |
|---------------------------------------|-------------------|-------------------|-------------------|
| | ACTUAL | BUDGET | OVER BUDGET |
| UMRBA Time Wages | 1.75 | 0.00 | 1.75 |
| Total Gross Payroll | 190,151.28 | 125,000.00 | 65,151.28 |
| Total 5000 Depreciation | 192,844.96 | 125,000.00 | 67,844.96 |
| 5001 Payroll Expenses | | | |
| Accrued Vacation FICA | 449.06 | | 449.06 |
| Medicare Company | 8,542.30 | 8,627.50 | -85.20 |
| Salary | 432,530.50 | 470,000.00 | -37,469.50 |
| SocSec Company | 36,606.32 | 36,890.00 | -283.68 |
| Taxes | 2,170.87 | | 2,170.87 |
| SUTA (Minnesota UC) | 857.34 | 297.50 | 559.84 |
| Workforce Enhancement Fee | 362.80 | 297.50 | 65.30 |
| Total Taxes | 3,391.01 | 595.00 | 2,796.01 |
| Total 5001 Payroll Expenses | 481,519.19 | 516,112.50 | -34,593.31 |
| 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 | 14,930.00 | 15,000.00 | -70.00 |
| Total 5101 Legal and Financial | 20,976.55 | 21,270.00 | -293.45 |
| 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 | -5,647.16 | | -5,647.16 |
| Equipment (Maint./Rental) | 2,690.36 | 1,000.00 | 1,690.36 |
| Equipment (Purchase) | 5,500.07 | | 5,500.07 |
| Total 5104 Equipment | 2,543.27 | 1,000.00 | 1,543.27 |
| 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 | 42,769.94 | 40,000.00 | 2,769.94 |
| 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 |

Upper Mississippi River Basin Association

FY 2023 Profit & Loss Budget Overview

July 2022 - June 2023

| | | TOTAL | |
|--|----------------------|----------------------|----------------------|
| | ACTUAL | BUDGET | OVER BUDGET |
| 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 | 436.38 | 6,500.00 | -6,063.62 |
| Equipment OPA | 0.00 | 1,000.00 | -1,000.00 |
| Other OPA | | 50.00 | -50.00 |
| Travel OPA | 2,430.29 | 2,000.00 | 430.29 |
| Total 5301 OPA Expenses | 2,866.67 | 9,550.00 | -6,683.33 |
| 5302 USEPA NRS Workshops | | | |
| Communications | 21,558.28 | 3,900.00 | 17,658.28 |
| Meeting Expenses | 3,581.03 | 40,000.00 | -36,418.97 |
| 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 | 32,736.49 | 58,700.00 | -25,963.51 |
| 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 | \$948,238.34 | \$935,532.50 | \$12,705.84 |
| NET OPERATING REVENUE | \$ -84,235.36 | \$ -59,474.90 | \$ -24,760.46 |
| NET REVENUE | \$ -84,235.36 | \$ -59,474.90 | \$ -24,760.46 |

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 | 67,000.00 | 67,000.00 | 0.00 |
| Minnesota Dues | 67,000.00 | 67,000.00 | 0.00 |
| 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 | 421,400.00 | 443,000.00 | -21,600.00 |
| 4100 Contracts and Grants | | | |
| COE (UMRR) | 28,400.00 | 135,500.00 | -107,100.00 |
| EPA (OPA) | 140,187.55 | 240,000.00 | -99,812.45 |
| Interstate WQ Pilot | 2,906.30 | 0.00 | 2,906.30 |
| Missouri DoC (WLM) | | 0.00 | 0.00 |
| NESP | | 200,000.00 | -200,000.00 |
| USEPA (HTF) | | 75,000.00 | -75,000.00 |
| USEPA (OWOW) | 32,867.23 | 80,000.00 | -47,132.77 |
| USGS Nature-Based Solutions | | 50,000.00 | -50,000.00 |
| Total 4100 Contracts and Grants | 204,361.08 | 780,500.00 | -576,138.92 |
| 4200 Interest Income | | | |
| Short Term Interest | | | |
| Short Term (CD) | | 17,300.00 | -17,300.00 |
| Short Term (Checking) | 3,188.87 | 6,000.00 | -2,811.13 |
| Short Term (Savings) | | 0.00 | 0.00 |
| Short Term (Sweep) | 2,253.12 | 8,400.00 | -6,146.88 |
| Total Short Term Interest | 5,441.99 | 31,700.00 | -26,258.01 |
| Total 4200 Interest Income | 5,441.99 | 31,700.00 | -26,258.01 |
| 4300 Other Income | | | |
| Meeting Meals Income | 80.00 | | 80.00 |
| Workshop Meals Income | 962.43 | | 962.43 |
| Total 4300 Other Income | 1,042.43 | | 1,042.43 |
| Total Revenue | \$632,245.50 | \$1,255,200.00 | \$ -622,954.50 |
| GROSS PROFIT | \$632,245.50 | \$1,255,200.00 | \$ -622,954.50 |
| Expenditures | | | |
| 5000 Depreciation | | | |
| Gross Payroll | | | |
| Benefits | -5,480.34 | | -5,480.34 |
| Total Gross Payroll | -5,480.34 | | -5,480.34 |
| Total 5000 Depreciation | -5,480.34 | | -5,480.34 |
| 5001 Payroll Expenses | | | |
| ICHRA | 867.58 | | 867.58 |
| Salary | 449,097.16 | 810,383.77 | -361,286.61 |

Upper Mississippi River Basin Association

FY 2024 Profit & Loss Budget Overview

July 2023 - June 2024

| | TOTAL | | |
|---|-------------------|-------------------|--------------------|
| | ACTUAL | BUDGET | OVER BUDGET |
| SocSec Company | -1,472.38 | | -1,472.38 |
| Taxes | 36,091.67 | 62,017.30 | -25,925.63 |
| SUTA (Minnesota UC) | -1.21 | 405.34 | -406.55 |
| Workforce Enhancement Fee | -1.21 | 405.34 | -406.55 |
| Total Taxes | 36,089.25 | 62,827.98 | -26,738.73 |
| Total 5001 Payroll Expenses | 484,581.61 | 873,211.75 | -388,630.14 |
| 5002 Benefits Administration | 1,413.00 | 1,000.00 | 413.00 |
| 5100 Space Rental | | | |
| Office Rental | 37,261.74 | 55,089.00 | -17,827.26 |
| Total 5100 Space Rental | 37,261.74 | 55,089.00 | -17,827.26 |
| 5101 Legal and Financial | | | |
| Bank Charges | | 40.00 | -40.00 |
| Insurance | 2,249.35 | 6,200.00 | -3,950.65 |
| Legal and Tax Services | 360.00 | 5,000.00 | -4,640.00 |
| Total 5101 Legal and Financial | 2,609.35 | 11,240.00 | -8,630.65 |
| 5102 Telephone/Communications | 10,311.34 | 8,000.00 | 2,311.34 |
| 5103 Communications/Publications | 45,165.00 | 50,000.00 | -4,835.00 |
| 5104 Equipment | 86.59 | | 86.59 |
| Equipment (Maint./Rental) | 72.57 | 1,000.00 | -927.43 |
| Equipment (Purchase) | 4,333.30 | | 4,333.30 |
| Total 5104 Equipment | 4,492.46 | 1,000.00 | 3,492.46 |
| 5105 Supplies | 1,318.37 | 5,000.00 | -3,681.63 |
| 5106 Postage | 66.00 | 200.00 | -134.00 |
| 5107 Other Services | 15,355.00 | 10,000.00 | 5,355.00 |
| 5200 Meeting Expenses | 15,989.03 | 50,000.00 | -34,010.97 |
| 5201 Travel | 25,337.61 | 50,000.00 | -24,662.39 |
| 5202 State Travel Reimbursement | | | |
| Illinois | 958.80 | 5,000.00 | -4,041.20 |
| Iowa | 247.28 | 5,000.00 | -4,752.72 |
| Minnesota | 352.80 | 5,000.00 | -4,647.20 |
| Missouri | 1,000.08 | 5,000.00 | -3,999.92 |
| State WQ Travel | 494.39 | 3,500.00 | -3,005.61 |
| Wisconsin | | 5,000.00 | -5,000.00 |
| Total 5202 State Travel Reimbursement | 3,053.35 | 28,500.00 | -25,446.65 |
| 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 | 657.84 | 6,500.00 | -5,842.16 |
| Equipment OPA | 4,186.46 | 1,000.00 | 3,186.46 |
| Other OPA | | 50.00 | -50.00 |

Upper Mississippi River Basin Association

FY 2024 Profit & Loss Budget Overview

July 2023 - June 2024

| | TOTAL | | |
|---------------------------------------|----------------------|-----------------------|-----------------------|
| | ACTUAL | BUDGET | OVER BUDGET |
| Travel OPA | 2,170.15 | 2,000.00 | 170.15 |
| Total 5301 OPA Expenses | 7,014.45 | 9,550.00 | -2,535.55 |
| 5302 USEPA NRS Workshops | | | |
| Communications | 600.00 | 3,900.00 | -3,300.00 |
| Meeting Expenses | 4,518.26 | 40,000.00 | -35,481.74 |
| Supplies | | 100.00 | -100.00 |
| Travel | 163.71 | 4,700.00 | -4,536.29 |
| Travel Assistance | 6,841.38 | 10,000.00 | -3,158.62 |
| Total 5302 USEPA NRS Workshops | 12,123.35 | 58,700.00 | -46,576.65 |
| 5999 Miscellaneous Expense | 0.00 | | 0.00 |
| Total Expenditures | \$660,611.32 | \$1,249,490.75 | \$ -588,879.43 |
| NET OPERATING REVENUE | \$ -28,365.82 | \$5,709.25 | \$ -34,075.07 |
| NET REVENUE | \$ -28,365.82 | \$5,709.25 | \$ -34,075.07 |

Upper Mississippi River Basin Association

Balance Sheet

As of February 13, 2024

| | TOTAL |
|-----------------------------------|---------------------|
| ASSETS | |
| Current Assets | |
| Bank Accounts | |
| Checking HT 2732 | 199,939.20 |
| Investment | |
| CD | 409,801.85 |
| CD_2 | 50,000.00 |
| Sweep HT 5401 | 40,395.58 |
| Total Investment | 500,197.43 |
| Total Bank Accounts | \$700,136.63 |
| Accounts Receivable | |
| Contract/grants | |
| Invoiced/Billable | 10,606.30 |
| Total Contract/grants | 10,606.30 |
| Total Accounts Receivable | \$10,606.30 |
| 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 | \$718,995.03 |
| Fixed Assets | |
| 604(b) Equipment | 568.95 |
| Accum. Deprec. 604(b) | -568.95 |
| Accum. Deprec. OPA | -23,004.15 |
| Accum. Deprec. STC | -2,989.68 |
| Accum. Deprec. UMRBA | -32,789.73 |
| Accum. Deprec. WQ | -1,290.00 |
| OPA Equipment | 28,205.12 |
| STC Equipment | 4,332.67 |
| UMRBA Equipment | 39,955.18 |
| WQ Equipment | 1,290.47 |
| Total Fixed Assets | \$13,709.88 |
| TOTAL ASSETS | \$732,704.91 |

Upper Mississippi River Basin Association

Balance Sheet

As of February 13, 2024

| | TOTAL |
|---|---------------------|
| LIABILITIES AND EQUITY | |
| Liabilities | |
| Current Liabilities | |
| Credit Cards | |
| Visa Chase 5294 | 415.19 |
| Total Credit Cards | \$415.19 |
| 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 | 51,656.55 |
| Accrued Vacation FICA | 3,951.71 |
| 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 | 52.10 |
| 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 | 56,325.26 |
| Total Other Current Liabilities | \$62,150.91 |
| Total Current Liabilities | \$62,566.10 |
| Total Liabilities | \$62,566.10 |
| Equity | |
| Retained Earnings | 698,504.63 |
| Net Revenue | -28,365.82 |
| Total Equity | \$670,138.81 |
| TOTAL LIABILITIES AND EQUITY | \$732,704.91 |

ATTACHMENT C

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

- Conclusions and Recommendations *(C-1)*
- Press Release (1/9/2024) *(C-2 to C-3)*

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

PRESS RELEASE

January 9, 2024

Technical Contact:

Lauren Salvato, Policy and Programs Director, Upper Mississippi River Basin Association, (651) 224-2880, lsalvato@umrba.org

State Agency Communication Contacts:

Iowa Department of Natural Resources, Tammie Krausman, tammie.krausman@dnr.iowa.gov

Illinois Environmental Protection Agency, Kim Biggs, kim.biggs@illinois.gov

Minnesota Pollution Control Agency, Mike Rafferty, michael.rafferty@state.mn.us

Missouri Department of Natural Resources, Brian Quinn, brian.quinn@dnr.mo.gov

Wisconsin Department of Natural Resources, Katie Grant, dnrpress@wisconsin.gov

UMRBA Presents Water Quality Trends and Recommends Management Actions for the Upper Mississippi River System

The Upper Mississippi River Basin Association (UMRBA) – the Governors’ interstate water quality entity – found water quality on the Upper Mississippi River System has improved greatly since the 1970s. Significant investments from the public sector and private interests have reduced nonpoint source and point source pollution. However, much work remains to preserve water quality gains and address unresolved and emerging issues.

Specifically, in light of the results, UMRBA calls upon its member states and partners in various levels of government and the conservation, agriculture, and transportation sectors to engage collaboratively in support of actions that will maintain positive trends, address negative trends, and support data collection efforts that will fill important information gaps.

“Understanding and improving water quality of the Upper Mississippi River System (including the Illinois River) 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 making informed management decisions for improving the river’s water quality,” says Dru Buntin, Missouri Department of Natural Resources Director.

UMRBA’s second collaborative assessment of water quality on the Upper Mississippi River System, the “How Clean is the River?” report, measures trends between 1989 and 2018 and found the following notable trends and information gaps:

Notable Positive Trends

- Dissolved oxygen concentrations have increased throughout the Upper Mississippi River System

Notable Negative Trends

- Concentrations of chloride and sulfate have increased throughout the Upper Mississippi River System

Important Data Gaps

- Water quality monitoring frequency, sampling methods, and laboratory analytical methods are not consistent across the Upper Mississippi River System

- Total suspended solids have decreased significantly throughout the Upper Mississippi River System
- Total phosphorus concentrations have decreased in the Upper Mississippi River above Pool 13 (near Bellevue, Iowa)
- Total and inorganic nitrogen have decreased in the La Grange Pool of the Illinois River
- Lead has decreased in the Upper Mississippi River Pool 4 (near Red Wing, Minnesota)
- Total nitrogen appears to be increasing above Pool 13 (near Bellevue, Iowa), however the trend has low confidence
- Total phosphorus is increasing in Upper Mississippi River Pool 15 (near Rock Island, Illinois)
- Lead has increased in the Upper Mississippi River Pools 15 (near Rock Island, Illinois) and 17 (near New Boston, Illinois), but levels are below the chronic aquatic life use threshold
- 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

This report is possible through aggregating existing datasets on the Upper Mississippi River System. There is a need for more comprehensive and long-term data collection.

“The Upper Mississippi River Interstate Water Quality Monitoring Plan is a holistic and collaborative approach among multiple levels of government to comprehensively monitor the Upper Mississippi River. This coordinated monitoring and data sharing approach will ensure pollutants – including contaminants of emerging concern - are properly assessed, while also enabling the Association and its member states to advance our environmental justice and climate change efforts,” says Kirsten Wallace, Executive Director.

UMRBA fosters cooperative action and leadership as the Upper Mississippi River Basin’s interstate water quality entity, serving the five states of the Upper Mississippi River System – Illinois, Iowa, Minnesota, Missouri, and Wisconsin. UMRBA strives to promote the states’ mutual interests and convenes a Water Quality Executive Committee and a Water Quality Task Force to improve water quality monitoring and assessment and to enhance consistencies in the states’ water quality programs in the context of the Mississippi River.

The full report, including maps of trends in all 19 parameters, is available here: <https://umrba.org/how-clean-river-2023>.

ATTACHMENT D

U.S. Drought Monitor Midwest Report (2/6/2024)
(D-1)

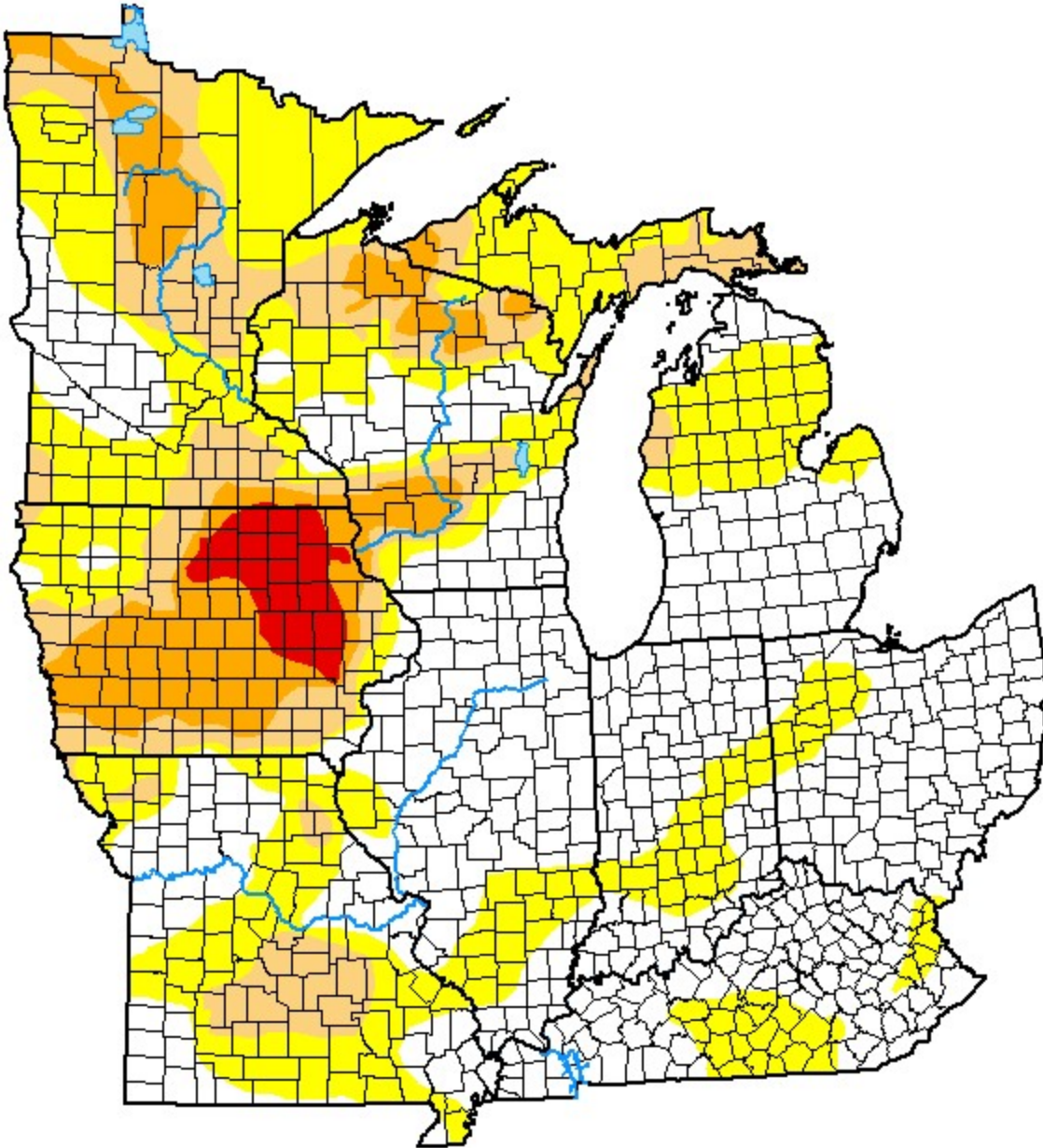
Midwest

February 6, 2024

(Released Thursday, Feb. 8, 2024)

Valid 7 a.m. EST

Drought Conditions (Percent Area)



| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
|--|-------|-------|-------|-------|-------|------|
| Current | 46.38 | 53.62 | 23.04 | 10.28 | 2.14 | 0.00 |
| Last Week <i>01-30-2024</i> | 46.17 | 53.83 | 23.15 | 10.28 | 2.14 | 0.00 |
| 3 Months Ago <i>11-07-2023</i> | 35.18 | 64.82 | 34.80 | 13.54 | 2.87 | 0.00 |
| Start of Calendar Year <i>01-02-2024</i> | 22.92 | 77.08 | 50.25 | 20.76 | 4.20 | 0.00 |
| Start of Water Year <i>09-26-2023</i> | 16.82 | 83.18 | 54.98 | 23.81 | 6.21 | 0.13 |
| One Year Ago <i>02-07-2023</i> | 62.86 | 37.14 | 17.54 | 5.71 | 1.00 | 0.06 |

Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Deborah Bathke
National Drought Mitigation Center



droughtmonitor.unl.edu

ATTACHMENT E

Senate UMRR FY 2025 Funding Request Letter to Administration (01/31/2024)

(E-1 to E-2)



January 31, 2024

The Honorable Shalanda Young
Director
Office of Management and Budget
725 17th Street, NW
Washington, DC 20503

The Honorable Michael L. Connor
Assistant Secretary of the Army - Civil Works
Department of the Army
108 Army Pentagon
Washington, DC 20310

Dear Director Young and Assistant Secretary Connor:

We write in continued support of the Army Corps of Engineers' (Corps) Upper Mississippi River Restoration (UMRR) program. The program has demonstrated its success in reversing trends of degradation of the Mississippi River ecosystem and increasing the abundance and quality of fish and wildlife habitat. Indeed, UMRR has proven that investing in the Upper Mississippi River ecosystem strengthens the nation's economy and quality of life for over 30 years. Therefore, we respectfully request that you include \$55 million for UMRR in the President's Fiscal Year 2025 budget.

The UMRR program plays a critical role in habitat restoration to help ensure important ecological services and uses are sustained for future generations, such as clean water benefitting municipalities, manufacturers, and agricultural and energy producers. The Upper Mississippi is a major tourism and recreation hub, generating over \$24.6 billion annually, with UMRR's habitat projects expanding the draw of visitors. UMRR restoration projects are tested and proven to address the most significant degrading influences to the ecosystem. UMRR invests significantly in data research of the habitats to better understand and improve the resiliency of the Upper Mississippi River.

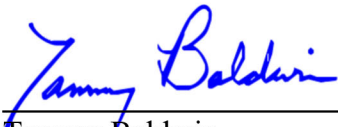
The program helps ensure thousands of species of birds, fish, and other wildlife continue to thrive in their natural habitats in and along the Mississippi River. UMRR projects protect wetlands and lakes from fluctuating water levels and high sedimentation, recreate islands to provide refuge and food for many species of fish and wildlife, and restore natural diversity of water velocities and depths to improve fish habitat. Projects help protect against threats from invasive species, including Asian carp, that outcompete native fish and wildlife for food sources and limited habitat. Still more projects restore forest health and diversity.

It is imperative to build on the progress of the UMRR program to ensure it can continue to advance its mission and goals. FY 2025 promises to be another extraordinary year for UMRR with several high-profile projects planned for implementation, and more in the pipeline, provided the program continues to receive sufficient funding.

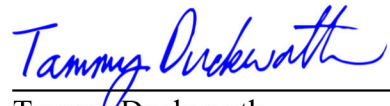
UMRR has broad, bipartisan support across Illinois, Iowa, Minnesota, Missouri and Wisconsin, as well as support of the navigation industry and conservation interests. As you finalize the Army Corps of Engineers Fiscal Year 2025 budget, we encourage you to recommend \$55 million for UMRR to continue to ensure this program has the resources needed to protect the river's integrity and wildlife for generations to come.

Thank you for your consideration of our request.

Sincerely,



Tammy Baldwin
United States Senator



Tammy Duckworth
United States Senator



Richard J. Durbin
United States Senator



Tina Smith
United States Senator



Amy Klobuchar
United States Senator

ATTACHMENT F

Minnesota Invasive Carp Management

- Minnesota Invasive Carp Action Plan: Summary of Actions Excerpt (1/18/2024) (*F-1 to F-9*)

Full report:

https://files.dnr.state.mn.us/natural_resources/invasives/aquaticanimals/asiancarp/invasive-carp-action-plan-2024.pdf

Appendix A – summary of actions

The actions in the 2024 revision of the Invasive Carp Action Plan are listed below, along with icons describing partnership and funding needs and the estimated timeframe for each action. These actions are characterized based on DNR’s judgement at the time of plan revision. Actual implementation of any given action will depend on the availability of resources and the status of the invasive carp population in Minnesota. Actions may not be completed if they are made obsolete by new technologies or changing conditions. More information about each set of actions can be found in the full text of the Action Plan.

Key to symbols

 Action will require partnership


\$ Action will require new, increased, or renewed funding. This icon may appear next to actions where partners would be leading the action and/or funding would be directed to an entity other than the DNR.









Key to Timeframe categories







Continuous - action is already being taken, and may continue, improve, and/or increase over the lifetime of the plan (2024-2033)

Start 2024-2028 - new action is a relatively high priority and it should be initiated in the first five years of the plan, though it may not be completed during that timeframe







Start 2029-2033 - new proposed action may need additional time, resources, or depend on implementation of other actions before it can be undertaken, and it is therefore more likely to be initiated during the second five years of the plan







| Action | Requires partners | Requires new funding | Timeframe |
|--|--|----------------------|------------|
| 1.1. Tag and track invasive carp in the Mississippi River. | | | |
| • Maintain and use receivers | | | Continuous |
| • Share telemetry data with FishTracks | | | Continuous |
| • Continue to coordinate with partners |  | | Continuous |



| Action | Requires partners | Requires new funding | Timeframe |
|--|--|----------------------|-----------------|
| <ul style="list-style-type: none"> Expand receiver coverage |  | \$ | Start 2024-2028 |
| <ul style="list-style-type: none"> Consider increasing number of tagged carp |  | \$ | Start 2024-2028 |
| 1.2. Apply data from targeted commercial fishing to capture invasive carp. | | | |
| <ul style="list-style-type: none"> Use data from captured carp to inform management | | | Continuous |
| <ul style="list-style-type: none"> Use regional data to inform regional management |  | | Continuous |
| 1.3. Conduct invasive carp egg and larval surveys. | | | |
| <ul style="list-style-type: none"> Monitor for invasive carp spawning indicators | | | Continuous |
| <ul style="list-style-type: none"> Model silver carp reproduction |  | | Start 2024-2028 |
| <ul style="list-style-type: none"> Coordinate with other states to monitor downstream |  | \$ | Start 2024-2028 |
| 1.4. Continue systematic and coordinated annual fisheries monitoring programs. | | | |
| <ul style="list-style-type: none"> Continue annual fisheries surveys with partners |  | | Continuous |
| 1.5. Apply environmental DNA (eDNA) sampling systematically. | | | |
| <ul style="list-style-type: none"> Use eDNA information to inform management |  | | Continuous |
| <ul style="list-style-type: none"> Evaluate new eDNA applications |  | | Continuous |





| Action | Requires partners | Requires new funding | Timeframe |
|--|--|----------------------|-----------------|
| 1.6. Use available data to model abundance and spatial distribution | | | |
| <ul style="list-style-type: none"> Explore options for estimating abundance to inform management |  | \$ | Continuous |
| 1.7. Support research on early detection and distribution of invasive carp. | | | |
| <ul style="list-style-type: none"> Continued research includes eDNA, risk assessment, and capture characteristics |  | | Continuous |
| <ul style="list-style-type: none"> Explore new research including applying sonar and attractant technologies |  | \$ | Start 2024-2028 |
| 1.8. Enter invasive carp collections into the USGS Nonindigenous Aquatic Species database. | | | |
| <ul style="list-style-type: none"> Ensure invasive carp detections are reported to USGS | | | Continuous |
| 2.1. Work with state and federal partners to advance scoping, design, and installation of a comprehensive, permanent deterrent at Lock and Dam 19. | | | |
| <ul style="list-style-type: none"> Advocate and provide expertise for this effort |  | | Start 2024-2028 |
| <ul style="list-style-type: none"> Consider other invasive fish in scoping and design |  | \$ | Start 2024-2028 |
| 2.2. Characterize potential watershed breaches - Upper Minnesota River (above Granite Falls), Red River, and Missouri River basin. | | | |
| <ul style="list-style-type: none"> Map, survey, and prioritize potential watershed breaches that have not yet been characterized |  | \$ | Start 2024-2028 |


| Action | Requires partners | Requires new funding | Timeframe |
|--|--|----------------------|---------------------------|
| 2.3. Scope feasibility and design for installing deterrents at Locks and Dams (LD) 5 and 4 to improve capabilities to deter invasive carp; secondarily, at LD 2 and 8. | | | |
| <ul style="list-style-type: none"> • Scope and design deterrents in lock chambers at LD 4 and 5 |  | \$ | Start 2024-2028 |
| <ul style="list-style-type: none"> • Evaluate deterrents or measures for reducing passage at spillway gates (LD 4 and 5) |  | \$ | Start 2024-2028 |
| <ul style="list-style-type: none"> • Evaluate bypasses of LD 4 and 5 to include in design |  | \$ | Start 2024-2028 |
| <ul style="list-style-type: none"> • Research native fish passage at LD 4 and 5 |  | \$ | Start 2024-2028 |
| <ul style="list-style-type: none"> • Continue to learn about permitting and approval requirements |  | | Continuous |
| <ul style="list-style-type: none"> • Scope deterrents at LD 2 and 8 as alternatives |  | \$ | Start 2029-2033 if needed |
| 2.4. Optimize flows through spillway gates to minimize invasive carp passage when gates are not fully out of the water. | | | |
| <ul style="list-style-type: none"> • Pursue additional research into modifying spillway operations |  | \$ | Start 2024-2028 |
| <ul style="list-style-type: none"> • Work with researchers and USACE to simulate LD5 spillway |  | \$ | Start 2024-2028 |
| <ul style="list-style-type: none"> • Work with USACE to consider feasibility of changing flow regimes |  | \$ | Start 2024-2028 |
| 2.5. Support research on new technologies and approaches to selectively deter upstream movement of invasive fish. | | | |

| Action | Requires partners | Requires new funding | Timeframe |
|--|--|----------------------|-----------------|
| <ul style="list-style-type: none"> Support research to improve selective deterrents |  | | Continuous |
| <ul style="list-style-type: none"> Scope feasibility of fish passage structures |  | | 2024-2025 |
| <ul style="list-style-type: none"> Work with partners to advance research and develop deterrents |  | \$ | Start 2024-2028 |
| 2.6. Investigate the possibility of a deterrent at Lock and Dam 15. | | | |
| <ul style="list-style-type: none"> Advocate and provide expertise for this effort | | | Start 2029-2033 |
| 2.7. Investigate native and invasive fish passage overlap at Lock and Dam 14 and 15, and other dams as available. | | | |
| <ul style="list-style-type: none"> Advocate and provide expertise for this work | | | Start 2024-2028 |
| <ul style="list-style-type: none"> Increase fish tagging and tracking to facilitate this work |  | \$ | Start 2024-2028 |
| 2.8. Increase knowledge of native aquatic communities including abundance, movement, and deterrent impacts. | | | |
| <ul style="list-style-type: none"> Identify impacts of invasive carp and deterrents on native species |  | | Continuous |
| <ul style="list-style-type: none"> Use native fish movement data to evaluate and inform use of deterrents | | | Continuous |
| 3.1. Support research and partnerships to prepare for responses. | | | |
| <ul style="list-style-type: none"> Develop new, or enhance existing, methods for capture and detection |  | | Continuous |

| Action | Requires partners | Requires new funding | Timeframe |
|---|--|----------------------|-----------------|
| <ul style="list-style-type: none"> Support research, for example eDNA enhancements |  | \$ | Continuous |
| 4.1. Increase contracted commercial fishing to remove invasive carp. | | | |
| <ul style="list-style-type: none"> Increase contracted commercial fishing | | | 2024-2025 |
| <ul style="list-style-type: none"> Support continued funding for contracted commercial fishing | | \$ | Continuous |
| <ul style="list-style-type: none"> Support continued funding for monitoring activities to support commercial fishing | | \$ | Continuous |
| <ul style="list-style-type: none"> Explore harvest incentives | | | Start 2024-2028 |
| <ul style="list-style-type: none"> Support commercial fishing industry capacity |  | \$ | Start 2024-2028 |
| 4.2. Support DNR-led removal of invasive carp. | | | |
| <ul style="list-style-type: none"> Use effective agency-led removal techniques |  | | Continuous |
| <ul style="list-style-type: none"> Use agency sampling to estimate abundance |  | \$ | Continuous |
| 4.3. Support and accelerate research on long-term control methods. | | | |
| <ul style="list-style-type: none"> Research priorities include species-specific attractants, invasive carp population dynamics, and genetic biocontrol |  | \$ | Continuous |
| <ul style="list-style-type: none"> Coordinate with researchers to support projects |  | | Continuous |
| 4.4. Explore options for responsible invasive carp disposal. | | | |

| Action | Requires partners | Requires new funding | Timeframe |
|--|--|----------------------|-----------------|
| <ul style="list-style-type: none"> Research alternatives and explore feasibility for disposing of invasive carp | | \$ | Start 2024-2028 |
| 4.5. Protect and enhance native ecosystems. | | | |
| <ul style="list-style-type: none"> Continue predator protection and habitat management | | | Continuous |
| <ul style="list-style-type: none"> Continue to gather data on native fish communities | | | Continuous |
| <ul style="list-style-type: none"> Consider fishery management changes | | | Start 2024-2028 |
| <ul style="list-style-type: none"> Conduct fish community analysis | | \$ | Start 2024-2028 |
| 5.1. Provide news releases, conduct media events, and provide access to information and experts to effectively communicate advances in prevention and management of invasive carp. | | | |
| <ul style="list-style-type: none"> Use news releases and other media to share information | | | Continuous |
| <ul style="list-style-type: none"> Provide opportunities for others to observe field activities |  | | Continuous |
| <ul style="list-style-type: none"> Maintain a list of subject matter experts | | | Continuous |
| <ul style="list-style-type: none"> Provide expert testimony | | | Continuous |
| 5.2. Maintain agency websites. | | | |
| <ul style="list-style-type: none"> Maintain DNR invasive carp web pages | | | Continuous |
| <ul style="list-style-type: none"> Link to partner organization website as appropriate |  | | Continuous |

| Action | Requires partners | Requires new funding | Timeframe |
|---|--|----------------------|-----------------|
| 5.3. Encourage public reporting of invasive carp captures and sightings. | | | |
| <ul style="list-style-type: none"> • Promote public awareness and outreach | | | Continuous |
| <ul style="list-style-type: none"> • Track and verify sightings as capacity allows | | | Continuous |
| 5.4. Increase outreach to prevent accidental introductions. | | | |
| <ul style="list-style-type: none"> • Increase public awareness to reduce risk of people spreading invasive carp |  | \$ | Start 2024-2028 |
| 5.5. Continue DNR participation in regional and national efforts. | | | |
| <ul style="list-style-type: none"> • Participate in regional and national groups | | | Continuous |
| <ul style="list-style-type: none"> • Work with partners on regulatory harmonization efforts |  | | Continuous |
| 5.6. Coordinate with researchers to stay up to date on invasive carp projects and to encourage research that is relevant to invasive carp prevention and management in Minnesota. | | | |
| <ul style="list-style-type: none"> • Identify research needs and considerations for management-ready results |  | | Continuous |
| 5.7. Work with partner agencies and other organizations and stakeholders to further the goals of this Action Plan. | | | |
| <ul style="list-style-type: none"> • Coordinate and collaborate with partners on implementation of actions |  | | Continuous |
| <ul style="list-style-type: none"> • Keep partners informed of DNR actions | | | Continuous |
| 5.8. Communicate the cost (long-term), risk, and time involved in developing solutions. | | | |

| Action | Requires partners | Requires new funding | Timeframe |
|---|--|----------------------|------------|
| <ul style="list-style-type: none"> • Work with experts to communicate the challenges associated with developing solutions to invasive carp |  | | Continuous |

ATTACHMENT G

Minnesota Wetlands Status and Trends Report **(2024)**

- Abstract Excerpt (G-1)
- Discussion Excerpt (G-2 to G-4)

Abstract

Wetlands provide essential functions for humans and wildlife, but wetland area can be lost through draining, filling, excavating, or drought. Following the loss of approximately half of Minnesota's historical wetland area, Minnesota's Wetland Conservation Act set the goal of no net loss of wetlands beginning in 1991. To track the state's adherence to this goal, the Minnesota Department of Natural Resources established the Wetlands Status and Trends Monitoring Program beginning in 2006. Here, we report the changes in wetland and deepwater area between 2006 and 2020 using aerial photography of 3750 plots placed randomly throughout the state and revisited every three years. Over this time, Minnesota experienced a net gain of 43,389 acres of wetland and deepwater, with the greatest gains occurring recently (2015-2020). Most of the area gained and lost was in emergent wetlands and the greatest source of wetland and deepwater area was agricultural land. Over 100,000 acres of forested wetland transitioned to emergent or scrub-shrub wetland, ~19% of which is projected to return to forested wetland. Direct drivers of wetland change explained 39%-82% of wetland gains and 88%-100% of wetland losses while indirect drivers explained the remainder. Wetland gains due to direct drivers are associated with greater precipitation. Minnesota is achieving its goal of no net loss of wetland quantity. Yet, some wetland functions that may be lost with declines in wetland classes, such as forested wetlands, may not be replaced completely through gains in wetland area.

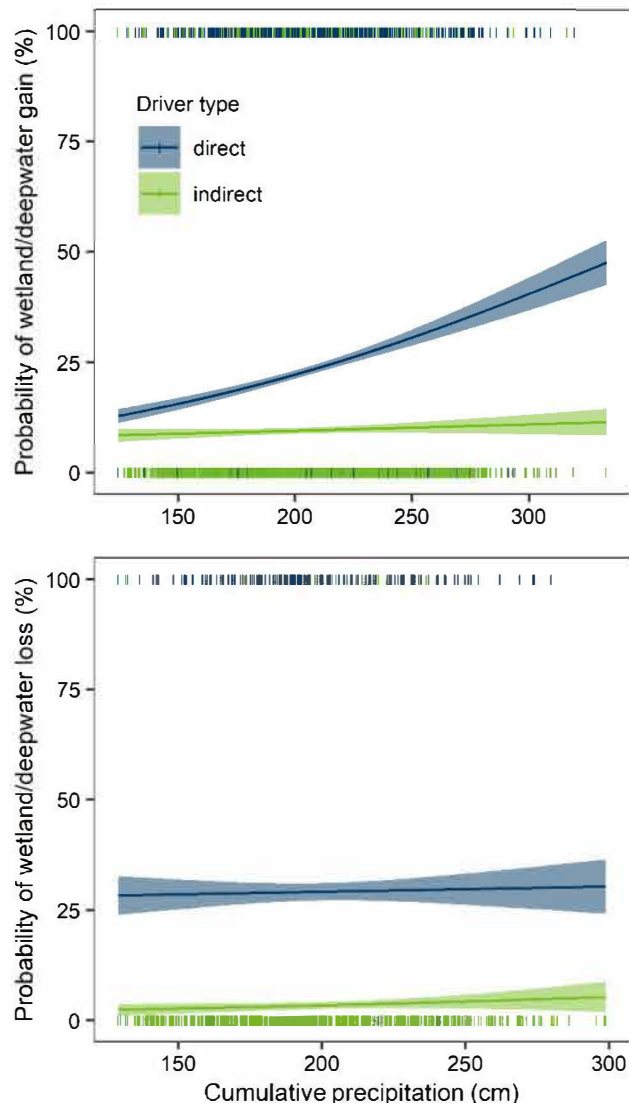


A poor fen (at type of emergent wetland) in Chippewa National Forest. Photograph by A. Kendig.

Precipitation

The probability of wetland/deepwater gaining area from direct drivers increased from 13% to 48% across the range of cumulative precipitation (Fig. 9, Table S12). However, the probability of gain from indirect drivers only increased from 9% to 12%. The probability of wetland/deepwater losing area was not significantly related to precipitation (Table S13). The probability of loss increased from 28% to 30% due to direct drivers and 2% to 5% due to indirect drivers across the precipitation gradient (Fig. 9).

Figure 9: The probability of wetland/deepwater gain (top panel) and loss (bottom panel) across a gradient of cumulative precipitation (since the previous monitoring cycle). Lines and shading indicate mean \pm SE from binomial mixed effects models with plot as a random intercept (Tables S12-S13). Vertical lines at zero and one indicate observed wetland/deepwater gains or losses.



Discussion

Wetlands in Minnesota and across the globe are vital habitats for biodiversity and ecosystem functions (Keddy et al. 2009). Through a long-term monitoring program, we have estimated the wetland area in Minnesota and the change in wetland and deepwater area over time. Despite many pressures on wetlands, Minnesota has had a decline in wetland losses and a net gain in wetland area over the past 15 years. Gains were observed across all four ecological provinces and primarily occurred between the most recent monitoring cycles due to direct drivers. Precipitation increased wetland gains, especially those associated with direct drivers.

Most of the gains in Minnesota's wetland area were in emergent and unconsolidated bottom wetlands. In other wetland categorization schemes (Shaw and Fredine 1956, MN DNR 2003, Eggers and Reed 2015), multiple wetland types fall into our definition of emergent wetland, including deep marshes, shallow marshes, seasonally flooded basins, wet meadows, wet prairies, rich and poor fens, calcareous fens, and some open bogs. This diverse group of wetlands can serve as critical habitat for threatened and endangered species (MN DNR 2022a), support a disproportionately high percentage of waterfowl (Batt et al. 1989), and store substantial carbon pools (Weishampel et al. 2009, Chaudhary et al. 2020). Unconsolidated bottom wetlands may include "Type 5 – inland open fresh water" wetlands (Shaw and Fredine 1956) or may not be considered wetlands due to low vegetation

cover (Eggers and Reed 2015). Most wetland gains in these categories came from agricultural land, suggesting active restoration or passive wetland creation through abandonment. For further discussion of gains in unconsolidated bottom wetlands, see Kloiber and Norris (2017).

There were ~4.2 million acres of forested wetland in Minnesota during the first monitoring cycle, and ~127,500 acres, or 3%, transitioned to emergent or scrub-shrub wetland by the final monitoring cycle. For forested wetland area that transitioned between the first and second monitoring cycles, 19% returned to forested wetland by the final monitoring cycle. Loss of forested wetland is not isolated to Minnesota. Approximately 8% of forested wetlands were lost from North America's Coastal Plain over ten years and from the Great Lakes basin over four decades, with large transitions to emergent and scrub-shrub wetlands (White et al. 2022, Amani et al. 2022). These transitions are likely associated with resource extraction, flooding, development, and forest pests (Johnston 1989, van Asselen et al. 2013, MN DNR 2022b). Tree loss from wetlands can impact hydroperiod, canopy cover, and litter quantity and quality, with consequences for plants and animals (Youngquist et al. 2017, Grinde et al. 2022). Because WSTMP data are collected during spring leaf-off, it is difficult to identify newly standing dead trees. Therefore, loss of forested wetlands in our analysis either represent tree removal or long-term standing dead trees. Wetland quality in Minnesota is primarily driven by spatially-variable factors, with higher quality in the LMF province relative to the rest of the state (Bourdagh et al. 2019). Most of the forested wetlands are in the LMF and the most common wetland type in the LMF is forested wetlands. Therefore, continued loss of forested wetlands could impact LMF wetland quality.

Wetland/deepwater gains in three of four monitoring cycles were primarily caused by direct, observable drivers. Further, cumulative precipitation between monitoring cycles helped explain wetland/deepwater gains associated with direct drivers. It is possible that increased precipitation led to adaptive changes in infrastructure and land management practices that in turn increased wetland/deepwater area. Interestingly, wetland losses due to direct drivers did not show an opposite relationship, although the sample size for wetland losses was smaller than that for gains. Wetland gains and losses associated with indirect drivers were not strongly related to cumulative precipitation. This may be because precipitation affects transitions among wetland/deepwater classes (e.g., emergent, aquatic bed, unconsolidated bottom, and deepwater), rather than between wetland and non-wetland, without direct drivers.

Our results may be influenced by imagery substitutions made due to the Covid-19 pandemic restrictions on flying in spring 2020. Imagery acquired from external sources was used to quantify 5,889 acres gained and 364 acres lost statewide. Imagery we acquired in the fall was used to quantify 384 acres gained and 13.6 acres lost statewide. Wetland water levels generally peak during seasons with high precipitation or snow melt and decline during seasons with drought (van der Valk 2005). Therefore, changes detected in imagery collected from different times of the year may reflect within-year seasonal fluctuations. Because WSTMP is ongoing, we will be able to assess whether changes detected with alternative imagery persist when the same plots are monitored again in 2023.

In 2019, the Minnesota Department of Natural Resources completed an update of the state's National Wetland Inventory (NWI) (Kloiber et al. 2019). This effort mapped all wetland and deepwater within the state that were larger than ½ acre or, for long, narrow features, wider than 15 ft. Based on the NWI, the estimated statewide wetland area is 12.2 million acres and the statewide deepwater area is 2 million acres. The NWI wetland

estimate is ~1.6 million acres greater than the WSTMP estimate (and ~1.3 million acres greater than the upper 95% CI) and the deepwater estimate is ~400,000 acres less than the WSTMP estimate (and ~250,000 acres less than the lower 95% CI). A few factors may explain these discrepancies. First, the NWI was produced by a different group of technical experts using different source data than the WSTMP. Second, the NWI had more inclusive criteria for wetlands than WSTMP. For example, a 2 ft deeper threshold was required in NWI for a waterbody to be deepwater rather than wetland, there was a smaller minimum surface area threshold for delineating wetlands, and uncertainty about depth within lakes, where littoral zones were categorized as wetland and limnetic as deepwater, was addressed by assuming more littoral area. Ongoing work by the MN DNR aims to refine the delineation of wetland and lake features. Although WSTMP is a random sample of the state, and may therefore omit small, isolated wetlands, the estimated statewide wetland area using NWI within WSTMP plots is 12.2 million acres, suggesting that WSTMP plots are not omitting wetlands. Because of methodological differences between NWI and WSTMP, we encourage users to consider which set of assumptions best meets their purposes, with the understanding that NWI's estimate for statewide wetland area may be an overestimate and WSTMP's estimate may be an underestimate.

Minnesota had a net gain in wetland area between 2006 and 2020 and for every pair of consecutive monitoring cycles of this program, with the greatest gains in the most recent consecutive cycles (2015-2020). Further, the most recent consecutive cycles had the smallest wetland losses observed so far. Therefore, Minnesota is meeting the WCA goal of no net loss of wetland quantity over this time period. Wetland quality and biodiversity are central to the functions and values of wetlands as well as to WCA goals. The Minnesota Pollution Control Agency's wetland quality monitoring programs have detected relatively stable wetland quality over 2-3 monitoring cycles (Bourdagh et al. 2019, Genet et al. 2019), which may be supporting wetland functions in areas of the state with higher quality wetlands. Yet, as wetlands transition between different classes, which is not reflected in overall quantities of wetland losses or gains, functions may be lost. Integrating functional indices, such as those being developed with the Wisconsin-Minnesota Wetland Functional Assessment Initiative (BWSR 2022), with the quantitative data presented here, may help characterize nuances in Minnesota's progress towards the goal of no net loss of wetland quantity, quality, and biological diversity.



Vegetation in a fen (an emergent wetland) at Lake Maria State Park. Photograph by A. Kendig.

ATTACHMENT H

Hypoxia Task Force Report to Congress (2024)

- Executive Summary Excerpt (*H-1 to H-2*)
- Lessons Learned Excerpt (*H-3 to H-6*)

Executive Summary

The Harmful Algal Blooms and Hypoxia Research and Control Amendments Act of 2014 (HABHRCA) directs the U.S. Environmental Protection Agency (EPA) Administrator, through the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force (Hypoxia Task Force or HTF), to submit a progress report to the appropriate congressional committees and the President beginning no later than 12 months after the law's enactment, and biennially thereafter.

This 2023 fourth *Report to Congress* describes progress made toward the goals of the *Gulf Hypoxia Action Plan 2008* (Action Plan; USEPA 2008) through activities directed by or coordinated with the HTF and carried out or funded by EPA and other HTF members. This report provides updates since the [2019/2021 Report to Congress](#), including federal and state actions and newly published science advancements.

This report is organized consistent with the structure of HABHRCA section 604(b):

- The HTF and an Assessment of Progress Made Toward Nutrient Load Reductions (Part 1)
- The Response of the Hypoxic Zone and Water Quality Throughout the Mississippi/Atchafalaya River Basin (MARB) (Part 2)
- The Economic and Social Effects of the Hypoxic Zone (Part 3)
- Lessons Learned (Part 4)
- Recommended Appropriate Actions to Continue to Implement or, if Necessary, Revise the Strategy Set Forth in the *Gulf Hypoxia Action Plan 2008* (Part 5)

The HTF, its partners, and the scientific community have advanced the understanding of the hypoxic zone and many of the upstream, land-based factors that contribute to its annual formation. This report includes a summary of the current scientific understanding of projected climate change impacts on the Gulf of Mexico (Gulf), the status of the hypoxic zone in the Northern Gulf, and the delivery of nutrients to the Gulf from the MARB. HTF members continue to advance the scientific understanding of key topics including nutrient load quantification; nutrient source, fate, and transport in the MARB and to the Gulf; the resource response of the hypoxic zone and water quality throughout the MARB; and the economic and social effects of excess nutrients.

The HTF remains committed to its 2035 goal of reducing the 5-year average areal extent of the hypoxic zone in the Gulf to less than 5,000 square kilometers by 2035, with an interim target for reducing total nitrogen (TN) and total phosphorus (TP) loads by 20 percent by the year 2025. The [2019/2021 Report to Congress](#) noted that recent science confirms that strategies to reduce both nitrogen and phosphorus by 48 percent are needed to meet the HTF's 2035 goal; that finding is reiterated in Section 4.2 of this Report. Progress to date on reducing nitrogen loads has been strong: the Task Force has met its 2025 interim target to reduce total nitrogen loads by 20 percent. However, total phosphorus loads have increased. More work is needed to reduce nitrogen and phosphorus by 48 percent to meet the HTF's 2035 goal.

The Infrastructure Investment and Jobs Act (IIJA), Public Law 117-58, also referred to as the Bipartisan Infrastructure Law, provides a critical investment in strategies to improve water quality in the MARB and the Gulf and reduce the northern Gulf hypoxic zone. The IIJA includes \$12 million per year during federal

Fiscal Years (FY) 22–26 (\$60 million in total) for EPA to support implementation of the Action Plan. These funds provide equal support to the 12 HTF member states for development and implementation of their nutrient reduction strategies, with funding supporting the tribes with land in the 12 HTF state area of the MARB and other Action Plan partners. With the IIJA, all HTF states have the opportunity to upgrade their municipal wastewater treatment infrastructure with billions in additional investment through the CWA State Revolving Loan funds; some HTF states have also used support from EPA under the American Recovery and Reinvestment to upgrade municipal wastewater treatment plants. The Inflation Reduction Act (IRA), Public Law 117-169, provides for significant investment in nutrient reduction activities on private lands, with \$19.5 billion nationally for U.S. Department of Agriculture (USDA) Natural Resources Conservation Service to support climate-smart agriculture, including improving nutrient management opportunities. With this funding, USDA will target lands in need of conservation treatment, increase program flexibilities, launch a new outreach campaign, and expand partnerships to develop and improve nutrient management plans; in the MARB these funds will support Action Plan goals.

Accelerated implementation of nutrient reduction strategies throughout the MARB continues to be the HTF's primary path forward. In addition to the IIJA and IRA funding noted above, the work of the HTF is supported by technical and financial support from federal HTF members, including support through Farm Bill Conservation Programs, the Clean Water Act, the Water Resources Development Act, and other authorities and programs, with active participation by private sector, nongovernmental, and other partners and stakeholders. The HTF engages a wide range of partners in the public and private sectors. As states and tribes implement their nutrient reduction strategies, they work with diverse groups including universities, agricultural associations, business councils, conservation organizations, municipalities, wastewater utilities, nonprofits, and private foundations.

The HTF continues to identify the highest priority nutrient source areas for conservation treatment using tools to target priority watersheds, inventory existing conservation practices, and estimate nutrient load reduction to help target scarce resources. The HTF is working to communicate successes to producers and their networks of trusted advisors to further build support for conservation investments. The HTF is sharing [stories of success](#) and acknowledging remaining challenges with the public. Better communication and engagement with the public is essential to sustaining and expanding the HTF's work.

This Report to Congress is one important tool for describing the HTF's progress toward reducing nutrient loads to the northern Gulf, amplifying state summaries of progress, sharing lessons learned in implementing nutrient reduction strategies, and adaptively managing strategies for improving water quality in the Gulf.

Part 4. Lessons Learned

4.1 Benefits of the IJA and Inflation Reduction Act

The IJA's investment in clean water is nothing short of transformational and includes approximately \$50 billion for EPA to invest in water infrastructure and support programs across the nation, the single largest investment in clean water that the federal government has ever made. Specifically, the IJA includes an unprecedented \$12 million per year for five years (\$60 million in total) that EPA is investing in state and tribal strategies to meet the goals of the Action Plan and build their capacity to scale up conservation implementation. EPA is posting all relevant materials on the [GHP webpage](#). The Inflation Reduction Act (IRA) will deliver \$19.5 billion nationally in new conservation funding to support climate-smart agriculture, including for NRCS to improve opportunities for nutrient management.

4.2 The Critical Role of Partnerships

Since the HTF adopted its first Action Plan in 2001, the HTF has engaged a full range of public and private sector partners. States are implementing their nutrient reduction strategies by working with universities, agricultural associations, business councils, conservation organizations, municipalities, wastewater utilities, nonprofits, private companies, and private foundations. The scope of the HTF's 2035 goal and 2025 interim target requires this wide array of partners; as noted in Part 1 of this report, reducing the nutrient load delivered to the northern Gulf every year is an extraordinary challenge, requiring conservation on millions of acres across nearly half the United States. Recent science confirms that meeting the HTF's 2035 goal for reducing the size of the Gulf hypoxic zone will require nitrogen and phosphorus reductions of about 48 percent (Fennel and Laurent 2018). The scope and scale of this challenge is driving new collaboration among states, tribes, federal partners, and stakeholders to widen the circle of engagement, accelerate innovation, and amplify efforts to achieve the results needed. Further expansion of partnerships is necessary to support the many needs to meet the HTF's goal.

Implementation requires partners that can provide planning, engineering, technical assistance, funding, and on-the ground services. Partners are needed who can help scale up soil and water conservation efforts, by fully integrating needed water quality results into activities across urban, suburban, industrial, and rural landscapes. Examples of these key partnerships and partner organizations include:

- Illinois Department of Agriculture–NRCS partnership: This partnership delivers over \$13.3 million in new funding to support conservation planning and Illinois Nutrient Loss Reduction Strategy staffing and programming.
- Ohio–USDA partnership: ODA and Department of Natural Resources and USDA support a Scioto River Watershed as part of the Conservation Reserve Enhancement Program to reduce sediment and nutrient loads and improve water quality and wildlife habitat.
- USDA and EPA continue to partner on watershed-scale implementation of agricultural conservation practices for nutrient reduction and enhanced conservation planning in all NWQI watersheds.

- The USGS and the USACE Rock Island District, in partnership with the Upper Mississippi River Basin Association and others, released a report regarding the ecological status and trends of the Upper Mississippi and Illinois Rivers (Houser et al. 2022). The report is the third of its kind produced as part of the UMRR program and includes information on long-term changes in water quality, aquatic vegetation, and fish from six study areas across the Upper Mississippi and Illinois Rivers.
- In 2021, the Agricultural Nutrient Policy Council released a document, [*American Agriculture's State, Regional, and National Initiatives to Reduce Nutrient Losses in the Mississippi River Basin*](#), that describes how farmers and agribusinesses have helped states implement their nutrient loss reduction strategies.
- Nongovernmental organizations continue to make key investments in conservation. As just one example among many, in Iowa the Nature Conservancy and a broad coalition of partners are implementing the [*Iowa "4R Plus" program*](#).

4.3 The Importance of Incorporating Scientific Advancements and New Findings into Nutrient Strategies

The HTF, its partners, and the scientific community have made tremendous strides in characterizing the hypoxic zone and many of the upstream, land-based factors that contribute to its annual formation. Research on the scope and scale of efforts for achieving the necessary nutrient reductions has been impressive, and the findings provide insight into expanding conservation implementation (Sharpley et al. 2019; Fennel and Laurent 2018; CAST 2019).

Because much of the nutrient load in the northern Gulf originates on agricultural land, research into the application, fate, and transport of fertilizer applied to Midwestern lands is critical. Researchers have found that “managing agricultural nutrients to achieve water quality goals involves complexities best organized around source and transport processes,” because once nutrients are applied, “management outcomes are influenced by several factors across many scales, most uncontrollable, which must be considered when transferring science into policy” (Sharpley et al. 2019). Attempts to intercept, treat, or otherwise address nutrients after they are mobilized on the landscape are complex, difficult, and often costly. More effectively planning and calibrating nutrient applications provides the opportunity to improve both a producer’s return on investment and water quality. For example, the Fertilizer Institute, The Nature Conservancy, and state partners promote optimized on-farm nutrient management using the 4Rs (NIMSS 2023).

This educational approach highlights the key decision points in crop nutrient application, from selecting crop-specific blends of nitrogen and phosphorus to ensuring efficient uptake by plants. It also guards against practices that might lead to excessive fertilizer runoff, like applying fertilizer on frozen or wet ground before a storm. Illinois’ Keep it 4R Crop program is a partnership with the Illinois Fertilizer and Chemical Association who works closely with stakeholders and promote education and adoption of fertilizer management processes. Nutrient management is challenging to scale up (Osmond et al. 2012), and this communication strategy is reaching many nutrient application decision makers.

Other states are also utilizing the best available science in updating and implementing their nutrient reduction strategies and identifying and prioritizing key areas for BMP implementation. For example, Indiana is using the latest science to improve the accuracy of nutrient load and concentration estimates and reductions from BMPs. This improved accuracy helps to direct their efforts for further nutrient reductions. Arkansas and Kentucky both have an updated NRS that incorporates 30 years of data to identify priority areas for targeted nutrient reduction, which will allow for optimized resource use. Many states are also using models such as [STEPL and the Pollutant Load Estimation Tool \(PLET\)](#) to estimate the impacts of BMPs on nutrient reduction, helping to increase understanding of the effects that BMPs have on overall nutrient reduction goals.

To better address the complexities of nutrient management, NRCS recently highlighted *SMART* nutrient management planning which includes the 4Rs of nutrient stewardship (right source, right method, right rate, and right timing) *and* emphasizes smart activities to reduce nutrient loss by adding *assessment* of comprehensive, site-specific conditions, recognizing that nutrient needs—as well as risks for nutrient losses—vary even within a field. Additionally, as part of its effort to increase use of nutrient management practices, NRCS has also recently [signed two Memorandums of Understanding \(MOUs\)](#) that further its conservation efforts targeted at improving nutrient management through the NRCS Technical Service Provider Program. These MOUs with American Society of Agronomy (ASA) and its International Certified Crop Adviser (ICCA) Program and with ag-retailer Truterra LLC, a Land O’Lakes company, will enable NRCS to leverage partnerships to expand capacity and reach new producers with technical and financial assistance.

Data collection and application at the local level is a critical component of integrating new science into nutrient strategies. For example, Indiana is utilizing field-specific data in its Infield Advantage program to optimize management practices. This ensures that the best possible practices are being utilized in each field within the program, optimizing nutrient reductions. Kentucky’s updated NRS has been tailored to the state’s unique geologic, agricultural, and hydrologic landscape to optimize load reductions.

The HTF NPS Workgroup developed a list of key conservation practices, by working with SERA-46 and the Walton Family Foundation. The HTF NPS Workgroup is identifying, inventorying, and analyzing these practices to derive nutrient loss estimates using a Conservation Tracking Framework (Christianson 2019). The framework can be used across HTF states to ensure centralized, consistent, and accessible data sources for assessing progress. This framework can also be used to support each state as it implements its individual nutrient strategies and help ensure agricultural conservation practices adopted across the MARB are accurately and consistently reported.

Finally, as noted previously in this report, the collective impacts from climate change on the hypoxic zone and nutrient loads (from contemporary and legacy sources) from the MARB may make the achievement of HTF goals more complex. Many studies suggest that current management actions need to be adapted to meet reduction goals for nutrient loading and the size of the hypoxic zone (Donner and Scavia 2007; Zhang et al. 2022) climate considerations in nutrient loss reduction strategies. However, more information about the extent and scale of management actions required to offset the effects of climate change is needed to support the decision-making process. Management responses for reducing risks should consider robust strategies and practices capable of addressing a range of potential future conditions to ensure that HTF goals can be met (Paul et al. 2019).

4.4 The Significance of Place-Based Nutrient Reduction Strategies

While many sources contribute to excess nutrients in the MARB, much of the nutrient load in MARB waterways and the Gulf come from nonpoint sources, a majority of which are from agricultural losses (Robertson and Saad 2019, 2021; White et al. 2014). During the 20-plus year history of the HTF, the federal policy and legal and regulatory framework for managing NPS pollution has remained largely unchanged, relying on state strategies and programs; federal financial and technical assistance and investments in science; and some efforts to encourage market-based approaches, including trading between regulated point sources and unregulated nonpoint sources. This framework, which encompasses more than two decades of research, multiple conservation developments and implementation, wastewater treatment improvements, nutrient management innovation, and partnership building by the HTF and many others, shows that there is no one-size-fits-all approach to reducing excess nutrients. State nutrient reduction strategies—with each state using a combination of regulatory programs, financial and technical assistance, and community-based and innovative approaches that works best for that state, its partners, and its stakeholders, and supported by federal partners—continue to be the cornerstone of the HTF’s strategic work. Still, while recognizing the need for flexibility and adaptability, there are common themes that emerge from these state-led efforts and inform the HTF’s future directions. These include:

- Identifying and targeting the highest priority nutrient source areas for conservation treatment are necessary to make the most progress. Data-driven tools (e.g., remote sensing and analysis, modeling) that identify priority nutrient source areas, inventory existing conservation practices, and estimate the relative potential for nutrient load reduction can help target scarce resources.
- Nutrient management—controlling nitrogen and phosphorus at the source—can provide a strong return on conservation investments and reduce costs for producers, providing an economic incentive for progress. Yet, in many areas achieving nutrient reduction at the scale needed to meet the HTF’s 2035 goal and local water quality objectives will require the use of additional elements of a comprehensive conservation system to also control and trap excess nutrients.
- Given the work needed, the HTF should more fully consider opportunities to expand the use of innovative financing approaches, including market-based and “pay for performance” approaches to broaden the circle of partners who invest in reducing excess nutrients in the MARB.
- Communicating examples of success to producers and their networks of trusted advisors is critical for progress. Highlighting stories of success and of remaining challenges to the public at large is also essential to sustaining and expanding the HTF’s work.

ATTACHMENT I

Additional Items

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

QUARTERLY MEETINGS FUTURE MEETING SCHEDULE

| MAY 2024 | |
|--------------------|---|
| <u>Quad Cities</u> | |
| May 21 | UMRBA Quarterly Meeting |
| May 22 | UMRR Coordinating Committee Quarterly Meeting |

| AUGUST 2024 | |
|-----------------|---|
| <u>St. Paul</u> | |
| August 6 | UMRBA Quarterly Meeting |
| August 7 | UMRR Coordinating Committee Quarterly Meeting |

Acronyms Frequently Used on the Upper Mississippi River System

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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 |