August 10, 2021

Upper Mississippi River Basin Association

159th Quarterly Meeting

Agenda
with
Background
and
Supporting
Materials

Virtual Meeting

Upper Mississippi River Basin Association

August 10, 2021

Agenda

Connection Information:

- Web and video conferencing: https://umrba.my.webex.com/umrba.my/j.php?MTID=m80873bc34cbd3334f5ae52a130576c6a
- Phone connection:
  - Dial-in: 312-535-8110
    [Note: In the event that the call line provided is experiencing a high volume of calls, you may also connect by dialing 469-210-7159.]
  - Access code: 182 850 9807
  - Password: 1234

Time	Attachment	Topic	Presenter
8:00 a.m.		**Call to Order and Introductions**	***Dru Buntin**, Missouri DNR*
8:05	**A1-20**	**Approval of Minutes of May 25, 2021 Meeting**	
8:10	**B1-21**	**Executive Director's Report**	***Kirsten Wallace**, UMRBA*
8:20		**UMRBA Resilience Planning**	***UMRBA Board Members***
8:40		**Northern Midwest Drought**	
	C1	▪ Conditions and Impact Assessment	***Molly Woloszyn**, NIDIS*
		▪ State Planning and Response Efforts	
		– Minnesota 2021 Drought Mitigation and Response	***Katie Smith**, Minnesota DNR*
		– Iowa 2021 Drought Mitigation and Response	***Tim Hall**, Iowa DNR*
	C2-3	– Starved Rock HAB Occurrence	***Gregg Good**, Illinois EPA*
		– Missouri Drought Mitigation Planning	***Matthew Kirsch**, Missouri DNR*
	C4-9	– Central Sands Lakes Study	***Aaron Pruitt**, Wisconsin DNR*
	C10-18	▪ NIDIS Tribal Drought Engagement Strategy	***Molly Woloszyn**, NIDIS*
	C19-22	▪ Drought Impacts on Arsenic in Private Wells	***Melissa Lombard**, USGS*
		▪ Drought Prediction Project	
10:15		**Break**	
10:30	**D1**	**Minnesota River Water Storage**	***Rita Weaver,** Minnesota BWSR*
10:50		**Navigation and Ecosystem Sustainability Program**	
		▪ FY 2021 Status Report	***Andrew Goodall**, USACE*
		▪ Water Level Management Recommendations	***Lauren Salvato**, UMRBA and **Aaron McFarlane**, USACE*
	E1-8	▪ Forest Conditions and Restoration Opportunities	***Andy Meier**, USACE*
12:00 noon		**Lunch**	

(Continued)

UMRBA Quarterly Meeting (Continued)
August 10, 2021

Time	Attachment	Topic	Presenter
1:00 p.m.		**Navigation Channel Conditions and Maintenance Activities**	***Steve Tapp, Jon Klingman, and Lance Engle****, USACE*
1:30	**F1-44**	**UMRS Federal Fiscal and Policy Matters** ▪ FY 2022 Outlook (Budget, Appropriations) ▪ Climate and Land Conservation Directives ▪ Racial Equity	***UMRBA Federal Liaisons***
2:15	**G1**	**Administrative Issues** ▪ Future Meeting Schedule	
2:30 p.m.		**Adjourn**	

(See Attachment G for frequently used acronyms.)

ATTACHMENT A

Minutes of the May 25, 2021 UMRBA Quarterly Meeting

(A-1 to A-20)

DRAFT

Minutes of the 158th Quarterly Meeting of the Upper Mississippi River Basin Association

May 25, 2021
Web-Based Conference Meeting

Dru Buntin called the meeting to order at 8:04 a.m. Participants were as follows:

UMRBA Representatives and Alternates:

Rick Pohlman	Illinois Department of Natural Resources
Chad Craycraft	Illinois Department of Natural Resources
Dave Glover	Illinois Department of Natural Resources
Loren Wobig	Illinois Department of Natural Resources
Tim Hall	Iowa Department of Natural Resources
Jake Hansen	Iowa Department of Agriculture and Land Stewardship
Rita Grimm	Iowa Economic Development Authority
Barb Naramore	Minnesota Department of Natural Resources
Katrina Kessler	Minnesota Pollution Control Agency
Dru Buntin	Missouri Department of Natural Resource
Chris Wieberg	Missouri Department of Natural Resource
Jennifer Hoggatt	Missouri Department of Natural Resource
Chris Klenklen	Missouri Department of Agriculture
Matt Vitello	Missouri Department of Conservation
Steve Galarneau	Wisconsin Department of Natural Resources
Jim Fischer	Wisconsin Department of Natural Resources

Federal UMRBA Liaisons:

MG Diana Holland	U.S. Army Corps of Engineers, MVD
Brian Chewning	U.S. Army Corps of Engineers, MVD
Ken Westlake	U.S. Environmental Protection Agency, Region 5
Sabrina Chandler	U.S. Fish and Wildlife Service, UMR Refuges
Scott Morlock	U.S. Geological Survey, Midcontinent Region
Verlon Barnes	Natural Resources Conservation Services

Others in Attendance:

BJ Murray	Illinois Department of Transportation
Randy Schultz	Iowa Department of Natural Resources
Benjamin Larson	Minnesota Department of Natural Resources
Megan Moore	Minnesota Department of Natural Resources
Brian Stenquist	Minnesota Department of Natural Resources
Carli Wagner	Minnesota Department of Natural Resources
Heidi Wolf	Minnesota Department of Natural Resources

Patrick Phenow	Minnesota Department of Transportation
Bryan Hopkins	Missouri Department of Natural Resources
Mike Halstad	Wisconsin Department of Transportation
Jim Cole	U.S. Army Corps of Engineers, MVD
Leanne Riggs	U.S. Army Corps of Engineers, MVD
Ben Robinson	U.S. Army Corps of Engineers, MVD
Thatch Shepard	U.S. Army Corps of Engineers, MVD
Chuck Camillo	U.S. Army Corps of Engineers, MVD
James Lewis	U.S. Army Corps of Engineers, MVD
Jim Bodron	U.S. Army Corps of Engineers, MVD
Kevin Wilson	U.S. Army Corps of Engineers, MVP
Angela Deen	U.S. Army Corps of Engineers, MVP
Maria DeLaundreau	U.S. Army Corps of Engineers, MVP
Steve Tapp	U.S. Army Corps of Engineers, MVP
Chris Erickson	U.S. Army Corps of Engineers, MVP
Jon Hendrickson	U.S. Army Corps of Engineers, MVP
Col. Steve Sattinger	U.S. Army Corps of Engineers, MVR
Kim Thomas	U.S. Army Corps of Engineers, MVR
Roger Perk	U.S. Army Corps of Engineers, MVR
Jodi Creswell	U.S. Army Corps of Engineers, MVR
Andrew Goodall	U.S. Army Corps of Engineers, MVR
Karen Hagerty	U.S. Army Corps of Engineers, MVR
Davi Michl	U.S. Army Corps of Engineers, MVR
Scott Whitney	U.S. Army Corps of Engineers, MVR
Marshall Plumley	U.S. Army Corps of Engineers, MVR
Chuck Theiling	U.S. Army Corps of Engineers, MVR
Mark Cornish	U.S. Army Corps of Engineers, MVR
Rachel Hawes	U.S. Army Corps of Engineers, MVR
Michael Feldmann	U.S. Army Corps of Engineers, MVS
Jasen Brown	U.S. Army Corps of Engineers, MVS
Hal Graef	U.S. Army Corps of Engineers, MVS
Brian Markert	U.S. Army Corps of Engineers, MVS
Shawn Sullivan	U.S. Army Corps of Engineers, MVS
David Crane	U.S. Army Corps of Engineers, NWO
Michael Izard-Carroll	U.S. Army Corps of Engineers, NWO
Kayla Eckert Uptmore	U.S. Army Corps of Engineers, NWO
Mike Glasch	U.S. Army Corps of Engineers, NWO
Corina Zhang	U.S. Army Corps of Engineers, NWO
Brian Johnson	U.S. Army Corps of Engineers, Regional Planning Division North
Jason Daniels	U.S. Environmental Protection Agency, Region 7
Amy Shields	U.S. Environmental Protection Agency, Region 7
Chris Hamilton	U.S. Department of Agriculture, NRCS Missouri
Neal Jackson	U.S. Fish and Wildlife Service, UMRCC
Kraig McPeek	U.S. Fish and Wildlife Service, Illinois-Iowa Ecological Services
Sara Schmuecker	U.S. Fish and Wildlife Service, Illinois-Iowa Ecological Services
Matt Mangan	U.S. Fish and Wildlife Service, Illinois Ecological Services
Tim Yager	U.S. Fish and Wildlife Service, Winona
Jim Duncker	U.S. Geological Survey, Central Midwest Water Science Center
JC Nelson	U.S. Geological Survey, Midcontinent Region

Mark Gaikowski	U.S. Geological Survey, UMESC
Kristen Bouska	U.S. Geological Survey, UMESC
Jennie Sauer	U.S. Geological Survey, UMESC
Ted Stets	U.S. Geological Survey, Water Resources Mission Area
Steve Buan	National Oceanic and Atmospheric Administration, NWS
Mike Welvaert	National Oceanic and Atmospheric Administration, NWS
Olivia Dorothy	American Rivers
Nancy Guyton	Neighbors of the Mississippi
Kim Schneider	*Our Mississippi*
Rick Stoff	*Our Mississippi*
Gretchen Benjamin	The Nature Conservancy
Jason Beverlin	The Nature Conservancy
Barbara Charry	The Nature Conservancy
Doug Blodgett	The Nature Conservancy
Jason Beverlin	The Nature Conservancy
Rachel Curry	University of Illinois
Jim Lamer	University of Illinois, Illinois Natural History Survey
Marian Muste	University of Iowa
Brent Hoerr	Upper Mississippi, Illinois, and Missouri Rivers Association/Missouri Corn Growers Association
Mike Klingner	Upper Mississippi, Illinois, and Missouri Rivers Association
John Winkelman	Des Moines Levee District
Jim Koeller	Illinois Farm Bureau
Alayna Chuney	National Caucus of Environmental Legislators
Regan Griffin	Atchison County Levee District
Robert Matya	HDR, Inc.
Edward Brauer	Unaffiliated Stakeholder
Sadie Neuman	Unaffiliated Stakeholder
Kirsten Wallace	Upper Mississippi River Basin Association
Mark Ellis	Upper Mississippi River Basin Association
Lauren Salvato	Upper Mississippi River Basin Association
Andrew Stephenson	Upper Mississippi River Basin Association

Minutes

Loren Wobig moved and Steve Galarneau seconded a motion to approve the draft minutes of the February 23, 2021 UMRBA quarterly 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 other work load efforts since the February 2021 quarterly meeting. On April 27, 2021, UMRBA launched a new web presence. The primary goal was to create a more accessible, useful resource for you to find information on the river, the ongoing and historic programs and projects, and UMRBA's current events and upcoming meetings. Staff will continue to expand website content, particularly with information about the river ecosystem, economy, and people who live along the river, and work to improve it. Wallace expressed appreciation to DJ Case for developing the website structure and to partners for their input in the initial stages of the website's development.

Of particular note is May 7, 2021 UMRBA comment letter regarding the Corps' implementation guidance for provisions in the Water Resources Development Act of 2020. In the letter, UMRBA offered the following requests of the Administration:

- Place a higher priority on financing NESP
- Resolve liability issues associated in the project partnership agreements
- Convene a representative team of interdisciplinary and interagency experts from the Upper Mississippi River and other regions across the country
- Employ a Section 729 planning process to enhance floodplain resilience related to floods, droughts, and sediment with UMRBA as the cost-share sponsor

Wallace said UMRBA and the Corps hosted a water level management workshop over a series of days in mid-May 2021 using the structured decision-making facilitation method to clarify ecological objectives for employing water level management as a management tool. Funding for the workshop was provided through the Corps' Sustainable Rivers Program, the Upper Mississippi River Restoration program, and partners' in-kind staff contributions. Wallace said the workshop is going well with additional meetings being planned for June 2021. Wallace expressed appreciation to the facilitator, Pat Heglund, for her role in leading the group through challenging discussions towards detailed objective statements. Wallace thanked the Corps for its partnership in this process as well as funding support.

Wallace reported that the UMR Hazardous Spills Group has initiated planning process to develop a five-year strategic plan for the purposes of positioning the group (including UMRBA staff resources) to effectively increase the prevention of, and preparation for, spills of hazardous materials as a means to maintain the multiple uses of the river. The first strategic planning session was convened virtually on April 21, 2021. The next planned meeting is scheduled for June 9, 2021 and will also be held remotely. Wallace thanked USEPA for offering facilitation support services through its contractual relationship with Tetra Tech. Wallace remarked that the Tetra Tech facilitator is well versed in spills planning and has led very productive conversations.

Wallace pointed to UMRBA's financial statements on pages B-24 to B-27 of the agenda packet. Tim Hall moved and Steve Galarneau seconded a motion to approve the Association's budget report and balance sheet as included in the agenda packet. The motion was approved unanimously.

Illinois River Basin Next Generation Water Observing System (NGWOS)

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

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

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

Duncker reported that USGS is beginning to procure instrumentation for monitoring harmful algal blooms at fixed locations (i.e., gaging sites) and for mobile rapid response. It is a bit of an iterative process. USGS is working with partners to determine what and where instrumentation is needed to fill specific data gap priorities. This includes expanding instrumentation at existing gage locations and at other areas.

Acknowledging the national perspectives of USGS NGWOS program, Duncker explained that the Illinois River Basin is the third of 10 basins to receive this extensive monitoring and assessment and was selected because of its ability to advance research with national applications related to nutrient loading and harmful algal blooms. Therefore, the study plans have had a strong focus on those two topics while also recognizing that other information needs would be addressed as NGWOS is ramped up.

Duncker reviewed the framework for implementing NGWOS, expanding out water resources observations on the landscape. USGS will be testing new instrumentation through the NGWOS program in the Illinois River Basin. This will include intensive sub basin monitoring; whereas monitoring has traditionally been placed at tributary confluences. USGS will also employ basin-wide monitoring, also integrating the new technology to remote sensing – e.g., multispectral monitors for HAB events with satellite imagery.

Duncker emphasized that stakeholder engagement will be a priority throughout the IWS implementation in the Illinois River Basin. UMRBA has been the first group that USGS has engaged with regarding the Illinois River Basin NGWOS. USGS is also consulting with Illinois DNR, the Corps, and stakeholders within the Illinois River Basin.

Duncker provided an overview of USGS's anticipated schedule for implementing over the next 10 years. In FY 2021, the focus is on stakeholder engagement, defining information needs, and procuring instrumentation that then would be installed in FY 2021 and 2022. Priority issues raised during stakeholder engagements so far include nutrients, harmful algal blooms, water chemistry, urban hydrology, sediment, water balance, and new technology.

Duncker reported that FY 2021 field activities include expanding the capacity of existing monitoring. USGS has partnered with Illinois EPA and the Illinois nutrient reduction strategy monitoring group to monitor at multiple locations in Illinois since 2015. There is a good basis of information of nutrients leaving Illinois and contributing to the Gulf of Mexico hypoxia issues. Currently, monitoring occurs on the Lower Des Plaines to capture nutrients leaving the Chicago metropolitan area and at Florence, Illinois to capture nutrient levels at the end of the Illinois River Basin. There is a gap in knowledge of nutrient loading at smaller watershed scales within the Illinois River Basin. Monitoring has tracked interesting trends in nitrogen and phosphorus loading from the Illinois River that might be informed by the expanded monitoring. In FY 2021, will upgrade instrumentation at three existing gaging sites.

Duncker acknowledged USGS's priority for improving knowledge of harmful algal blooms through the Illinois River Basin NGWOS. USGS is currently approaching purchasing deadlines to procure instrumentation to monitor harmful algal bloom events at both fixed locations and for mobile rapid response. USGS is hoping to have instrumentation for this summer to capture any outbreaks.

USGS is also using NGWOS to establish baseline conditions for a wide range of parameters, collecting samples at three strategic locations on two separate dates (June and August 2021). Resources this year are focused on employing stakeholder meetings and buying equipment, preparing for field monitoring in FY 2022.

Dru Buntin notes Olivia Dorothy's question regarding timeframe for prediction within the IWP. Duncker said IWP engages in the conversations but it is very early in the process. IWP is informing where data gaps exist.

In response to a question from Buntin, Duncker explained that USGS is planning to select 10 IWS basins nationwide over the next 10 years with a new basin announced every year. USGS has not yet announced the fourth river basin.

Buntin explained that Missouri is evaluating opportunities to expand its soil moisture monitoring network. In response to a Governor-appointed group that recommended this expanded monitoring and forecasting capacity, the state's general assembly appropriated funds to do that. Buntin asked about the nature of USGS's partnership and processes for leveraging of nonfederal dollars. Duncker explained that USGS places a strong priority on its ability to align its efforts with partners. For example, USGS understands that the agriculture and research communities have extensive monitoring that can be integrated into a comprehensive network of data. It is in USGS's interest to utilize that data. Buntin asked if USGS's IWS process requires cost-share of some type. Duncker said NGWOS is not a cost-shared program. But USGS is looking to align and build with partners' efforts.

Buntin pointed to Ken Westlake's question in the chat forum regarding whether USGS's NGWOS has involved interagency discussions including USEPA. Duncker said USGS is scheduled to host a briefing on the Illinois River Basin NGWOS on June 2, 2021 and has invited a broad distribution list of stakeholders. Kirsten Wallace said she would forward the briefing invitation to UMRBA's Board members and federal liaisons.

Jennie Sauer mentioned that NGWOS providing funding to analyze approximately 600 historic phytoplankton samples from UMRR's long term resource monitoring. Sauer said it is a good showcase of leveraging large programs.

Navigation and Ecosystem Sustainability Program

Andrew Goodall provided an update on the progress in planning Navigation and Ecosystem Sustainability Program (NESP) in FY 2021 with the $5 million allocation. Navigation-related projects include planning on the L&D 25 lock wall modification, L&D 14 mooring cell, and Moore's Towhead systemic mitigation project on the Illinois River. Ecosystem restoration-related projects include Twin Islands shoreline protection project, Alton Pool Islands, Pool 2 wingdam notching, and Starved Rock habitat restoration and enhancement. Goodall confirmed that all of these projects are anticipated to be construction-ready in FY 2021. NESP continues to advance planning of L&D 22 fish passage, which is current at a 35 percent design level. The Corps published a draft tentatively selected plan of L&D 22 fish passage for public review. The Corps held a public meeting on May 21, 2021 and is requesting comments by June 19, 2021.

Dru Buntin asked for the Corps' plans on meeting consultation needs with the states and other partners. Goodall said the Corps is evaluating the approach given the amount of funding received in FY 2021.

Buntin referred to Olivia Dorothy's comment in the chat forum. Goodall read Dorothy's comment: The NESP final environmental impact statement mandates an implemental implementation of the navigation components. The small-scale and nonstructural navigation efficiency projects must be constructed before the locks. Making modifications to L&D 25 lock wall violates the approved plan. How do you justify that? Goodall said he can follow up with Dorothy with additional detail. Goodall explained that the L&D 25 lock wall project and L&D 14 mooring cell projects are classified as small-scale efficiency improvements.

Goodall read a comment from Dorothy in the chat forum, in which Dorothy referred to Goodall's explanation of Moore's Towhead being intended to mitigate future increases in navigation traffic. Dorothy said navigation traffic is no longer projected to increase, asking why that project continues to be prioritized. Goodall said systemic mitigation is a component of NESP's authorization, making Moore's Towhead within the program's purview to advance.

Goodall referred to a comment in the chat forum from Dorothy asking if the Corps has updated partners on the 2019 NESP economic update. Goodall said a partnership briefing has not yet occurred. Corps leadership has not yet provided guidance to District staff for doing that.

Goodall read a comment from Mike Klingner in the chat forum asking about the cost-benefit ratio of L&D 22 fish passage, noting the current frequency of gates being open. Goodall said the Corps' assessment is provided in the project's draft tentatively selected plan. Goodall referred Klingner to the plan, which is available publicly on the Corps' website.

Gretchen Benjamin said she is aware that the Corps has reassessed cost estimate of NESP's navigation component to $3.8 billion whereas the navigation projects were collectively authorized in 2007 at $2.2 billion. Benjamin noted that the new navigation cost estimate is larger than the 2007 total program authorization. She reminded that a cumulate impact assessment was completed around the navigation-related work, resulting in an integrated plan of both navigation and ecosystem restoration. This requires that all of that ecosystem restoration work is funded comparatively to investment in the navigation component. Benjamin questioned how partners will deal with the substantial increase in the navigation-related costs. Goodall explained that Congress directed the Corps to update costs associated with the navigation component only as part of the 2019 economic update. These costs increased primarily due to inflation. Fourteen years have passed since the 2007 authorization. It will require updating costs for ecosystem restoration as well. Benjamin recalled a comment from Scott Whitney during a partnership meeting in 2020 in which he explained that NESP would have to go through some form of reauthorization if the updated cost estimates are above a certain percentage of the program's original authorized cost. Therefore, it seems like the ramifications of these new cost estimates will be fairly significant. Goodall explained that Section 902 of WRDA 1986 defines the maximum amount that an authorization (project or program) may cost. This "Section 902 limit" also increases with inflation similarly to inflation updates for the project costs. It is unknown yet whether the updated costs for the program elements would exceed the updated Section 902 limit. If that were to occur, the Corps would seek a post authorization change report to increase the Section 902 limit.

Goodall referred to a comment in the chat forum from Dorothy, noting that UMRBA had formally requested a briefing on the 2019 NESP economic update. Dorothy asked if that request has been fulfilled or rescinded. She asked the Corps to provide a report on the 2019 NESP economic update and why the report included USDA's economic forecasts when the Corps' economists found the USDA report

to be not valid based on economic theory. Dorothy stated in the chat forum that the benefit-cost ratio found in the NESP economic update is between 0.26 and 0.67.

Buntin said the request from UMRBA to receive a briefing on the NESP economic update was not rescinded. Kirsten Wallace confirmed that the request occurred formally both verbally during the August 20, 2019 UMRBA quarterly meeting and through written communication in a July 19, 2019 letter to the ASA(CW)'s office. UMRBA has not yet received a briefing on the report. Goodall explained that direction provided to the District was simply to do the analysis for the economic update on NESP. The District forwarded the economic update to the Division in December 2019. There was not follow on direction for disseminating the results. Goodall was not engaged in decisions related to the report's publication, including attaching the USDA traffic projections.

Dorothy mentioned that the Corps provided to her a copy of the 2019 NESP economic update through a FOIA request and therefore should be publicly available to anyone else. Goodall said he will explore internally regarding plans to disseminate the report.

Atchison County Levee District

Dru Buntin said Atchison County is located in the northwest corner of Missouri bordering the Missouri River. The County's levee district was heavily impacted by the 2019 flood event, experiencing significant damage. Similar to other levee systems on the Mississippi and Missouri Rivers, the duration of the flood event was most impactful. The levee systems were not designed to withstand that type of flooding. In the wake of the 2019 flood, the Missouri Governor issued an executive order tasking a flood recovery advisory working group with evaluating opportunities to respond to the 2019 flood event and to make recommendations for utilizing state appropriated dollars to assist with the recovery. The Atchison County Levee District proposed the set back early in the discussions and it was one of the first recommendations to be supported through the working group. The levee setback involved the levee district, the state of Missouri, the Corps, USDA NRCS, TNC, and numerous other organizations and individuals.

Kayla Eckert Uptmor said she is the Chief of Civil Works for the Omaha District and is providing remarks on behalf of the District Commander Mark Himes and District Engineer Ted Streckfuss. Eckert Uptmor explained that the Governors of Missouri, Iowa, Nebraska, and Kansas engaged immediately at the start of the 2019 flood event and continued that direct and close engagement throughout the duration of the flood. The Governors charged the Corps with thinking strategically with respect to river management. Eckert Uptmor observed that the successes in responding to the 2019 flood event were achieved in large part because of cooperative engagement from public and private entities. While the Corps must follow the P.L. 84-99 rules, strong partnerships that occurred during the 2019 flood are imperative for repairing systems in ways that have multiple benefits.

In the chat forum, UMRBA shared the following web links related to the Atchison County Levee District levee set back as follows:

- Web page: https://www.nature.org/en-us/about-us/where-we-work/united-states/missouri/stories-in-missouri/missouri-river-levees/
- YouTube video (full length): https://www.youtube.com/watch?v=a7TojhjZUVo

UMRBA played the short length video trailer, which located at the following web link: https://www.youtube.com/watch?v=81ecNuF_O1o.

Corina Zhang described the engineering and construction aspects associated with the levee setback. Zhang started with describing the 2019 flood event, which was particularly unique on the Missouri River because the flood event occurred mostly downriver from the dams and therefore was largely unregulated. Components included saturated soils and a bomb cyclone followed immediately by a very quick melting of the snowpack. The 2019 flood was unprecedented in that it occurred for more than nine months. Most of the 2019 flood damage to the levee systems on the Missouri River occurred from overtopping, resulting in more widespread damages spanning a large geography. Costs to repair damages in the Omaha District through the P.L. 84-99 program are estimated above $600 million. Zhang used a series of photographs and maps to illustrate the extent of the damages.

Zhang mentioned that realignment was considered for another levee district but explained that time is a limiting factor. Decisions need to be made fairly quickly about how breaches will be repaired, particularly when major infrastructure is located behind the levee systems.

Zhang discussed the repair considerations and realignment risks associated with the Atchison County Levee District levee setback – e.g., short timeframe for sponsor acquisition of real estate, unknown material suitability. Part of the project's success was the collective agreement to assume the risk and adapt together as the project unfolded. Zhang highlighted the project's innovative design and construction features, including virtual contractor site visits,

Regan Griffin, Atchison County Levee District sponsor, discussed experiences with several major flood events since the 1950s. Historically, the Levee District had mostly fixed the breaches in place. More recent floods have required residents to evaluate other options. The Levee District was motivated to choose realignment to relieve known pinch points, update 67-year-old levees, and change the levee slope from three-to-one to five-to-one. Griffin said the District also felt compelled to compensate landowners for ground that would become riverside. Griffin explained that TNC arranged a meeting between the Levee District and government officials to discuss realignment opportunities. Ultimately, a critical issue was how to pay for the roughly $3.2 million in cost. Griffin echoed earlier comments that convening people and building a strong partnership was the key to getting the project implemented.

Barbara Charry explained TNC's priorities for getting involved in this project. Levee setbacks are an important climate adaptation tool that increases flood resilience and results in multiple benefits, including habitat for wildlife, recreation, and water quality. TNC's primary roles were to convene partners and assist with real estate. TNC convened the initial meeting and facilitated discussions among partners to build agreed-upon solutions. Charry reflected on the importance of the facilitation role for achieving these types of projects that also support the local community. The other challenging issue is the lack of available funds for real estate, particularly as it relates to the quick timing in emergency situations.

In addition, TNC hosted a suite of communications materials associated with the project, including a dedicated web page, video, fact sheet, and playbook to share lessons learned and make it easier for future similar projects. The playbook is scheduled to be published in summer 2021. TNC hopes to achieve of these types of projects in the Mississippi and Missouri Rivers.

Chris Hamilton discussed the role of NRCS and its Emergency Watershed Protection Program for Floodplain Easements, which allows NRCS to purchase floodplain easements when the current condition of the land or watershed impairment poses a threat to health, life, or property. NRCS staff assess the need for the funds and work with landowners who apply voluntarily for the perpetual easements. The

program allows NRCS to restore the landscape to pre-settlement condition. NRCS staff engaged in the Levee District discussion to determine how the agency's programs could contribute in the realignment opportunity and how NRCS's programs could work with the Corps' programs. NRCS was able to secure over $25 million through the Emergency Watershed Protection Program for floodplain easements on the Missouri River. This allowed NRCS to provide the funding to compensate landowners. Hamilton shared agreements that allowed partners to overcome implementation obstacles, including the use of an emergency clause through a memorandum of understanding, compatible use authorization, and policy waivers for early restoration.

Buntin underscored the damage that occurred during the 2019 flood: 80 levees overtopped or were breached, 1.2 million acres of agriculture land were flooded, 470 state highways were closed. The Governor's Flood Recovery Advisory Working Group was instrumental in providing recommendations that could then create the energy to move big projects such as the Atchison County levee setback. It propelled the state to do what it could to also ensure the project's success. Buntin explained that the real issue became funding for real estate. The state of Missouri agreed that compensation was important to provide to landowners for unprotected property. These types of projects need flexible funding sources when these disasters occur and as early decisions are made regarding repair opportunities. Buntin acknowledged the significance of the levee board in working with residents and applauded their hard work and leadership. Buntin also said the project underscored the value of having a systemic plan in place that will foster these types of opportunities. Buntin said the TNC playbook can also be helpful to transfer insights to the Upper Mississippi River. He also applauded TNC for its role in facilitating and fostering partnerships. Buntin said the state assembly has appropriated funds to identify comparable projects in other areas along the Missouri River. Buntin also thanked the Missouri DoC for its work in partnership with TNC in the acquisition of unprotected lands. The newly connected floodplain will have considerable ecological benefits and the plan is for those lands to be managed by Missouri DoC.

Dave Crane is the environmental lead on the Atchison County levee setback project. Crane illustrated how the various conservation programs fit together on the floodplain, showing the portions of the landscape where the various federal and state programs are implemented. Crane observed that large scale levee realignment projects can be achievable with conservation programs, landowners who are willing sellers, and people or organizations willing to purchase the lands for conservation purposes. Crane provided an overview of the environmental benefits associated with the levee realignment, including increased water conveyance, overtopping protection, restored wetlands and floodplains with habitat opportunities for various fish and wildlife species.

Buntin referred to a comment from Chuck Theiling in the chat forum asking about public access features. Crane said that, as part of the project, there will be multiple points of access including up-and-over ramps and one road at the downstream end that will be maintained as access over the levee.

Buntin referred to a comment from Kristen Bouska in the chat forum asking if there are plans to share this project in areas where levee districts are vulnerable to failure. Buntin said the playbook is intended to help in that way in terms of identifying policy and funding challenges for these types of projects and how solutions were achieved for this particular project. Buntin mentioned that Missouri is collaborating with Kansas, Nebraska, and Iowa on a Lower Missouri River study and have begun sharing this information in three specific areas of interest. Charry added that TNC engaged in media campaign to share the story in those surrounding communities.

MVD Perspectives

Dru Buntin introduced MG Diana Holland who took command of MVD in June 2020. Because of meeting restrictions, UMRBA has not had an opportunity to meet with MG Holland in-person yet. Buntin expressed appreciation to MG Holland for joining the UMRBA meeting to share her perspectives with UMRBA's member states and our partners. Buntin also expressed gratitude to MG Holland for her participation in the Mississippi River Commission's tour of the Atchison County Levee District in spring 2021.

MG Holland expressed her eagerness to participate in UMRBA's meeting and said she hopes that we will all be meeting in-person very soon. While we can all be thankful for the technology that is allowing us to continue meeting, the in-person exchanges are very important for strong partnerships. MG Holland introduced MVD, District, and ERDC leadership participating in the meeting.

MG Holland acknowledged the extraordinary partnership and effort in advancing the Atchison County levee setback. She said it would be great to continue seeing these types of opportunities move forward.

MG Holland said her top priority right now is building relationships with partners, starting by understanding their perspectives and the issues they are facing. She explained that partnerships have been important in her past experiences, but seem even more integral to the work done on the Mississippi River. There is substantial history that makes this region particularly special. Building partnerships require robust travel. She did not want to look back on 2020 as a lost year, so the Corps chose to mitigate risk associated with coronavirus. MG Holland said she made seven or eight trips to the Upper Mississippi River Districts as a means to showcase her support for the region.

MG Holland said the Mississippi River Commission has also had an aggressive agenda for 2021. The low water inspection tour will be on the Upper Mississippi River this year, and want to make the trip dynamic and inclusive. It is a great partnership opportunity, and hope to use the trip to build on our partnership priorities.

There is tremendous power in partnering, particularly among groups with different perspectives, interests, and ideas of solutions. There are many priorities we work on together that require building trust. Some shared concerns and challenges that will require us to talk and gather more include flooding and other disasters, environment protection, invasive species, aging infrastructure, and climate variability and volatility. Additionally, demands for water resources management are increasing every year at a pace that investment cannot maintain.

Dru Buntin noted the partnership between the Corps and UMRBA with respect to flood, drought, and sediment planning. Buntin asked how MG Holland envisions the partnership going from here. Buntin confirmed that the states remain committed to engaging with the Corps. MG Holland deferred to MVR Commander Col. Steve Sattinger to talk about the Corps' priorities with respect to that work. Buntin thanked Col Sattinger for his service during his tenure as District Commander and asked for his departing remarks.

Col. Sattinger said the Corps is happy to maintain a close partnership in developing the Keys to the River Report that was ultimately published by UMRBA. There was a tremendous amount of effort that went into producing the report. We continue to work on the necessary science that will inform the eventual study – e.g., hydraulic modeling, flow frequency study. Developing those tools is necessary to making the eventual study as valuable as possible to stakeholders. The Corps is hopeful that a new study start will be secured soon for the long term study. Right now, the right thing to do is to be sure that we know

exactly what we want to achieve through the report in part to know that we utilize the right tool. This includes aligning the states on flood risk management tools, managing sediment in the navigation channel, and mitigating drought. We will prepare to proceed through a Section 729 planning authority once a new start is achieved or a different tool that helps us move through the right process. We had some great staff from the Corps working on that project, including the project manager Paul St. Louis.

Col. Sattinger said the Keys to the River Report underlines the value of UMRBA, which is a forum to convene the five states and work on these hard issues with the federal agencies and other stakeholders. This region has a great team that works hard together. UMRBA provides tremendous efficiencies to work with the five states simultaneously and with our federal partners. Col. Sattinger said he will be transferring to the ASA(CW)'s office and will look forward to partnering with UMRBA and other partners through that capacity.

Kim Thomas said MVR continues to work with UMRBA to focus on the right tool to move the planning forward. Thomas said she is looking forward to those conversations and the continued partnership with UMRBA and the stakeholders.

Keys to the River Report

Dru Buntin acknowledged that the work started on the Keys to the River Report several years ago. A draft version was shared with about 60 stakeholders in mid January 2021 to get initial feedback on the report, which provided contextual history and other information around a set of vetted ideas. That version was revised substantially in March and April based on that feedback and then distributed to our broad stakeholder community on April 29, 2021. Today's purpose is to seek oral feedback on the report. Buntin introduced Brian Stenquist who graciously agreed to facilitate this portion of the quarterly meeting.

Brian Stenquist explained that the UMRBA Board would like to offer this opportunity for participants to offer thoughts on the Keys to the River Report. Stenquist reiterated that UMRBA sent an email request for thoughts on the Keys to the River Report on April 29, 2021. On May 7 and 11, UMRBA hosted informational webinars about the report's origins and development process to refresh stakeholders' familiarity with the report and to provide context to its content. In its April 29 email, UMRBA provided a set of questions to frame stakeholders thoughts and perspectives of the report as follow:

- What do you like about the report?
- What actions are important and can best support your work and the work of others?
- What are your preferences for UMRBA's next actions building upon the unified solutions identified in the report?
- What else do you need to support your work?
- Is there anything in this report that would make it more difficult for you?

Stenqujst called for stakeholder feedback referring to the questions listed above as well as other thoughts generally. Buntin mentioned that the link to the report is included in the agenda packet and is provided in the chat forum.

Olivia Dorothy said she submitted written comments to the April 29, 2021 version on behalf of American Rivers and the Nicollet Island Coalition, which includes the Sierra Club, Great Rivers Habitat Alliance, Prairie Rivers Network, and Missouri Coalition for the Environment. Dorothy expressed

frustration that her comments on that version were mostly the same as comments provided on the January 14, 2021 version, noting her observation that the group's comments were not incorporated. Dorothy said the Nicollet Island Coalition is especially concerned that the Keys to the River Report seems to lay out a flood management plan that would put public safety at risk and violate state and federal standards. Dorothy noted opposition to statements regarding public awareness of floodplain farming, suggesting that that approach violates modern planning guidance. Dorothy pointed to a section of the report that discusses dredging side channels and backwaters, and characterized that action as being unrealistic from a cost and feasibility standpoint but also environmentally damaging. While the report acknowledges watershed-scale solutions, it limits actions exclusively to the floodplain. Dorothy asserted that the Keys to the River Report development process has been largely discriminatory against communities of color who live in floodplains by refusing to hold meetings in those communities. Dorothy expressed objection to a statement in the report that the perspectives of underserved communities has been voiced by government officials working with them. Dorothy said she raised this issue at a stakeholder meeting and was told that underserved communities were not our constituents. According to Dorothy, the report does not meaningfully discuss known problems. For example, the report suggests that future conditions are unknown, which dismisses scientific knowledge of climate predictions for the region. The report also fails to discuss levee wars and installation of tiles in the watershed. Dorothy asserted that, without fully understanding the problems, we cannot find effective solutions.

Brian Stenquist asked participants to offer any additional perspectives to Dorothy's comments. Loren Wobig asked Dorothy to provide specific actions that the Nicollet Island Coalition would want to see occur in the watershed – e.g., sediment reduction or harmful algal bloom mitigation efforts. Dorothy said Nicollet Island Coalition asserts that the problems occurring the Mississippi River need to be fully integrated with options for solutions through USDA programs – e.g., healthy soils initiative to increase organic soil on farm fields to slow movement of water. Generally, management on the Mississippi River needs to be more closely linked with USDA to resolve underlying causes of flooding and sediment problems in the river.

Dru Buntin explained that there has been considerable thought around the scope and potential deliverables of the next planning process. A planning process at the geographic scale of the Upper Mississippi River can quickly become overwhelming in terms of what can be reasonably accomplished. Buntin pointed to the Atchison County briefing earlier in the meeting that illustrated the necessity of having a systemic plan in place so that agreed-upon solutions can be implemented as opportunities arise. Additional reasoning for focusing on solutions in the floodplain is the Corps set of authorities. According to Buntin, we need to have a plan that focuses on solutions in the river floodplain that is informed by a watershed context – i.e., the tributaries mostly affecting the river's resilience. Having that watershed context can also inform where to focus future investment. There are other federal and state soil and water programs in addition to NRCS that will provide many tools in the watershed. Dorothy noted that the Corps' Section 729 planning guidance allows the agency to evaluate solutions outside of its authority.

Stenquist mentioned Nancy Guyton's comment in the chat feature that environmental sustainability and economic sustainability must co-exist. Stenquist read Guyton's additional elaboration in the chat feature that the economical sustainability is very important to those who flood often.

Stenquist pointed to Chuck Theiling's comment in the chat feature that recently completed the Minnesota River Basin Interagency Study used tiered modeling to evaluate the influence of agriculture conservation best management practices on hydrology and sediment and nutrient transport. Its results

are broadly applicable to watershed conservation. Theiling said the study evaluates the placement of best management practices through sediment transport modeling at the HUC-12 and smaller resolution scales. The evaluation included water, sediment, and nutrient transport through tiling infrastructure. Theiling said his comment in the chat feature was to raise awareness of the study.

Stenquist read a comment in the chat feature from Mike Klingner that flood control needs to be the number one effort and that the risk informed decision framework planning process employed under WRDA 1999 identifies three alternatives. Klingner encouraged that one of those three top alternative be selected for implementation quickly, and noted that any one of those three alternatives would be financed mostly through private assessment and with minimal public expense. Klinger expounded on this comment by explaining that the process involved the federal and states agencies and stakeholder representatives, including environmental interests. It led to the conclusion that improved levels of flood protection are recommended throughout the Upper Mississippi River. Klinger added that the discussion and results are published in the 2008 UMRS Comprehensive Plan, which is publicly available on the Corps' website.

In response to a question from Wobig, Klingner said systemic flood planning was completed for the Upper Mississippi River with an evaluation of national and regional economic development benefit analyses. Klingner expressed his perspective that the regional economic development analysis is more important to considering local economic benefits and is more inclusive of economic factors. Stenquist referred to a comment in the chat feature from Guyton asking Klingner for an elaboration on his comment regarding private assessment financing. Klingner explained that levee districts are political subdivisions of their respective states and have the ability to implement assessments to pay for improvements to their respective levee infrastructure following authorization by Congress for such improvements. Klingner noted the challenges of securing federal funds given the low national economic development numbers.

Buntin referred to Dorothy's comments earlier in the meeting. UMRBA certainly appreciates the comments regarding engagement with underserved communities and how we gain their input. The UMRBA Board has talked quite extensively about how we begin to do this going forward. We all as public servants in public government agencies want to, and need to, improve going forward. Buntin said the personalized comments about racism bear no resemblance to any of the conversations held among the Board.

Stenquist concluded the session after hearing no other comments offered.

Invasive Carp

Unified Method (MUM)

Minnesota DNR, in partnership with Wisconsin DNR, USFWS, and USGS, employed a significant effort to eradicate and detect the presence of invasive carp in Pool 8 in spring 2021. Carli Wagner explained that, in March 2020, there was a large capture of invasive carp in Pool 8 that raised concern of a potential reproduction event. In fall 2020, commercial fishing also reported several captures. Wagner observed that this exercise was equally about management intervention and learning. The project was supported by a USFWS state-interstate aquatic nuisance species management plan grant. Commercial fishing and other reconnaissance (e.g., eDNA sampling, tagging) in Pool 8 in October 2020 also helped to inform the project.

Wagner said the modified unified method exercise was employed in April 2021 for five days. The approach includes electric and acoustic stimulus that drives invasive carp into a concentrated, seinable area. USGS adapted the approach from a Chinese aquaculture technique and successfully implemented it in Kentucky, Illinois, and Missouri. Wagner explained in more detail how the process unfolded in Pool 8 over the five days. Wagner concluded that the effort was successful in reducing the density of invasive carp in Pool 8. The invasive carp collected were mostly male. Continued surveillance and removal are necessary in Pool 8. Next steps include increasing commercial fishing beginning in spring 2021, deploying two real-time receivers to aid tracking of tagged silver carp, sampling larval species, and employing more modified unified method density reduction events.

Buntin read Neal Jackson's comment in chat forum, asking about the cost of the modified unified method relative to the outcome and how this method compares to other removal efforts that have been used in the Upper Mississippi River System. Heidi Wolf said the costs associated with Minnesota DNR staff and partners' staff time in planning and implementing the project were not captured to be able to fully answer that question. The commercial fishing contract was the most expensive non-labor part of the project.

In response to a question from Lauren Salvato, Ben Larson explained that the location within Pool 8 where more invasive carp were captured is a staging area with some water movement and warmer temperatures, which is the most suitable habitat for the invasive carp. In response to Jim Lewis' comment in the chat forum that Larson referenced, Larson said the non-carp species were inventoried and he would send that information to Lewis.

Larson noted Ken Westlake's comment in the chat forum regarding native fish mortality. Larson explained that there was little mortality to none. The colder water in spring is a significant factor for the minimal mortality risk. Larson assumed that, if any, the eradication event may have resulted in a loss of a couple of freshwater drum. Paddlefish caught were placed immediately back into the river.

Steeppass Fish Ladder

Jim Lamer explained recent research to evaluate the potential use of a steeppass ladder by invasive carp. Illinois DNR is leading the research project in collaboration with the Illinois Natural History Survey, The Nature Conservancy, and Whooshh. For consideration of its use on the UMRS, it is important to evaluate how a steeppass ladder could be used to facilitate longitudinal movement of native fish and bighead and silver carp, including what attracts fish to use the steeppass fish ladder. A steeppass fish ladder was installed at the water control structure in Emiquon Preserve, located on the Illinois River in the middle of the La Grange reach.

Lamer presented on the steeppass fish ladder's features and the implementation and results of the trials of the installed ladder at Emiqueon Preserve. The steeppass fish ladder was operated in fall 2020 using security cameras to record fish passage and in spring 2021 using Whooshh scanner. In both tests, the fish passing through the steeppass fish ladder were gizzard shad. Illinois DNR is exploring the potential to adjust the elevation grade of the steeppass fish ladder and then evaluate changes to size and type of fishing using the ladder. No bighead carp moved through the steeppass ladder.

Lamer acknowledged that the ladder operation is dependent on river levels. Illinois DNR is exploring options for using a floating barge or other lift system to maintain the desired angle consistently at various river levels. Illinois DNR also hopes that the scanner technology can be used to separate desired and undesired fish species.

Lamer referenced a question from Bryan Hopkins in the chat forum and explained that the project partners coordinated weekly regarding invasive carp activity in the area. Electrofishing surveys were implemented to detect invasive carp.

NESP L&D 22 Fish Passage

Mark Cornish explained that L&D 22 fish passage is authorized under the Navigation and Ecosystem Sustainability Program (NESP) and was the product of rigorous study regarding options for improving fish passage on the UMRS. This evaluation is provided in the NESP Environmental (ENV) Report 54, following which L&D 22 fish passage was recommended in the 2004 Navigation Feasibility Study with Programmatic Environmental Impact Statement. The project was then authorized in the 2007 Water Resources Development Act and then provided in the 2008 Record of Decision and Implementation Guidance.

On May 17, 2021, the Corps published for public review the L&D 22 fish passage draft project implementation report with the associated environmental review documents. Comments are due by June 19, 2021.

Cornish explained that migration is essential to many native fish species for moving between habitats throughout their lives, including for reproduction, feeding, and winter survival. Navigation dams have reduced the ability for migratory fish to move access to important habitats. L&D 22 fish passage will restore a year-round connection of important habitats. In addition to longitudinal connectivity, a main goal for this project is to improve knowledge of fish passage at this scale for future potential applications.

Cornish explained that, over the past year, the Corps led a team of environmental specialists to evaluate various project alternatives using computer-generated models. Ultimately, the assessment resulted in the tentatively selected plan, which involves the following four features:

1) A rock ramp, known as the fishway, with a rock bottom and series of aligned boulders with gaps and spaces suitable for water and fish to move in-between
2) A bridge that extends from the storage yard over the fishway and ties into the spillway to enable people and vehicles to move over and around the fishway
3) Water control structures, or stoplogs, integrated into the bridge to control the flow of water into the fishway for research and allow for maintenance
4) A fixed debris boom immediately upstream of the fishway to protect the fish passage from large woody debris and ice as well as to function as a safe platform for monitoring and fish management activities

Cornish underscored the value of L&D 22 fish passage as serving as an important learning opportunity for potential future fish passage projects. The project has a substantial adaptive management component. The purpose is to evaluate how adjustments in different variables might alter the project's effectiveness. The four goals for LD& 22 fish passage adaptive management are as follows:

1) Improving the design criteria to find the appropriate channel width, depth, flow, hydraulic conditions, and shape of stone riffles

2) Reducing the cost of future fishways

3) Improving operation and maintenance of future fishways

4) Avoiding interference with navigation and water control functions of the locks and dams

Cornish highlighted the scientific analyses that have concluded that L&D 22 fish passage could benefit more than 30 species of fish living in the UMRS and that depend on migration for reproduction, food, and winter survival. A number of game fish would benefit from the facilitated passage, such as walleye, sauger, smallmouth and largemouth bass, northern pike, and multiple species of catfish. Rarer species would also benefit, such as shovelnose sturgeon, lake sturgeon, paddlefish, silver lamprey, and American eel. The rock and gravel fishway would also serve as a spawning ground for several fish species.

Cornish explained that L&D 22 was selected as an ideal location for fish passage because reproducing populations of invasive carp already exist in the pools above and below the project. Construction of fish passage would not expand their range and increase competitiveness of native species. The project's adaptive management component offers the opportunity to monitor and potentially remove aquatic nuisance species.

Cornish said the public comment process of the tentatively selected plan is the final stage of the feasibility phase. This step involves finalizing the tentatively selected plan by making necessary adjustments considering comments received from the public. MVR will then submit the tentatively selected plan to MVD, which would then submit the plan to Headquarters for approval. With the pre-construction engineering and design complete, the project would then be eligible for construction funds per a Congressional appropriation. The total cost of the L&D 22 fish passage project is estimated to be $134 million, which is subject to change pending any delays in construction. The project would be fully paid with federal funds.

Dru Buntin read Karen Hagerty's comment in the chat forum, asking for the percent of time the gates are open and fish are able to pass through the dams. Cornish said he will provide Hagerty with the exact numbers following the meeting. Buntin read Ken Westlake's question in the chat forum regarding the Corps' anticipated schedule of the Corps' approval process following public comment on the environmental assessment. Andrew Goodall said the Corps anticipates finalizing the Corps approvals of the tentatively selected plan by the end of calendar year 2021.

Buntin directed UMRBA staff to prepare a comment letter for the Board's consideration. Steve Galarneau voiced support for that action.

Illinois Marine Transportation System Plan

BJ Murray reported on the Illinois Marine Transportation System Plan (IMTS) and Economic Impact Analysis Study. Murray pointed to the following web links that he provided in the chat forum, as follows:

- Illinois DOT's long range transportation planning web page: https://idot.illinois.gov/transportation-system/transportation-management/planning/index
  [Note: At the bottom of the web page, a "marine" tab provides more detailed information on the DOT's marine transportation planning.]
- 2020 Illinois Marine Transportation System Plan: https://idot.illinois.gov/Assets/uploads/files/Transportation-System/Reports/OP&P/Marine/2021/IMTS_Plan_March2021_Web_Final.pdf

— A video summarizing the Marine Transportation System, its economic impact, and forecasted commodity flows: https://youtu.be/h7F6aqf6thU

Illinois DOT contracted with WSP to conduct an assessment of Illinois' waterways infrastructure and develop a transportation plan for the state's waterways. Murray provided an overview of Illinois' 19 public port districts, over 400 private terminals, lock infrastructure, and ferries, barges, tugboats, water taxis, and cruise ships that use the waterways for commercial and recreational navigation. The geographic extent includes marine transportation on Lake Michigan, four navigable rivers, and the Chicago Area Waterway System.

The IMTS plan includes six key elements: introduction, history and system overview, public port district profiles, commodity flows and economic value, needs assessment and strategy development, and implementation. The plan's development involved six steering committee meetings, over 70 stakeholder interviews, and two state freight advisory committees. Murray noted that this is the Illinois DOT's first plan for its inland marine transportation system. The plan integrates with other Illinois DOT long-range transportation plans and includes programmatic recommendations and links to implementation partners.

Murray mentioned the highlighted information on the Mississippi River. Details offered within each specific port profiles include their respective top commodities and volume statistics, multimodal connections, terminal information, and economic value in terms of employment, income, value added, and output. Murray showcased the Mid-America Intermodal Authority Port District as an example.

Murray said the IMTS has a collective economic impact of $36 billion, supporting 166,628 jobs valuing $10.5 billion in worker income and generating $2.9 billion in federal, state, and local taxes. The IMTS moves $17.4 billion in gross state product, equaling about 4 percent of Illinois' total gross state product. These statistics are generated from the Corps' waterborne commerce dataset, Transearch data regarding country origins and destinations, and USDOT's freight analysis framework forecasted freight flows.

Murray highlighted key statistics relating to the IMTS. In 2017, food and food products were the highest volume outbound commodity shipped. Inbound commodities were more equally shared among metal, chemical fertilizers, gravel and salt, petroleum, non-classified, and non-fertilizer chemicals, and other primary non-metal products. Top in-state commodities moved on the waterways include sand, gravel, shells, clay, salt, and stag. Other in-state commodities shipped include non-classified, coal, petroleum, and non-fertilizer chemicals. Two-thirds of the volume shipped on the IMTS are to outbound destinations, which mostly originates on the Ohio River. Most of the in-state traffic is located within the Chicago region. A forecast analysis to 2045 shows a five-million-ton net. While there is a reduction in outbound traffic from the Ohio River of 31 percent, there is an increase in volume shipped of 37 percent within the Chicago region. The IMTS also includes profiles of specific industries that move product on the IMTS. Murray noted statistical information for food products, coal, and primary metal products.

Murray provided a summary of the recommendations put forth in the IMTS plan, as follows:

1) Create a Marine Section within IDOT with dedicated staff
2) Formally "integrate marine" as a mode within IDOT
3) Formally "integrate marine" throughout the State of Illinois
4) Develop Illinois marine system funding program
5) Use existing funding sources to address marine needs

6) Streamline processes for port activity permitting, dredging and making beneficial use of dredged materials

7) Re-evaluate the port district structure within the state

8) Establish a port district board appointment process within IDOT

Federal Agency Funding Reports

Kirsten Wallace explained that this agenda item was reserved in the event that the Biden Administration had published the FY 2022 budget. Since that has not yet occurred, Wallace said this time could be used by UMRBA's federal liaisons to share relevant information about guidance related to land conservation or racial equity as well as any relevant general updates on federal programs or projects.

U.S. Environmental Protection Agency

Ken Westlake provided a brief fiscal update for USEPA since his report at the February 2021 UMRBA quarterly meeting. Westlake mentioned that President Joe Biden released a "skinny budget" for FY 2022 on April 9, 2021. That FY 2022 skinny budget proposes a 21 percent increase in USEPA's overall budget compared to FY 2021. As always, the final numbers will depend on Congressional action. The proposed FY 2022 increase will particularly affect water infrastructure through several mechanisms that USEPA uses to directly or indirectly support infrastructure development. Westlake showed trends in the CWA and Safe Drinking Water state revolving loan funds, including allocations to UMRBA member states between FY 2015 and FY 2021.

Westlake noted the passage of the America's Water Infrastructure Action, which received its first appropriation in FY 2021. The appropriation is to USEPA, which in turn will allocate the funds to states to distribute locally. Early in the Biden Administration, a $2 trillion covid-response and stimulus measure (i.e., American Rescue Plan) was authorized into law that includes significant funds for water and wastewater infrastructure.

Westlake also discussed several measures pending in Congress that would have implications for the Upper Mississippi River. The proposed Drinking Water and Wastewater Infrastructure Act, which would authorize an additional $30 billion to CWA and Safe Drinking Water Act resolving loan funds and $6 billion in grant programs as well as environmental justice, climate resilience, and lead pipe replacement. The American Jobs Plan mentions state revolving loan funds and several infrastructure bills that are either proposed or in discussion that include attention to water and wastewater funding needs. Westlake noted the return of Congressionally-directed spending that may result in new or increased funding to advance particular Congressional priorities.

U.S. Fish and Wildlife Service

Sabrina Chandler reported that the FY 2022 skinny budget that Westlake mentioned includes a 16.3percent increase for DOI in comparison to the FY 2021 enacted levels. Chandler reported on the Administration's priorities (or pillars) for DOI that are delegated to USFWS to implement, including responsible development of renewable energy on public lands and waters, strengthening government-to-government relationships with sovereign nations, making investments in creating millions of family-supporting and union jobs, conserving at least 30 percent of lands and waters by 2030, and centering equity and environmental justice. USFWS Principal Deputy Director Martha Williams has added an additional pillar for USFWS around wildlife conservation, which the agency anticipates learning more

about in coming days. USFWS is very active in conservation initiative, with the objective focusing on protecting biodiversity, slowing extinction rates, and natural climate solutions on all public lands.

Chandler mentioned that USFWS is struggling with staffing issues. The agency is significantly understaffed even with slight increases in funding. Chandler anticipates these issues will continue for some time given centralization of hiring. For example, the Upper Mississippi Refuge typically has around 42 positions but are currently at around to 25 people on staff.

U.S. Geological Survey

Scott Morlock echoed Chandler's explanation of DOI's budget. Morlock explained that USGS's role in advancing DOI's pillars, as Chandler discussed, includes reclaiming abandoned wells and mines and advancing climate science, including in support of conservation and mitigation efforts. Morlock mentioned that the skinny budget calls for restoring USGS's critical agency capacity. USGS leadership is also exploring how the agency's science support underserved communities, particularly vulnerability to natural disasters, as well as how science can support the land conservation priorities.

Morlock said Dave Applegate continues to perform the duties of USGS Director. Tanya Trujillo is nominated, and had a Congressional hearing last week, to become DOI Assistant Secretary for Water and Science. In that capacity, Trujillo would oversee the U.S. Bureau of Reclamation and USGS.

Administrative Issues

FY 2022 Budget

Kirsten Wallace described the assumptions made in developing the FY 2022 budget, including income and expenses. Wallace noted that there remains uncertainty regarding in-person meetings and other historical funding needs (e.g., agenda packet printing). The budget assumes both a slow resumption of in-person meetings as well as a hybrid approach going forward of both in-person and virtual meetings for UMRBA and partners, which impacts the line items for meetings, printing, and travel.

In response from a request from Buntin as Chair, Tim Hall moved and Rick Pohlman seconded a motion to approve the UMRBA FY 2022 budget as presented by Wallace.

Future Meeting Schedule

August 2021 — Remote

- UMRBA quarterly meeting — August 10
- UMRR Coordinating Committee quarterly meeting — August 11

November 2021 — Location TBD

- UMRBA quarterly meeting — November 16
- UMRR Coordinating Committee quarterly meeting — November 17

February 2022 — Location TBD

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

With no further business, the meeting adjourned at 2:51 p.m.

ATTACHMENT B

Executive Director's Report

- **Executive Director's Report** *(B-1 to B-5)*
- **UMRBA NESP L&D 22 Fish Passage Support Letter (6/18/2021)** *(B-6 to B-7)*
- **UMR Spills Group Strategic Planning Scoping Framework (4/9/2021)** *(B-8 to B-10)*
- **State Hypoxia Task Force Members' Letter to Congress (7/1/2021)** *(B-11 to B-12)*
- **State Hypoxia Task Force Members' Letter to Congress Press Release (7/15/2021)** *(B-13 to B-14)*
- **Treasurer's Quarterly Statement (7/29/2021)** *(B-15)*
- **FY 2021 Budget Report and Balance Sheet (6/30/2021)** **[Note: This does not include year-end adjustments.]** *(B-16 to B-18)*
- **FY 2022 Budget Report and Balance Sheet (7/26/2021)** *(B-19 to B-21)*

Executive Director's Report
August 2021

ADVOCACY

House Select Committee on the Climate Crisis

On Friday, June 11, 2021, Kirsten Wallace testified to the House Select Committee on the Climate Crisis on behalf of UMRBA. The hearing focused on building resilient communities and also included the mayors of Madison, Los Angeles, and Atlanta. The testimony focused on how regional science, coordination, and planning can result in regional resilience.

The testimony shared what we know about ecological resilience through the Upper Mississippi River Restoration (UMRR) program and underscored the interconnectedness of communities and river users/uses that require a collective effort at the regional or watershed scale. In addition, the testimony called for investment in UMRR, the Navigation and Ecosystem Sustainability Program (NESP), nutrient reduction strategies, and long term resilience planning.

ECOSYSTEM HEALTH

Upper Mississippi River Restoration

UMRBA is developing a survey of the 2015-2025 UMRR Strategic Plan to assess progress in achieving the outcomes and success criteria and to inform the UMRR Coordinating Committee's evaluation of priorities for program implementation during the second half of the plan's life. The intention is to distribute the survey to agency staff and nongovernmental partners directly involved in UMRR's implementation.

UMRBA staff are facilitating communications planning associated with the publication of the third decadal UMRR long term resource monitoring status and trends report. That report is currently undergoing publication support within USGS and is scheduled to be released in November 2021. The program partners are considering target audiences, including what we want them to do and what we want them to know in terms of the status and trends findings.

On July 18, 2021, UMRBA organized a kickoff meeting for the 2022 UMRR Report to Congress with report authors and collaborators. On the call, UMRR Program Manager Marshall Plumley provided a schedule and process for the report development.

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

UMRBA staff participated in the July 20, 2021 UMRR Analysis Team's quarterly meeting and in monthly meetings of the UMRR Communications and Outreach Team.

Water Level Management

UMRBA hosted a second series of structured decision making (SDM) workshops on June 29, 2021 and July 12-13, 2021 to clarify ecological objectives for employing water level management as a management tool. Funding for the workshop was provided through the Corps' Sustainable Rivers Program, the Upper Mississippi River Restoration program, and partners' in-kind staff contributions.

The WLM Regional Coordinating Committee met on July 14, 2021 to share results of the ecosystem benefits analysis using the Dabbling Duck Migratory Model. The habitat evaluation model is used for UMRR HREPs to determine the habitat units gained given the costs of implementation.

Navigation and Ecosystem Sustainability Program

On June 18, 2021, UMRBA submitted a letter indicating its support for the Navigation and Ecosystem Sustainability Program (NESP) L&D 22 Fish Passage Tentatively Selected Plan and to offer comments related to adaptive management and communications. The letter noted the complex nature of the proposed project and that continued coordination and communication with partners and the public will be critical to the success of the project. The letter is provided on pages B-6 to B-7 of the agenda packet.

UMRBA staff continue to coordinate monthly NESP interagency partnership meetings. Staff also attended the District-based river teams' initial sessions to identify ecosystem restoration projects through NESP.

NAVIGATION

Corn Belt Ports and UMIMRA Joint Meeting

UMRBA staff attended the June 17, 2021 joint meeting of the Corn Belt Ports and UMIMRA to present an overview of its current navigation-related priorities, including NESP, M-35, and long term resilience planning. Staff presented UMRBA's newly published navigation assets inventory and discussed UMRBA's long term resilience planning objectives.

FLOOD, SEDIMENT, AND DROUGHT PLANNING

UMRBA Retreat

The UMRBA Board held a retreat on July 27-29, 2021 for the purpose of using the Keys to the River Report as a springboard to develop a more extensive scope, recognizing that the work will require multiple federal and state agencies. Brian Stenquist provided facilitation services.

HAZARDOUS SPILLS COORDINATION, MAPPING, AND PLANNING

Oil Pollution Act (OPA) Planning and Mapping

Data development continues for the Wisconsin statewide Inland Sensitivity Atlas (ISA) update. The current focus is on marinas, boat accesses, and hazardous materials storage facilities. Regional updates are expected to be delivered to USEPA on July 30, 2021. This includes data layers from the Great Lakes Commission.

Staff participated in several planning and coordination calls throughout June and July 2021, including discussions about developing new ISA sensitive species data.

Staff took part in a planning call for the Greater St. Louis Sub-area on July 20, 2021.

Tyler Leske began paternal leave on July 5, 2021. Lauren Holmes is serving in a temporary capacity to continue data development.

Strategic Planning

The UMR Spills Group held its second five-year strategic planning session meeting on June 9, 2021. The group defined a mission statement and began identifying goals and objectives. The purpose of the strategic planning effort is to "position the UMR Hazardous Spills Coordination Group (UMR Spills Group), including UMRBA staff, to effectively increase the prevention of, and preparation for, spills of hazardous materials as a means to maintain the multiple uses of the river." A scoping framework for the strategic planning process is provided on pages B-8 to B-10 of the agenda packet.

The group will hold its third five-year strategic planning session on August 17, 2021.

WATER QUALITY

WQEC/WQTF Joint Meeting

The UMRBA WQEC and WQTF met jointly on June 8-9, 2021 virtually. The meeting included presentations on total suspended solids in the Upper Mississippi River, soil loss in the corn belt region, hydraulic connectivity for sediment and nutrient sequestration in the floodplains, the Illinois River Basin next generation water observing system, and the impact of drought on arsenic exposure in private wells. In addition, the states provided updates to their respective CWA 303(d) and 305(b) assessments as well as nutrient reduction-related work.

Hypoxia Task Force

The Hypoxia Task Force Coordinating Committee's funding work group hosted a June 17, 2021 meeting focused on better utilizing the Clean Water State Revolving Loan Fund for nonpoint nutrient reduction. UMRBA staff serve as a co-chair of the funding work group. The meeting included an overview briefing from USEPA staff and case study presentations from staff of Iowa Department of Natural Resources, Minnesota Pollution Control Agency, and Arkansas Department of Agriculture.

State members of the Hypoxia Task Force Coordinating Committee sent a July 1, 2021 letter to Congress seeking support for the states' nutrient reduction strategies. The Iowa Department of Agriculture and Land Stewardship Secretary Mike Naig published an associated media release. The letter and press release are provided on pages B-11 to B-14 of the agenda packet.

USEPA Office of Water Meeting

UMRBA met in a July 15, 2021 virtual meeting with USEPA Office of Water's Office of Wetlands, Oceans, and Watersheds (OWOW) leadership. Staff were joined by UMRBA WQEC members Katrina Kessler and Chris Wieberg. UMRBA provided an overview of Upper Mississippi River management from a multi-purpose perspective, UMRBA's water quality program from its inception and today, and UMRBA's goals for working with USEPA.

Strategic Planning

The WQEC held its fourth strategic planning session on July 30, 2021. The WQEC reviewed a draft strategic plan that reflected the Committee's discussions over the past year and focused on how UMRBA can best support the states in advancing their collective nutrient-related goals.

Other

UMRBA staff participated in the following regional and national meetings and events:

- The Illinois Nutrient Monitoring Council's June 10, 2021 meeting, which included topics on USGS super gage alternatives, the future of Illinois statewide loading, and the Illinois River study.
- A USEPA public listening session on June 23, 2021 regarding the CWA Section 401 certification.
- The chloride technical management work group's July 21, 2021 meeting, which focused on initial development of a chloride reduction resources clearinghouse. USEPA Region 5 and Minnesota PCA co-host the work group, which involves membership from state agencies across the nation.

COLLABORATION

Illinois River Basin Next Generation Water Observing System

UMRBA staff joined USGS's July 2, 2021 briefing on its Illinois River Basin Next Generation Water Observing System. USGS staff provided detailed updates to instrumentation and ongoing efforts to install monitoring devises. USGS staff also provided a water quality-focused update to UMRBA's WQEC on June 9, 2021.

USDA Water Research Vision 2050 Workshop

USDA Agricultural Research Service (ARS) scientists created a Water Research Vision to 2050 (WRV) to address the following goals:

- Sustainable agriculture production that meets global food and fiber demands
- Water management that protects the environment, human, and animal health
- Healthy water resources in both quality and quantity

UMRBA staff participated in ARS's virtual workshop on January 20-22, 2021 for the purposes of ARS receiving feedback on the vision and facilitating discussion on the possibilities for collaboration in service to mutual interests and goals. Participants included ARS partners and scientists. ARS created small group forums for partners to share their perspectives and needs, explore opportunities for collaboration, and consider next moves together.

America's Watershed Initiative

America's Watershed Initiative's Board of Directors met on June 1, 2021 with USDA leadership Deputy Under Secretary for Farm Production and Conservation (FPAC) Gloria Montano and NRCS Chief Terry Cosby. The meeting purpose was to discuss Mississippi River watershed-wide water resources challenges and opportunities to pursue integrated, multi-purpose management.

FINANCIAL REPORT

Attached as page B-15 is UMRBA Treasurer Jason Tidemann's statement regarding his review of UMRBA's financial statement for the period of May 1, 2021 to July 1, 2021.

Attached as pages B-16 to B-18 are UMRBA's FY 21 budget report and balance sheet. These do not reflect anticipated year-end adjustments. Before adjustments, ordinary income for FY 21 totaled $603,372 and expenses totaled $593,656 for net ordinary income of $9,716. At fiscal year's end, UMRBA's cash assets and investments totaled $847,279, before adjustments.

Attached as pages B-19 to B-21 are UMRBA's FY 22 budget report and balance sheet. As of July 26, 2021, ordinary income for FY 22 totaled $15,414 and expenses totaled $61,590 for net ordinary income of minus $46,176. As of this date, UMRBA's cash assets totaled $800,486.

UMRBA
Upper Mississippi River Basin Association

June 18, 2021

Mr. Andrew Goodall
U.S. Army Corps of Engineers
Attn: Rachel Hawes
Rock Island District
Clock Tower Building, P.O. Box 2004
Rock Island, IL 61204-2004

Dear Mr. Goodall:

On behalf of the Upper Mississippi River Basin Association (UMRBA), I am writing to express our member states' support for the Navigation and Ecosystem Sustainability Program (NESP) L&D 22 Fish Passage Tentatively Selected Plan and to offer comments related to adaptive management and communications.

Formed in 1981 by the Governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin, UMRBA represents its member states' common water resource interests and works collaboratively with both state and federal agencies that have management responsibilities on the Upper Mississippi River System (UMRS). Over the many years of the Navigation Feasibility Study and subsequent efforts to authorize and then fund NESP, UMRBA's member states have consistently advocated for an integrated approach to managing the UMRS navigation system and ecosystem. L&D 22 fish passage restores the ability for migratory and resident native fish species to reach high quality spawning, rearing, feeding, and winter habitats that were made inaccessible by the existence of the dams.

Adaptive Management — The L&D 22 location allows for a unique learning opportunity regarding the efficacy of fish passage for increasing the competitiveness of native species in an area overcome by the presence of a dominant invasive species. For example, this project will allow restoration practitioners to evaluate the ecological benefits associated with this level of investment, informing future fish passage decisions. We share U.S. Fish and Wildlife Service's comments as provided on pages 121 and 122 of the Project Implementation Report and respectively request that the Fish Passage Science Team be reinstated to develop research questions, participate in the scientific assessments, and ensure that the results are transferable within the Upper Mississippi River and beyond. In particular, the states would support research to assess the movement of both native and non-native fish species, population-level dynamics from the increased mobility, the effectiveness of deterrents within the structure, and the role of fish passage projects in helping fish species adapt to climate change.

Communications — Given the enormity of the L&D 22 fish passage project and political complexity of non-native fish passage, it will be prudent for all partners to have a complete and current understanding of the project status, adaptive management strategy, and ongoing monitoring and

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

associated results. Additionally, we would respectfully request that an *ad hoc* communications team be convened to develop a communications strategy and a tailored set of messages regarding the project for different stakeholder needs.

We are eager to continue our partnership efforts with you. Please contact me at 651-224-2880 to discuss our comments in more detail.

Sincerely,

Kirsten Wallace
Executive Director
Upper Mississippi River Basin Association

cc: UMRBA Board and Federal Liaisons

UMRBA Upper Mississippi River Spills Group

2021 Strategic Plan
Process Scoping Document

Goal: To position the UMR Hazardous Spills Coordination Group (UMR Spills Group), including UMRBA staff, to effectively increase the prevention of, and preparation for, spills of hazardous materials as a means to maintain the multiple uses of the river.

Objective of the Planning Process: To develop a 5-year strategic plan that:

1) Establishes priorities and actions to achieve strategic goals
2) Guides in identifying and effectively addressing key policy and technical issues
3) Positions UMRBA to effectively facilitate interstate spill response planning
4) Integrates spill response coordination with other state and federal hazardous planning - e.g., harmful algal blooms, flood and drought management
5) Identifies and examines foreseeable challenges to program implementation - e.g., climate change, federal budget processes and appropriation levels

Example topics for consideration might include internal and external engagement, flood-related planning needs, and building response tools, designing exercises and providing training.

Major Assumptions:

1) The plan will articulate a long-term vision for the UMR Spills Group, which will reflect its members' roles and authorities and define implementation priorities for advancing that vision in the next five years. The plan will also define review periods.
2) Basic administrative provisions and program infrastructure will remain in place.
    A. Since 1989, UMRBA has provided staff support for UMR Spills Group, which includes representatives of state and federal agencies who play a role in contingency planning and spill response on the river. Local response agencies, industry, cooperatives, and response contractors are selectively engaged, which typically is influenced by meeting location and agenda topics.
    B. UMRBA staff whose role is to facilitate, and build tools for, interstate spill response planning are primarily funded by USEPA cooperative grants. Therefore, most of staff resources are spent on developing OPA-specific projects. Any new work would require additional resources such as grants, private contributions, or other sources.
3) The plan will build upon and incorporate partner-supported planning and other documents. These include, but are not limited to, the UMR Spill Response Plan and Resource Manual, the Minneapolis/St. Paul, Quad Cities, Greater St. Louis, and Great Rivers Sub-area Contingency Plans, UMR Pool Plans, Habitat Fact Sheets, and the Inland Zone Tactics Manual. See References below.

Planning Team: The strategic planning team will coordinate directly with their respective agencies to ensure that the outcomes are consistent with their goals and priorities. The team's composition reflects representation from the various program functions and responsibilities related to spill response:

— Joe Sanfilippo	Iowa Dept. of Natural Resources
— Bobby Elzie	Illinois Environmental Protection Agency
— Mike Rose	Minnesota Pollution Control Agency
— Rick Gann	Missouri Dept. of Natural Resources
— Jayson Schrank	Wisconsin Dept. of Natural Resources
— Andy Maguire	USEPA Region 5
— Joe Davis	USEPA Region 7
— Aleshia Kenney	U.S. Fish & Wildlife Service
— Jeff McCrery	U.S. Army Corps of Engineers
— Adam Davis	NOAA
— TBD	U.S. Coast Guard
— Tony Houdyshell	CP Rail
— Jim Holland	Pinnacle Engineering
— Dave Donovan	Scott Co. (IA) and Quad Cities CAER
— Matt Stokes	Safety Training and Response Strategies
— Bill Lazarz	Bay West and Wakota CAER

Planning Process and Meeting Management: The planning process will begin on April 21, 2021, with the goal of finalizing the five-year plan no later than December 31, 2021. The process will involve about 4 meetings. All meetings will be held remotely except the Fall 2021 UMR Spills Group meeting, pending the lifting of pandemic restrictions. The anticipated schedule will be developed when a facilitator is secured.

USEPA is providing a trained facilitator per its contractual relationship with Tetra Tech (Eric Deselich) to guide discussions, assist in the planning process, and develop a document of the strategic priorities. Mark Ellis (UMRBA) will provide support services for the process, including preparing meeting arrangements and materials and developing draft meeting summaries.

References:

UMR Spill Response Plan and Resource Manual: http://www.umrba.org/hazspills/umrplan.pdf

Minneapolis/St. Paul Sub-area Contingency Plan:
https://rrt5.org/Portals/0/PDFs/MplsStP_SACP_MainBodyPlan%20Final%20Jan%202021.pdf

Quad Cities Sub-area Contingency Plan:
https://response.epa.gov/sites/11807/files/Quad%20Cities%20SACP_Public_July%202018.pdf

Greater St. Louis Sub-area Contingency Plan
https://epaosc.org/sites/6065/files/GSL%20SACP_public%20access_Sept-2013.pdf

Great Rivers Sub-area Contingency Plan:
https://response.epa.gov/sites/8554/files/Great%20Rivers%20SACP_Public%20Version_Oct%202020.pdf

UMR Pool Plans https://rrt5.org/SubAreas.aspx

Habitat Fact Sheets: https://rrt5.org/RCPACPTools/HabitatFactSheets.aspx

Inland Zone Tactics Manual:
https://rrt5.org/RCPACPTools/InSituBurning/InlandResponseTacticsManual.aspx

Spill Equipment Viewer:
https://umrba.maps.arcgis.com/home/signin.html?returnUrl=https://umrba.maps.arcgis.com/apps/webappviewer/index.html?id=c3e6468e20644d05960cbad9e6fc44b6 (login required)

Mississippi River Gulf of Mexico Watershed Nutrient Task Force

HTF Member State Representatives

Secretary Mike Naig, Chair
Iowa Department of Agriculture and Land Stewardship

J. Ryan Benefield, Deputy Director
Arkansas Department of Agriculture

Kristi Jones, Deputy Director
Illinois Department of Agriculture

Bruce Kettler, Director
Indiana State Department of Agriculture

John Webb, Interim Member
Watershed Management Branch Manager-Kentucky Division of Water

Harry Vorhoff, Deputy Director
Louisiana Governor's Office of Coastal Activities

Katrina Kessler, Assistant Commissioner
Minnesota Pollution Control Agency

Chris Wells, Executive Director
Mississippi Department of Environmental Quality

Kurt Boeckmann, Director of Soil and Water Conservation Program
Missouri Department of Natural Resources

Kirk Hines, Deputy Director
Ohio Department of Agriculture

John McClurkan, Program Manager
Tennessee Department of Agriculture

James Zellmer, Deputy Division Administrator
Division of Water - Wisconsin Department of Natural Resources

July 1, 2021

To Whom It May Concern-

The Hypoxia Task Force is a partnership of 12 states and five federal agencies that has worked collaboratively for 20 years through the *Gulf Hypoxia Action Plan* to reduce nutrient loading throughout the Mississippi and Ohio River Basins and the extent of the hypoxic zone in the northern Gulf of Mexico. The *Action Plan* has a near term target of reducing nutrient loading (nitrogen and phosphorus) to the Gulf from the basin by 20 percent by 2025, and a long-term goal of limiting the Gulf Hypoxic Zone to an average annual size of less than 5,000-square kilometers by 2035, subject to availability of adequate resources.

We, as member states, have led the development and ongoing implementation of our respective state-specific nutrient reduction strategies, with extensive stakeholder engagement as a means for advancing the *Action Plan*. Many of our states have created dedicated programs and funding streams to advance the strategies' actions.

While important strides in conservation practices and point and nonpoint source loading reductions have been achieved, attaining the goals we have collectively set for reducing nutrient loading through the *Gulf Hypoxia Action Plan* will require acceleration of its implementation, through expanded regional collaboration among farmers, municipalities, and conservation interests. Conservation practices and ecosystem restoration efforts to increase nonpoint source nutrient reduction also have many supplemental national benefits such as flood risk reduction, improved habitat for wildlife and pollinator species, and greenhouse gas reductions.

We appreciate financial and technical support from USEPA, NRCS, and NOAA over the past decade to aid in the states' development of the nutrient reduction strategies. However, resources focused specifically at nutrient reduction actions continue to be the limiting factor in reaching the goals established in the *Action Plan*. The 2015 Revised Goal of the *Action Plan* indicates clearly "neither the Interim Target

nor the Final Goal can be achieved without significant additional resources."[1] The ability to appropriately streamline programs and limit regulatory burden to advancing these important practices also enable states to scale-up implementation efforts.

As 2021 begins, we ask the Congress to ensure that any legislation introduced to address the important needs for improving water quality, in the Basin and Gulf also include fiscal support for each State's Nutrient Reduction Strategies in support of the *Gulf Hypoxia Action Plan.*

Sincerely,

Mike Naig
Iowa Secretary of Agriculture
States Co-Chair – Mississippi River/Gulf of Mexico Watershed Nutrient Task Force

[1] Gulf Hypoxia Action Plan New Goal Framework, December 2014, https://www.epa.gov/sites/production/files/2015-07/documents/htf-goals-framework-2015.pdf.

IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP

MIKE NAIG
SECRETARY OF AGRICULTURE

FOR IMMEDIATE RELEASE

Contact: Keely Coppess
515-326-1616
Keely.Coppess@iowaagriculture.gov

12 State Members of the Hypoxia Task Force Request Additional Support to Continue Advancing their Nutrient Reduction Strategies

State HTF members sent letters to Congressional committees requesting continued support for their state-level nutrient reduction strategies, part of the Gulf Hypoxia Action Plan

DES MOINES, Iowa (July 15, 2021) – Iowa Secretary of Agriculture Mike Naig, co-chair of the Gulf of Mexico Hypoxia Task Force (HTF), and representatives from 11 other member states, sent letters to the U.S. Senate and House appropriations and relevant policy committees today. In the letters, the HTF states requested that Congress continue streamlining programs, limiting regulatory burdens and renewing federal appropriations to help local leaders continue advancing their nutrient reduction strategies.

"The HTF states are committed to showing improvement in water quality in our local communities and downstream. At the state level, we have dedicated staff that are working every day alongside local, federal, public and private partners to tackle this complex challenge," said Secretary Naig. "The states are implementing science-based soil health and water quality practices in targeted watersheds because we know that changes on the landscape lead to changes in the water. Land-based conservation practices capture and treat nutrients very effectively but they require significant engineering, construction and financial resources to build. That's why we're asking Congress to advance programs that help maximize state and local investments in soil health and water quality practices."

In the letters to Congress, the HTF states wrote, "while important strides in conservation practices and point and nonpoint source loading reductions have been achieved, attaining the goals we have collectively set for reducing nutrient-loading through the Gulf Hypoxia Action Plan will require acceleration of its implementation through expanded regional collaboration among farmers, municipalities and conservation interests.

"We appreciate the financial and technical support from USEPA, NRCS and NOAA over the past decade to aid in the states' development of the nutrient reduction strategies. However,

resources focused specifically at nutrient-reduction actions continue to be the limiting factor in reaching the goals established in the Action Plan."

The HTF states also asked the Congressional committees "to ensure that any legislation introduced to address the important needs for improving water quality in the Basin and Gulf also include fiscal support for each state's nutrient reduction strategies in support of the Gulf Hypoxia Action Plan."

Read the full letters to Congressional committees here.

The HTF is a partnership of 12 states and five federal agencies that work collaboratively to support efforts that reduce nutrient-loading throughout the Mississippi River Basin and the size of the hypoxic zone in the northern Gulf of Mexico. The HTF Action Plan has a near-term target of reducing nutrient-loading to the Gulf from the basin by 20 percent by 2025, and a long-term goal of limiting the Gulf hypoxic zone to an average annual size of less than 5,000-square kilometers by 2035, subject to the availability of resources.

To learn more about the Mississippi River/Gulf of Mexico Hypoxia Task Force and its Action Plan, visit epa.gov/ms-htf.

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About the Iowa Department of Agriculture and Land Stewardship

Led by Secretary Mike Naig, the Department of Agriculture and Land Stewardship serves the rural and urban residents that call Iowa home. Through its 12 diverse bureaus, the Department ensures animal health, food safety and consumer protection. It also promotes conservation efforts to preserve our land for the next generation. Learn more at iowaagriculture.gov.

From: Tidemann, Jason (DNR) <jason.tidemann@state.mn.us>
Sent: Thursday, July 29, 2021 10:17 AM
To: Kirsten Wallace
Cc: Margie Daniels
Subject: RE: UMRBA May 2021-June 2021 Treasurer Report

Hello Kirsten,

As Treasurer, I have reviewed the monthly financial statements for the period 5/1/21-7/1/21. 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

Upper Mississippi River Basin Association
FY 2021 Profit & Loss Budget Overview
July 2020 through June 2021

	Jul '20 - Jun 21	Budget	$ Over Budget
Ordinary Income/Expense			
Income			
Contracts and Grants			
COE (UMRR)	57,538.75	97,650.75	-40,112.00
EPA (OPA)	130,529.07	150,000.00	-19,470.93
Interstate WQ Pilot	18,405.04	30,100.00	-11,694.96
Missouri DoC (WLM)	1,892.16	0.00	1,892.16
Total Contracts and Grants	208,365.02	277,750.75	-69,385.73
State Dues			
Illinois Dues	61,500.00	61,500.00	0.00
Iowa Dues	61,500.00	61,500.00	0.00
Minnesota Dues	46,125.00	61,500.00	-15,375.00
Missouri Dues	61,500.00	61,500.00	0.00
Wisconsin Dues	61,500.00	61,500.00	0.00
WQ Assessment	102,500.00	102,500.00	0.00
Total State Dues	394,625.00	410,000.00	-15,375.00
Other Income			
Travel Reimbursed Received	0.00	1.00	-1.00
Total Other Income	0.00	1.00	-1.00
Interest Income			
Short Term Interest			
Short Term (Checking)	87.97	0.00	87.97
Short Term (Savings)	294.48	60.00	234.48
Short Term (Sweep)	0.00	1.00	-1.00
Short Term (CD)	0.00	8,500.00	-8,500.00
Total Short Term Interest	382.45	8,561.00	-8,178.55
Total Interest Income	382.45	8,561.00	-8,178.55
Total Income	603,372.47	696,312.75	-92,940.28
Expense			
Gross Payroll			
Salary	321,838.51	330,743.00	-8,904.49
UMRBA Time Wages	2,168.36	2,000.00	168.36
OPA Wages	40,553.81	76,128.00	-35,574.19
Benefits	80,459.57	82,685.75	-2,226.18
Benefits UMRBA Time	79.95	200.00	-120.05
Benefits OPA	4,055.39	7,612.80	-3,557.41
Total Gross Payroll	449,155.59	499,369.55	-50,213.96
Payroll Expenses			
SocSec Company	27,646.16	30,960.91	-3,314.75
Medicare Company	6,701.86	7,240.86	-539.00
SUTA (Minnesota UC)	211.00	249.68	-38.68
Workforce Enhancement Fee	211.00	249.68	-38.68
Federal Loan Interest Assess	7.00	0.00	7.00
Total Payroll Expenses	34,777.02	38,701.13	-3,924.11
Travel	0.00	18,000.00	-18,000.00
Space Rental			
Office Rental	49,399.90	48,805.00	594.90
Total Space Rental	49,399.90	48,805.00	594.90

Upper Mississippi River Basin Association
FY 2021 Profit & Loss Budget Overview
July 2020 through June 2021

	Jul '20 - Jun 21	Budget	$ Over Budget
Reproduction			
Copy Service	860.20	1,360.00	-499.80
Printing	0.00	800.00	-800.00
Total Reproduction	860.20	2,160.00	-1,299.80
Meeting Expenses	350.00	20,000.00	-19,650.00
Supplies	1,668.42	4,000.00	-2,331.58
Equipment			
Equipment (Maint./Rental)	3,146.59	1,600.00	1,546.59
Total Equipment	3,146.59	1,600.00	1,546.59
Legal and Financial			
Insurance	5,739.94	6,200.00	-460.06
Legal and Tax Services	9,575.00	9,500.00	75.00
Bank Charges	188.83	10.00	178.83
Total Legal and Financial	15,503.77	15,710.00	-206.23
Telephone/Communications	17,008.71	6,500.00	10,508.71
Postage	30.95	1,200.00	-1,169.05
Other Services	6,045.00	7,000.00	-955.00
Publications	3,321.00	3,200.00	121.00
State Travel Reimbursement			
Illinois	0.00	5,000.00	-5,000.00
Iowa	0.00	5,000.00	-5,000.00
Minnesota	0.00	5,000.00	-5,000.00
Missouri	0.00	5,000.00	-5,000.00
Wisconsin	0.00	5,000.00	-5,000.00
State WQ Travel	0.00	3,500.00	-3,500.00
Total State Travel Reimbursement	0.00	28,500.00	-28,500.00
OPA Expenses			
Equipment OPA	0.00	1,000.00	-1,000.00
Equipment (Maint./Rental) OPA	3,955.19	6,500.00	-2,544.81
Travel OPA	0.00	2,800.00	-2,800.00
Other OPA	1,433.46	800.00	633.46
Total OPA Expenses	5,388.65	11,100.00	-5,711.35
Interstate WQ Expenses			
Travel Interstate WQ	0.00	800.00	-800.00
Data Collection/Analysis IntWQ	6,201.30	22,300.00	-16,098.70
Other Interstate WQ	798.41	550.00	248.41
Total Interstate WQ Expenses	6,999.71	23,650.00	-16,650.29
Total Expense	593,655.51	729,495.68	-135,840.17
Net Ordinary Income	9,716.96	-33,182.93	42,899.89
Net Income	**9,716.96**	**-33,182.93**	**42,899.89**

Upper Mississippi River Basin Association
Balance Sheet
As of June 30, 2021

	Jun 30, 21	
ASSETS		
Current Assets		
Checking/Savings		
Checking HT 2732		364,173.93
Savings HT 2575		37,151.16
Checking 1696		1.73
Savings 6935		0.72
Investment		
CD	402,481.23	
Total Investment		402,481.23
Total Checking/Savings		803,808.77
Accounts Receivable		
Contract/grants		
Invoiced/Billable	38,168.26	
Total Contract/grants		38,168.26
Total Accounts Receivable		38,168.26
Other Current Assets		
Prepaid Expense		
Office Rental Prepaid Expense	3,868.01	
Total Prepaid Expense		3,868.01
Total Other Current Assets		3,868.01
Total Current Assets		845,845.04
Fixed Assets		
Accum. Deprec. UMRBA		-32,192.05
Accum. Deprec. OPA		-21,535.72
Accum. Deprec. WQ		-1,290.00
Accum. Deprec. 604(b)		-568.95
Accum. Deprec. STC		-2,989.68
UMRBA Equipment		33,455.89
OPA Equipment		21,705.26
WQ Equipment		1,290.47
604(b) Equipment		568.95
STC Equipment		2,989.68
Total Fixed Assets		1,433.85
TOTAL ASSETS		**847,278.89**
LIABILITIES & EQUITY		
Liabilities		
Current Liabilities		
Credit Cards		
Visa Wells Fargo 0198		1,887.33
Total Credit Cards		1,887.33
Other Current Liabilities		
Deferred MO DoC (WLM) Revenue		5,107.84
Payroll Liabilities		
SUTA (Minnesota UC)	57.38	
Workforce Enhancement Fee	57.38	
Federal Loan Interest Assess	3.00	
Accrued Vacation	48,126.85	
Accrued Vacation FICA	3,681.70	
Total Payroll Liabilities		51,926.31
Total Other Current Liabilities		57,034.15
Total Current Liabilities		58,921.48
Total Liabilities		58,921.48
Equity		
Retained Earnings		778,640.45
Net Income		9,716.96
Total Equity		788,357.41
TOTAL LIABILITIES & EQUITY		**847,278.89**

Upper Mississippi River Basin Association
FY 2022 Profit & Loss Budget Overview
July 1-26, 2021

	Jul 1-26, 2021	Budget	$ Over Budget
Ordinary Income/Expense			
Income			
Contracts and Grants			
COE (UMRR)	0.00	91,242.82	-91,242.82
EPA (OPA)	0.00	150,000.00	-150,000.00
Interstate WQ Pilot	0.00	86,400.00	-86,400.00
WQ Trends Report	0.00	5,500.00	-5,500.00
Total Contracts and Grants	0.00	333,142.82	-333,142.82
State Dues			
Illinois Dues	0.00	61,500.00	-61,500.00
Iowa Dues	15,375.00	61,500.00	-46,125.00
Minnesota Dues	0.00	61,500.00	-61,500.00
Missouri Dues	0.00	61,500.00	-61,500.00
Wisconsin Dues	0.00	61,500.00	-61,500.00
WQ Assessment	0.00	102,500.00	-102,500.00
Total State Dues	15,375.00	410,000.00	-394,625.00
Interest Income			
Short Term Interest			
Short Term (Checking)	39.01	0.00	39.01
Short Term (Savings)	0.00	60.00	-60.00
Short Term (Sweep)	0.00	1.00	-1.00
Short Term (CD)	0.00	4,000.00	-4,000.00
Total Short Term Interest	39.01	4,061.00	-4,021.99
Total Interest Income	39.01	4,061.00	-4,021.99
Total Income	15,414.01	747,203.82	-731,789.81
Expense			
Gross Payroll			
Salary	25,747.06	337,357.86	-311,610.80
UMRBA Time Wages	2,876.25	12,000.00	-9,123.75
OPA Wages	3,105.60	76,128.00	-73,022.40
Benefits	6,436.77	84,339.47	-77,902.70
Benefits UMRBA Time	0.00	1,200.00	-1,200.00
Benefits OPA	310.56	7,612.80	-7,302.24
Total Gross Payroll	38,476.24	518,638.13	-480,161.89
Payroll Expenses			
SocSec Company	2,385.52	32,155.56	-29,770.04
Medicare Company	557.91	7,520.25	-6,962.34
SUTA (Minnesota UC)	6.86	259.32	-252.46
Workforce Enhancement Fee	6.86	259.32	-252.46
Total Payroll Expenses	2,957.15	40,194.45	-37,237.30
Travel	990.00	12,000.00	-11,010.00
Space Rental			
Office Rental	4,222.19	51,000.00	-46,777.81
Total Space Rental	4,222.19	51,000.00	-46,777.81

Upper Mississippi River Basin Association
FY 2022 Profit & Loss Budget Overview
July 1-26, 2021

	July 1-26, 2021	Budget	$ Over Budget
Reproduction			
Copy Service	161.29	1,360.00	-1,198.71
Printing	0.00	500.00	-500.00
Total Reproduction	161.29	1,860.00	-1,698.71
Meeting Expenses	26.00	15,000.00	-14,974.00
Supplies	60.20	3,000.00	-2,939.80
Equipment			
Equipment (Maint./Rental)	208.76	1,600.00	-1,391.24
Total Equipment	208.76	1,600.00	-1,391.24
Legal and Financial			
Insurance	3,073.00	6,200.00	-3,127.00
Legal and Tax Services	0.00	1,300.00	-1,300.00
Bank Charges	0.00	10.00	-10.00
Total Legal and Financial	3,073.00	7,510.00	-4,437.00
Telephone/Communications	7,797.55	6,500.00	1,297.55
Postage	0.00	1,200.00	-1,200.00
Other Services	3,500.00	7,000.00	-3,500.00
Publications	0.00	8,200.00	-8,200.00
State Travel Reimbursement			
Illinois	0.00	5,000.00	-5,000.00
Iowa	0.00	5,000.00	-5,000.00
Minnesota	0.00	5,000.00	-5,000.00
Missouri	0.00	5,000.00	-5,000.00
Wisconsin	0.00	5,000.00	-5,000.00
State WQ Travel	0.00	3,500.00	-3,500.00
Total State Travel Reimbursement	0.00	28,500.00	-28,500.00
OPA Expenses			
Equipment OPA	0.00	1,000.00	-1,000.00
Equipment (Maint./Rental) OPA	0.00	6,500.00	-6,500.00
Travel OPA	0.00	2,800.00	-2,800.00
Other OPA	0.00	800.00	-800.00
Total OPA Expenses	0.00	11,100.00	-11,100.00
Interstate WQ Expenses			
Travel Interstate WQ	0.00	500.00	-500.00
Data Collection/Analysis IntWQ	102.97	58,200.00	-58,097.03
Other Interstate WQ	14.87	1,000.00	-985.13
Total Interstate WQ Expenses	117.84	59,700.00	-59,582.16
Total Expense	61,590.22	773,002.58	-711,412.36
Net Ordinary Income	-46,176.21	-25,798.76	-20,377.45
Net Income	**-46,176.21**	**-25,798.76**	**-20,377.45**

Upper Mississippi River Basin Association
Balance Sheet
As of July 26, 2021

	Jul 26, 21	
ASSETS		
Current Assets		
Checking/Savings		
Checking HT 2732		317,381.49
Savings HT 2575		37,151.16
Checking 1696		1.73
Savings 6935		0.72
Investment		
CD	402,481.23	
Total Investment		402,481.23
Total Checking/Savings		757,016.33
Accounts Receivable		
Contract/grants		
Invoiced/Billable	38,168.26	
Total Contract/grants		38,168.26
Total Accounts Receivable		38,168.26
Other Current Assets		
Prepaid Expense		
Office Rental Prepaid Expense	3,868.01	
Total Prepaid Expense		3,868.01
Total Other Current Assets		3,868.01
Total Current Assets		799,052.60
Fixed Assets		
Accum. Deprec. UMRBA		-32,192.05
Accum. Deprec. OPA		-21,535.72
Accum. Deprec. WQ		-1,290.00
Accum. Deprec. 604(b)		-568.95
Accum. Deprec. STC		-2,989.68
UMRBA Equipment		33,455.89
OPA Equipment		21,705.26
WQ Equipment		1,290.47
604(b) Equipment		568.95
STC Equipment		2,989.68
Total Fixed Assets		1,433.85
TOTAL ASSETS		**800,486.45**
LIABILITIES & EQUITY		
Liabilities		
Current Liabilities		
Credit Cards		
Visa Chase 5294		1,174.26
Visa Wells Fargo 0198		270.12
Total Credit Cards		1,444.38
Other Current Liabilities		
Deferred MO DoC (WLM) Revenue		5,107.84
Payroll Liabilities		
SUTA (Minnesota UC)	-27.76	
Workforce Enhancement Fee	-27.76	
Accrued Vacation	48,126.85	
Accrued Vacation FICA	3,681.70	
Total Payroll Liabilities		51,753.03
Total Other Current Liabilities		56,860.87
Total Current Liabilities		58,305.25
Total Liabilities		58,305.25
Equity		
Retained Earnings		788,357.41
Net Income		-46,176.21
Total Equity		742,181.20
TOTAL LIABILITIES & EQUITY		**800,486.45**

ATTACHMENT C

Northern Midwest Drought

- **Midwest Drought Monitoring Map (7-20-2021)** *(C-1)*

  [Link to the midwest portion of the drought monitor map is available here: https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?midwest]

- **Illinois EPA Starved Rock HAB Occurrence News Release (6-17-2021)** *(C-2 to C-3)*

- **Wisconsin DNR Central Sands Lakes Study Executive Summary, Findings, and Recommendations (5-27-2021)** *(C-4 to C-9)*

  [Link to full report is available here: https://widnr.widen.net/view/pdf/kmlotz3hmk/DG_CSLS_DRAFT_Findings_Report_2021.pdf?t.download=true&u=kfkpym]

  [Link to recorded presentation of the findings and recommendations is available here: https://widnr.widen.net/view/video/aka5svaemi/DG_Central_Sands_Lakes_Study_Decision_Overview?u=kfkpym

- **NIDIS Tribal Drought Engagement Strategy 2021-2025 Key Outcomes and Activities** *(C-10 to C-18)*

  [Link to full report is available here: https://www.drought.gov/sites/default/files/2020-11/NIDIS-Tribal-Engagement-Strategy-2021-2025.pdf

- **Drought Impacts on Arsenic Exposure in Private Wells Press Release (3/18/2021)** *(C-19 to C-22)*

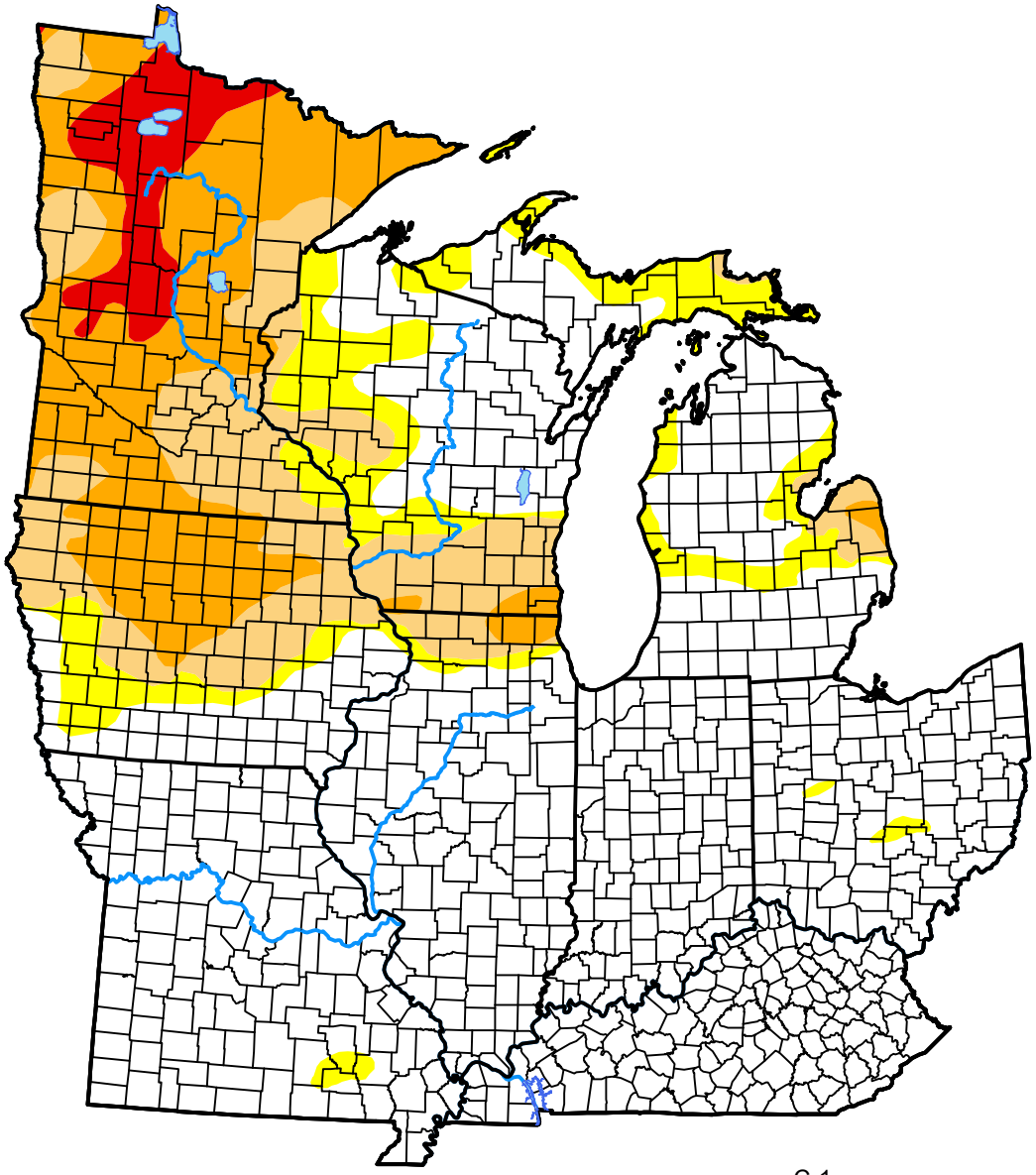
U.S. Drought Monitor

Midwest

July 20, 2021

(Released Thursday, Jul. 22, 2021)

Valid 8 a.m. EDT



Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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:

Brad Rippey
U.S. Department of Agriculture

droughtmonitor.unl.edu

NEWS RELEASE

FOR IMMEDIATE RELEASE
June 17, 2021

CONTACT:
Kim Biggs (IEPA) – 217-558-1536

Illinois Officials Confirm Algal Bloom on Portions of the Illinois River

Residents should use caution when recreating and be aware of blue-green algae

SPRINGFIELD – Following sampling on the Illinois River, Illinois officials have confirmed the presence of the algal toxin, microcystin, above the 8 parts per billion (ppb) health advisory established by U.S. Environmental Protection Agency. The Illinois Environmental Protection Agency collected samples on June 10 along the northern bank of the Illinois River at the Starved Rock Lock & Dam (Illinois River mile 231.1). The Illinois EPA's laboratory confirmed the microcystin level in the sample at 95.4 ppb, well above the health advisory limit. Illinois EPA proactively sampled again on June 16 for microcystin and awaits the results of the resampling event.

Algal toxins (e.g., microcystin and cylindrospermopsin), sometimes produced by blue-green algae, can cause sickness or other adverse health effects in people and pets, depending on the amount and type of exposure. Illinois EPA also tested for cylindrospermopsin, anatoxin, and saxitoxin but did not detect their presence near any level of concern.

The very young, elderly, and people with compromised immune systems are most at risk of illness if exposed to algal toxins. Adverse health effects attributable to algal toxins can occur from direct skin contact, swallowing contaminated water, or inhaling water droplets in the air. Symptoms of exposure include rashes, hives, diarrhea, vomiting, coughing or wheezing. More severe symptoms may result from longer or greater amounts of exposure.

If you are concerned you have symptoms that are a result of exposure to algal toxins, contact your health care provider or call the Illinois Poison Center at 1-800-222-1222. If your pet experiences symptoms that may be a result of exposure, contact your veterinarian immediately.

Residents who plan to recreate in, on, or near Illinois rivers, lakes or streams are advised to avoid contact with water that:

- looks like spilled, green or blue-green paint
- has surface scums, mats, or films
- is discolored or has green-colored streaks
- has greenish globs suspended in the water below the surface

Do not let pets drink from or swim in water with any of the above characteristics.

- more -

If you or your pet have come into contact with water you suspect may have a bloom of blue-green algae, rinse off with clean, fresh water as soon as possible. Do not let pets lick scum from their fur. With all activities that may involve contact with lake or stream water, wash your hands before eating.

For additional information about harmful algal blooms, please visit:

Illinois EPA:
https://www2.illinois.gov/epa/topics/water-quality/monitoring/algal-bloom/Pages/default.aspx

Illinois Department of Public Health:
http://www.dph.illinois.gov/topics-services/environmental-health-protection/toxicology/habs

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EXECUTIVE SUMMARY

Over the past 60 years, we have observed low water levels in lakes and streams in Wisconsin's Central Sands Region. Various researchers have studied the relationship between land use and impacts to water resources in the Central Sands Region. Their work has shown that the two main causes of water level changes are weather and the pumping of high capacity wells. Weather varies considerably from place to place and from year to year. The number of high capacity wells in the Central Sands Region have increased over the past few decades, which has raised concerns about pumping of groundwater and the impacts on water levels.

In response to these concerns, the Wisconsin Department of Natural Resources (DNR) evaluated and modeled Pleasant, Long, and Plainfield Lakes in Waushara County to determine whether groundwater withdrawals cause a significant reduction in lake levels below their average seasonal levels, as directed by the Wisconsin State Legislature, specifically Wis. Stat. § 281.34(7m) (2017 Wisconsin Act 10). This report describes the findings of the Central Sands Lakes Study (the study) and recommends a broad plan to address impacts to the three lakes and other water resources in the Central Sands Region.

To determine whether groundwater withdrawals cause a significant reduction in lake levels below their average seasonal levels, the DNR developed two main study questions. The DNR's first study question was: *Do groundwater withdrawals affect lake levels at Pleasant, Long, and Plainfield Lakes?* To answer this question, the DNR collaborated with state and federal agencies, and the University of Wisconsin System to characterize the geology of the study area and construct a state-of-the-art groundwater flow model.

The DNR's second study question was: *Is this reduction significant to the lakes' ecosystems?* The DNR defined "average seasonal level" to be the range of high, median and low lake levels and "significant reduction" as a deviation from this natural range strong enough to cause a significant impact or change to the ecosystem and/or human use of the study lakes.

Our findings confirmed that the study lakes and other surface water resources in the Central Sands Region are well connected to groundwater. We focused our study on high capacity wells that pump water for irrigated agriculture, since 95-99% of the groundwater withdrawals in the near-lake modeling area were used for irrigated agriculture. Our model results indicate that current groundwater withdrawals from irrigated agricultural reduce lake levels in Pleasant, Long, and Plainfield Lakes. Current-irrigated agriculture has caused a significant reduction in lake levels resulting in impacts to human uses (e.g., boating), fish, plants, and chemistry on Long Lake and human uses and plants on Plainfield Lake. We labeled Pleasant Lake as "caution" because estimated lake level reductions may impact lake stratification, yet the reductions are within model uncertainty (Figure 1). Furthermore, we found lake level reductions from potential-agricultural-irrigation scenarios could cause impacts on dock usage on Pleasant Lake.

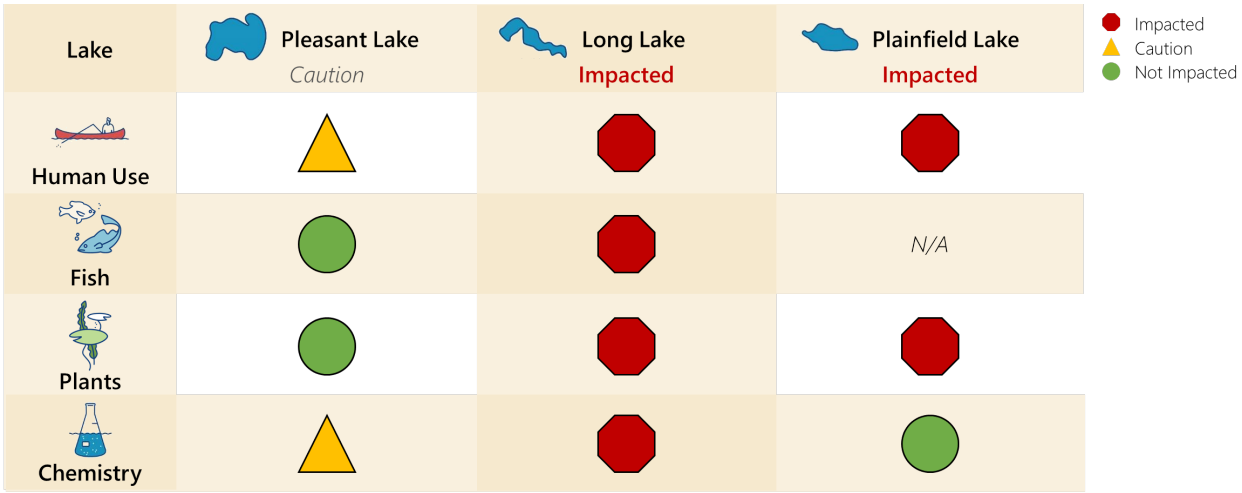


Figure 1 Signs indicate significant reductions in lake levels and ecosystem impacts to Pleasant, Long and Plainfield Lakes.

This study helped us to understand the factors that control the impact of high capacity wells on the study lakes including: distance of high capacity wells from the lakes, pumping rates, landscape position, lake depth, and lake shape. Our results quantify the relative roles of weather and groundwater withdrawals on recharge relative to the groundwater system and lake levels in the Central Sands Region. We found that precipitation is the primary factor affecting lake level fluctuations. We also found that smaller, but persistent reductions of lake levels are attributable to the collective, far-reaching effects of high capacity well pumping.

The DNR determined that the number of high capacity wells responsible for significant reductions of water levels are so numerous that site-specific management measures often considered for water resource protection are likely to be prohibitive. Therefore, the DNR does not recommend site-specific special measures. Instead, the DNR recommends a comprehensive Central Sands regional approach through the creation of a water use district. This recommendation for a collaborative, stakeholder-driven model does not involve immediate water use management changes that warrant an economic analysis. However, the DNR believes additional groundwork is needed to further water use management on a regional scale.

Other states have successfully applied regional water use management through a water use district approach. While leadership from state and regional agencies is necessary, identification and implementation of best practices need to originate from local stakeholders. Stakeholders could select best practices such as water trading, water allocations, conservation, and efficiency measures.

FINDINGS

Our study results are based on a substantial field data collection effort that improved our understanding of the hydrostratigraphy, hydrology, and ecology of the Central Sands. We applied that information to the groundwater flow model and characterization of the three lakes. We summarized the major findings of the study below.

- The geology in the region is mostly sand, with some intermittent clay, especially near Long Lake. These fine sediments do not create a confining unit separating portions of the sand and gravel aquifer.
- All three study lakes are well-connected to groundwater.
- Over 95% of the groundwater withdrawals in the study area are from irrigated agriculture.
- Water levels on these three lakes naturally rise and fall due to changes in weather more dramatically than other lakes largely because they are higher in the landscape and not connected to streams.
- The DNR defined "average seasonal water levels" to mean the range of high, median, and low lake levels that occur on the study lakes.
- The DNR defined "significant reduction" to mean a change from the natural pattern of lake level variations that is a large enough change to cause a significant impact or change to the lakes' ecosystems.
- The amount of groundwater recharge is a key driver of groundwater levels in the Central Sands. Our study found:
    - Precipitation has the largest effect on recharge, with more recharge in wetter years and less recharge in drier years.
    - Land use has a smaller, but persistent, impact on recharge.
    - Long-term differences between irrigated agricultural effective recharge and non-agricultural recharge are comparatively small. We observe larger differences in recharge in years with dry summers, when more water is pumped for irrigated agriculture.
- Precipitation is an important driver of the study lakes' levels and groundwater levels.
- Our groundwater modeling results indicate current-irrigated agriculture causes lake level reductions across the range of lake levels, but by a different amount on each lake. For example:
    - On Pleasant Lake, median levels drop 0.4 feet.
    - On Long Lake, median levels drop 3.3 feet.
    - On Plainfield Lake, median levels drop 2.3 feet.
- Our groundwater modeling results indicate potential-irrigated agriculture causes lake level reductions across the range of lake levels, but by a different amount on each lake. For example:
    - On Pleasant Lake, median levels drop an additional 0.3 feet.
    - On Long Lake, median levels drop an additional 0.5 feet.
    - On Plainfield Lake, median levels drop an additional 0.4 feet.
- On Pleasant Lake, current groundwater withdrawals do not cause a significant reduction in lake levels, but caution is warranted because low lake levels are very close to the significance thresholds. Furthermore, potential irrigation withdrawals may intensify impacts on human uses (dock usage).
- On Long Lake, current groundwater withdrawals cause a significant reduction in lake levels, resulting in impacts to human uses, fish, plants and lake chemistry. Potential groundwater withdrawals intensify these impacts and cause Long Lake to go dry >10% of the time.
- On Plainfield Lake, current groundwater withdrawals cause a significant reduction, resulting in impacts to the plant community, including a federally-threatened and state-endangered plant species, as well as human uses. Potential groundwater withdrawals intensify these impacts.
- The two main factors that affect how much influence wells have on the study lake levels, are the distance of the wells from the lake, and the pumping rates of the wells.
- To entirely remedy significant reductions in lake levels at Long and Plainfield Lakes, about 200 irrigation wells within 5 miles of the lakes would need to be shut off.

- The lag time between the groundwater withdrawals and the study lake level response varies greatly based on distance (see Scenario 5 in Appendix C), so it would be difficult to determine a specific lake level or elevation that would trigger management actions.
- The modeled area used to evaluate the study lakes included other nearby water resources including streams, lakes, and springs. Our preliminary results indicate that nearby streams are depleted by 20% or more due to groundwater withdrawals.

DNR RECOMMENDATIONS

This report describes the DNR's evaluation and modeling of the impacts of groundwater withdrawals from irrigated agriculture to the three study lakes' ecological and human uses. We provide well-documented scientific evidence that the water levels in Long and Plainfield Lakes are significantly reduced below average seasonal levels due to existing groundwater withdrawals, and water levels in Pleasant Lake have the potential to become significantly reduced. We share a key finding that the significant impacts to Long Lake are not caused by any one single well, but rather by the collective impacts from about 200 wells within about 5 miles or about 100 square miles. This area also includes the groundwater withdrawals that cause impacts to Plainfield Lake. Due to the lag time between pumping and lake level declines varying by distance from the well, identifying a specific lake level or elevation that would trigger management actions would not be practical.

The impact and the complexity of the issue only increases when we consider that there are 19 additional lakes and 3 streams within the vicinity of Long Lake, many of which are likely to be impacted by some of the same high capacity wells. This overlap of impacts becomes more complex when we consider that there are 3,100 high-capacity wells, over 300 lakes and many thousands of stream miles in the Central Sands Region.

For these reasons, the DNR is not recommending special measures that would address site-specific management measures. Rather, the DNR recommends addressing the impacts to all impacted water resources across the Central Sands Region by creating a mechanism for regional management to address the complicated problem of many wells impacting many water resources from substantial distances. The DNR will identify impacted resources, and we envision a flexible, economically reasonable and science-based approach to implementing groundwater withdrawal management strategies in the entire Central Sands Region.

Collectively Managing Water Use in the Central Sands

The DNR recommends water use management on a regional scale through the creation and implementation of a water use district for the entire Central Sands Region, defined as the contiguous area east of the Wisconsin River with sand and gravel deposits equal to or greater than 50 feet deep. The DNR would continue to work within its authority to review high capacity well applications and assist in targeting groundwater reductions to reduce impacts to impacted resources within the water use district. The DNR would also work with the water use district to balance conservation goals with economic concerns by providing technical and policy assistance.

Within the Central Sands Region, there are areas of greater and lesser concern over withdrawals, water levels, and significant impacts to surface waters. With further refinements to the groundwater flow model used for this study, the DNR would identify impacted water resources and set significant impact thresholds for waters that have not been assessed. The water use district could then develop strategies for efficient water use and impact reduction, identify and empower landowners whose withdrawals impact water resources to plan and implement measures to reduce water use near impacted resources.

The benefits of a water use district include:

- Having a structure to manage water use and related impacts to water resources in the Central Sands Region.
- District oversight and coordination of regional water use management to balance conservation and economic objectives.
- Including representation and planning input from local stakeholder groups such as: high capacity well owners, landowners, county land and water representatives, lake districts, natural resource groups and DNR.

Water use district roles in this regional framework could include:

- Developing strategies for efficient water use and impact reduction within areas nearby impacted waterbodies
- Identifying and empowering landowners whose withdrawals impact water resources to engage with each other to plan and implement measures to reduce water use near impacted resources
- Providing facilitation for analyses and modeling support
- Tracking management measures and progress toward water use goals
- Operating on a regular planning and implementation cycle (e.g. 5-year cycle)
- Providing regular updates to DNR

DNR's roles in this regional framework would include:

- Setting ecological thresholds and significance targets to protect water resources
- Providing technical support, through updates to the groundwater flow model
- Assisting the water use district in identifying management measures and reviewing management plans
- Collecting monitoring data including groundwater levels, lake levels, stream flow, evapotranspiration, and precipitation
- Implementing measures through high capacity well regulatory program as legal authority allows

Water Use Plans

Under regional coordination from the water use district, water users could develop water use plans to establish implementation goals to meet significance thresholds. Potential management mechanisms include:

- Installing totalizing flow meters for more accurate water use reporting
- Reducing water use voluntarily
- Withdrawal allocations with water or irrigated-land banking or water trading
- Water use reductions based on zones or distance from impacted resources
- Incentive structures for implementing water conservation and efficiency measures, such as irrigation scheduling and other more efficient irrigation processes
- Land retirement
- Per-property withdrawal limits

The regional approach to water use management recommended here is consistent with what we found in our Groundwater Quantity Programs Summary (Appendix G) of other states with programs that manage groundwater withdrawals with respect to surface water resources. Many of these states have implemented similar programs with all or some of the management measures proposed above.

Our recommendation requires additional monitoring, modeling, analysis, and research to implement the water use district. We recommend continued support for these efforts and describe them in the following section.

We recognize that implementing some of the suggested practices above may not eliminate the significant impacts from groundwater withdrawals on Long and Plainfield Lakes, but they may help it. For example, our modeled results indicate that even a 1.0-ft. increase of the median level at Long Lake would double the lake volume and improve the fishery, even though significance thresholds would still not be met.

Next Implementation Steps

This section identifies additional work needed to support the management of groundwater withdrawals in the Central Sands Region. We have many of the needed tools in place, but these tools require support for maintenance, refinement, and in some cases, research to improve methods.

This study used state-of-the-art groundwater flow modeling techniques and processes. These processes will continue to advance so the model we used for this study should be kept current. Part of that maintenance involves the DNR or the

USGS conducting periodic re-recalibration using additional field data including high-quality pumping rates, precipitation rates, evapotranspiration rates, and water levels.

We also need to refine the groundwater flow model to identify impacted areas, consider ecologic thresholds, and evaluate management measures and progress towards goals for water resources beyond the three study lakes, since results from other studies and our own analyses indicate that many streams are likely impacted by groundwater withdrawals. The groundwater flow model that we developed for the study is the appropriate tool to simulate these impacts but will require refinement and recalibration to do so accurately in the entire Central Sands Region.

With some further development, the process we used as part of this study to evaluate the impacts of reduced water levels on lakes can be applied to other seepage lakes within the Central Sands. By using the tools and lessons learned in this study, we can streamline methods for future lake evaluations. We can base a simple, first-cut approach on bathymetric maps and could conduct fish, plant, and human use surveys to tailor specific ecosystem indicators for other seepage lakes. We can also use this process for evaluating management options aimed at improving conditions on lakes impacted by groundwater withdrawals.

Additionally, we suggest more research on collecting and interpreting groundwater recharge and evapotranspiration data to continue to improve our models and knowledge of the groundwater system in the Central Sands, since recharge and evapotranspiration's temporal and spatial distribution are complex and hard to quantify.

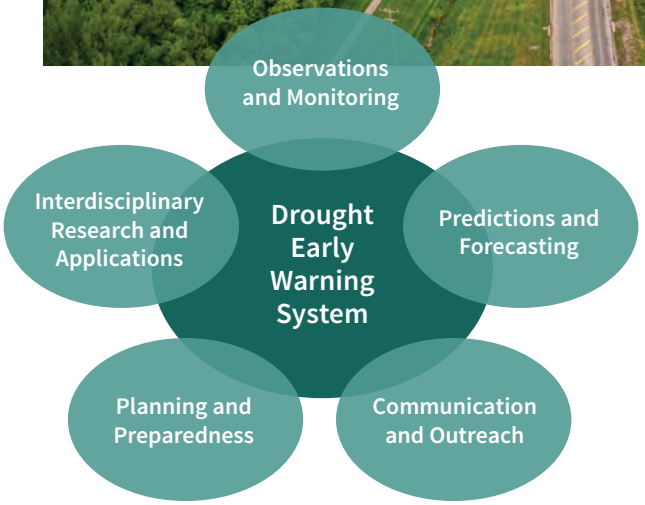
Finally, we recommend more research on more efficient irrigation processes that can be used to reduce irrigation demand, withdrawals, and therefore, impacts to water resources.

OUTREACH

Over 30 scientists from various agencies (DNR, USGS, WGNHS, and UW) worked on the Central Sands Lakes Study. This study occurred during the COVID-19 pandemic and we found inventive ways to work with our partners and communicate in ways where traditional means (face-to-face and public meetings) were unavailable. We provided the best available science to the public at regular intervals throughout the study. DNR's outreach activities associated with this project included:

- Updating our website throughout the study period and creating a GovDelivery listserv for interested citizens
- Developing a Scope of Work that outlined our study purpose and scope for our partners
- Developing a Fact Sheet related to the study purpose
- Creating a unique email address dedicated to answer CSLS questions from the public
- Meetings with County Staff during project kick-off
- Monthly project management meetings with study partners
- Providing six-month updates (one page PDFs) from 2017 and 2020 to interested parties (posted on our website)
- Presenting to various organizations, agencies and interested parties upon request (over 35 presentations in the past 4 years)
- Developing methodology presentations with our partners in October 2020 with a 30-day public comment opportunity.
- Receiving 177 lake resident surveys from Pleasant and Long Lakes (177 received, approximately 60% response rate) and incorporating uses into our study.
- Receiving and responding to over 70 sets of comments during a public comment period from April 6 to May 7, 2021.
- Hosting a public hearing for oral comments on the *Draft Findings and Recommendations Report* on April 28, 2021.
- Developing a final presentation on the DNR Central Sands Lakes Study findings and recommendations.

Winnebago tribe in Nebraska. Credit: Jacob Boomsma



KEY OUTCOMES AND ACTIVITIES

The Key Outcomes and Activities are potential tribal engagement activities for NIDIS to implement in 2021 and beyond, organized around the five components of a DEWS (*Figure 4*). It is not a prescribed list; rather, it is a flexible menu of options that NIDIS and partners can use to strengthen engagement with tribal communities.

▲ Figure 4: The components of a Drought Early Warning System (DEWS). An early warning system is the provision of timely and effective information that allows individuals exposed to a hazard to take action to avoid or reduce their risk. Credit: NOAA NIDIS, Fiona Martin

This Strategy is considered a living document and through meetings and further consultation with our tribal partners, priority activities will be selected, actions can be added, and the plan may be adjusted to address emerging issues as needed. After five years, an evaluation should be undertaken to determine progress and a more robust process should be considered to update the priorities and activities. Activities that include an asterisk (*) next to them denote those that came up in conversations repeatedly and should be considered for early implementation.

Finally, this Strategy was developed in collaboration with many tribal natural resource managers and networks, federal agencies, and regional organizations. Through continued coordination, we can work together to meet many of the needs voiced during this process.

INTERDISCIPLINARY RESEARCH AND APPLICATIONS

In order to better predict, understand, and respond to drought, the characteristics and impacts of drought must first be properly understood. In the case of many tribal nations, this knowledge exists, but has not yet been documented. Integrating the results of drought research into tribal decision-making is needed.

A key concern raised by tribal resource managers is that there is too much information out there, indicators of drought are often complex, and they don't always represent the conditions on the ground. In this regard, NIDIS and partners have an opportunity to improve understanding of drought indicators, their appropriate uses, and strengths and weaknesses. This will help tribal resource managers select the best indicators for their location.

OUTCOME 1.1

Tribal Nations have an improved understanding and application of drought indicators and drought early warning on the reservations.

Activity 1.1a: Work with tribal resource managers to improve awareness of key drought indicators, their benefits, reliability, and how to use them.

Activity 1.1b: NIDIS, tribal resource managers, and tribal colleges and universities (TCUs) partner to carry out drought-impact mapping exercises. This information is then digitally mapped by TCU students using geographic information system (GIS) technology.

OUTCOME 1.2

Drought research and knowledge is documented by tribal nations and used to strengthen drought early warning and response.

Activity 1.2a: NIDIS and partners will work with tribal resource managers and other partners to document the most prominent drought impacts and communicate them to drive mitigation actions in the tribal community.

Activity 1.2b: NIDIS and partners will ensure that these documented impacts are included in relevant external communication materials for tribal citizens (including the *U.S. Drought Portal*, etc.)

OUTCOME 1.3

Reservation-specific drought mitigation actions are better understood and resilience is improved.

Activity 1.3a*: Through meetings, workshops, and leveraging other NIDIS drought mitigation research, tribal resource managers gain a better understanding of the causes of drought and the most cost-effective mitigation actions. Secondary impacts will also be addressed (e.g., wildfires, soil degradation, etc.).

▲ **Corn leaves rolling and drying in drought conditions. Credit: The Natures**

OUTCOME 1.4

NIDIS has an improved understanding of tribal drought risk.

Activity 1.4a: NIDIS works with tribal partners to compile additional data to strengthen the existing tribal Drought Exposure Analysis and improve our collective understanding of drought resilience on tribal lands (e.g., expanding the analysis to include drought incidence over the past 40 years and to include household water supply access).

Activity 1.4b*: NIDIS and partners use this information when developing drought-resilience resources in a way that maximizes impact for tribal nations who are the most exposed to drought.

FLATHEAD RESERVATION
TRIBAL DROUGHT SNAPSHOT

Acknowledgement of Tribal Sovereignty

The National Oceanic and Atmospheric Administration (NOAA) and NIDIS (National Integrated Drought Information System) acknowledge the existence of tribal nations as sovereign states, and their citizens as rights-holders.

1. INTRODUCTION

Flathead Reservation is located in western Montana on the Flathead River. The Reservation is home to the Bitterroot Salish, Kootenai, and Pend d'Oreilles tribes, also known as the Confederated Salish and Kootenai Tribes of the Flathead Nation.[1]

The Reservation was created in 1855 under the Treaty of Hellgate. Today, the Reservation has land in four Montana counties and has ownership of most of Flathead Lake.[2]

View of the Flathead Range, Montana © News Maven

The Tribes have expressed a strong desire to maintain the integrity of their streams and the high quality of Flathead Lake, the largest natural freshwater lake in the western United States. Common pollutants currently threaten the quality of these waters. The Tribes' have established a Water Quality Standards Program to preserve the high quality waters and restore those that have been degraded.[4]

In 2017, the CSK Tribes negotiated a water rights settlement with the State of Montana. This settlement included a compact quantifying the

Flathead Reservation in Montana

Tribes	Bitterroot Salish, Kootenai, and Pend d'Oreilles tribes (also known as the Confederated Salish and Kootenai Tribes of the Flathead Nation)
Counties	Lake, Sanders, Missoula, and Flathead
Established	1855
Headquarters	Pablo, Montana
Area	1,938 square miles
Population Size	29,218
Population Density	15 (per sq mile)
Annual Precipitation	15.5 inches (historical annual totals range from 8.8 [1976] to 22.8 inches [2010])[5]
Main Surface and/or Groundwater Source	Flathead Lake
Website	http://www.sacandfoxks.com

A collaboration between:

▲ **Figure 5: Front page of one of the *Tribal Drought Snapshots* created in 2019. Credit: NOAA NIDIS**

PREDICTION AND FORECASTING

While many of the improvements in forecasting can and should take place at the federal level, tribal nations also play a vital role in ensuring effective utilization of this information for drought preparedness and mitigation activities. However, staffing constraints and competing priorities often mean that tribal nations face challenges in applying predictions and forecasts for drought in a timely manner.

OUTCOME 2.1

Tribal citizens have an improved understanding of short and medium–term forecasts and outlooks, allowing tribal resource managers to easily locate the data and information which is relevant to them.

Activity. 2.1a: NIDIS and partners will improve their communication of existing forecasting by making it more relevant to tribal audiences and improving the communication of uncertainties.

Activity 2.1b*: The NIDIS website is updated and simplified. The new Tribal Drought pages on the US Drought Portal will include reservation-specific drought data where possible, and this information is effectively shared with tribal partners.

Activity 2.1c*: NIDIS and partners work with tribal resource managers to translate the probabilities of future drought events into messages relevant to tribes to inform long-term planning.

Activity 2.1d: NIDIS works with partners (e.g., NDMC, HPRCC) to include the National Weather Service in tribal workshops and trainings, in order to provide forecasting guidance and answer questions.

OUTCOME 2.2

Tribal nations have an improved understanding of long-term drought predictions and scenarios, allowing tribal resource managers to implement long-term drought resilience planning.

Activity 2.2a: Ensure long-term drought prediction information (e.g., data from the *National Climate Assessment*, *Climate Explorer* tool, and *Climate Resilience Toolkit*) are shared with tribal citizens, both in-person and through online resources.

Activity 2.2b*: Continue to develop reservation-specific drought snapshots with tribal nations. Tribal Drought Snapshots were developed with 20 tribes across the two regions during the 2019 NIDIS Tribal Engagement Project. These snapshots were created for the tribes, and included drought trends and impacts, key drought indicators, outlook information, and key partners and future engagement opportunities for the tribes (*Figure 5*).

◀ A mesonet station installed above Cooney Reservoir in Stillwater County, Montana. Credit: Kevin Hyde

OBSERVATIONS AND MONITORING

One of the major gaps identified during consultations with tribal resource managers is the lack of reservation-specific drought observation data. Many tribal nations rely on regional data, which is often collected more than a hundred miles away and is not always relevant to the reservation. More localized weather stations, stream gauges, and soil moisture measurements will be vital to ensure reliable observation and monitoring of drought on reservations. The effective maintenance of stations and gauges will be important in order to ensure long-term sustainability of the network and data.

OUTCOME 3.1

Tribal resource managers play a leading role in strengthening existing monitoring networks and drought planning across the Missouri River Basin and Midwest.

Activity 3.1a*: NIDIS and regional partners (e.g., Regional Climate Centers, NDMC, etc.) work with tribal resource managers to determine the most relevant drought indicators/indices for each region. Such indicators could include TEK, if determined appropriate by tribal partners.

Activity 3.1b*: NIDIS and partners will ensure that the indices selected by tribal nations are included in regional monitoring tools and platforms including Tribal Decision Dashboards such as the *Wind River Decision Dashboard* and the *Rosebud Sioux Tribe Decision Dashboard*, and the *US Drought Portal*.

Activity 3.1c: NIDIS and partners (e.g., HPRCC and NDMC) facilitate and support tribal nations to provide input into the *United States Drought Monitor* (USDM), a weekly product showing parts of the U.S. that are in drought. This could include establishing citizen monitoring and partnerships with the TCUs to engage tribal youth in data and drought impact collection.

OUTCOME 3.2

Tribal nations receive regional observation and monitoring data in a timely manner, allowing them to respond to the expected impacts accordingly.

Activity 3.2a*: Tribal resource managers are added to the appropriate DEWS mailing lists

and provided with timely regional drought alerts through the *US Drought Portal*.

Activity 3.2b*: NIDIS and partners will work with tribal resource managers to integrate tribal information and impacts into the monthly *North Central U.S. Climate and Drought* webinars. This includes ensuring tribal partners are included on email planning lists and cultivating their active involvement in webinar planning. As tribal resource managers join this community, ensure their perspectives are elevated and webinar content is culturally relevant and inclusive of tribal interests.

OUTCOME 3.3

NIDIS works with tribal resource managers to map monitoring stations on reservations and provides support on how to address the identified station gaps in the network.

Activity 3.3a*: NIDIS and HPRCC will work with tribal resource managers to document gaps in reservation-level monitoring data, including challenges that arise from long-term maintenance of stations and data processing and dissemination.

Activity 3.3b*: NIDIS, working with partners, assists the tribal resource managers to identify potential funding support to establish new weather stations on their reservations, particularly for those reservations with the least monitoring capacity. This could include leveraging support from other ongoing initiatives (e.g., the *NWS Cooperative Observer Network*, National Coordinated Soil Moisture Monitoring Network, *Community Collaborative Rain Hail and Snow Network* (CoCoRaHS), *Tribal Soil Climate Analysis Network* (Tribal SCAN).

Activity 3.3c*: NIDIS will work to establish partnerships with the TCUs to deploy and maintain weather stations on tribal lands. This can include work to assist tribal communities in using data, data management, and the development of data policies that support their work.

▶ Lana Recountre helps take care of plants growing at South Dakota's Sisseton Wahpeton Oyate tribe headquarters. Tribal members can pick up plants for free. Credit: Kayla Gahagan, YES! Magazine

PLANNING AND PREPAREDNESS

Over the past few years, tribal nations have made significant advances in their drought planning activities. Many tribal nations have now developed drought (or climate change) risk assessments and/or action plans. However, despite this planning, many tribal resource managers have expressed frustration that this has not always translated into action on the ground. A major reason for this has been the lack of adequate funding for implementation of drought resilience activities and the competing priorities of other emergencies such as flooding.

OUTCOME 4.1

Key tribal drought exposures and resilience across the region are better understood and NIDIS prioritizes engagement with tribal nations accordingly.

Activity 4.1a*: NIDIS facilitates the sharing of successful drought vulnerability assessments, planning and response guidance amongst

tribal nations, with their permission. This guidance will include examples of results from each stage of the planning process.

Activity 4.1b*: NIDIS, in collaboration with partners, provides elevated technical support during periods of drought to impacted tribal nations.

OUTCOME 4.2

Drought mitigation and adaptation actions and approaches are better understood and implemented by tribal resource managers across the two regions.

Activity 4.2a: NIDIS and partners work with tribal resource managers to explore more relevant, bottom-up planning options for drought, creating relevant, more flexible planning tools for the tribal nations. This could include developing online resources such as flow diagrams or decision trees to help guide communities in planning for and responding to drought.

Activity 4.2b: NIDIS and partners work with tribal resource managers to jointly document drought resilience case studies, using online platforms and networks to share these experiences (with their permission) with other tribal nations in the region.

Activity 4.2c: NIDIS facilitates and finances state-to-state tribal exchange opportunities across the two regions, providing opportunities for tribal nations to share their experience (with their permission) and expertise in drought planning with other tribal nations.

OUTCOME 4.3

NIDIS provides technical support for tribal nations with significant drought exposure and financial need.

Activity 4.3a: NIDIS works with tribal nations to review drought plans and identify key funding opportunities for resilience activities.

Activity 4.3b*: NIDIS and partners provide technical support to those tribal nations who have yet to develop drought vulnerability assessments and action planning.

Activity 4.3c*: NIDIS and partners help identify grant writing resources for tribal nations. One idea could be a partnership between NIDIS and other federal agencies (including BIA) to develop and organize regional grant writing capacity building workshops for tribal nations.

Activity 4.3e: NIDIS explores options to provide grants to those tribal nations seeking to build drought early warning and resilience capacity. This could include coordinating with other federal agencies (e.g., Environmental Protection Agency, BIA) to see how grants can be used to improve funding equity.

▲ **Cattle on Ft. Belknap Range unit. July 2012. Blaine, MT. Credit: USDA NRCS Montana**

OUTCOME 4.4

Ecosystem health across the two regions is improved through restoration efforts.

Activity 4.4a*: NIDIS and partners work with tribal resource managers to develop guidance on the restoration of the water cycle and associated storage, integrating TEK where appropriate. This guidance will be shared via workshops, networks, and online platforms (e.g., the *US Drought Portal*).

Activity 4.4b: NIDIS works with partners to share options with tribal resource managers for restoring soil health, based on the work of the Natural Resource Conservation Service

▶ A youth gardening project yields giant zucchini on Standing Rock Reservation. Credit: Cheyenne River Youth Project

and others, and shares success stories (e.g., through joint workshops, *US Drought Portal*, learning networks, peer-to-peer exchanges).

▲ Two Oglala tribe members drive through Pine Ridge Indian Reservation in South Dakota. Credit: Sopotnicki/ shutterstock.com

Activity 4.4c*: NIDIS facilitates a learning network to bring together tribal nations to communicate successes and lessons learned. This would be part of a larger concept of learning networks across regional DEWS, but would ensure a place for tribal nations to share with one another if they would like to do so.

Activity 4.4d: NIDIS and partners will provide technical guidance to tribal nations on how to implement low cost, high-impact ecological system restoration activities, coordinating with other federal agencies (e.g., Federal Emergency Management Agency, EPA and Bureau of Land Management) to build on programs already in place.

COMMUNICATIONS AND OUTREACH

Since its establishment in 2006, NIDIS has engaged in communication and outreach activities with tribal nations. NIDIS intends to build on and strengthen these partnerships, particularly to ensure that tribal nations are integral partners in the implementation of NIDIS.

Tribal resource managers have expressed that engaging young people on water and climate-related issues is a priority for them. In addition, NIDIS recognizes that tribal resource managers seek materials that are oriented to tribal communities. Communication and outreach materials and efforts are not one-size-fits-all and need to be tailored to address tribal concerns.

OUTCOME 5.1

An authentic, meaningful government-to-government engagement is achieved when tribal resource managers play a lead role at the decision-making table on all drought-related decisions that affect them.

Activity 5.1a*: Tribal resource managers are invited to drought-related planning and response meetings and their status as sovereign nations is recognized and respected.

Activity 5.1b*: NIDIS works with tribal resource managers to develop mechanisms to ensure authentic representation within NIDIS and the DEWS, which could include creating additional pathways for incorporating tribal perspectives into the NIDIS consultation process.

Activity 5.1c*: NIDIS ensures tribal representatives are engaged in a process to provide input into the planning and drafting of all key NIDIS strategies and documents which affect tribal nations.

Activity 5.1d*: NIDIS continues to work with tribal members to further strengthen NIDIS outreach and consultation activities.

OUTCOME 5.2

Drought response capacity among tribal nations is improved across the two regions.

Activity 5.2a*: NIDIS has dedicated staff for tribal engagement who will help build and sustain meaningful and reciprocal relationships with tribal nations.

Activity 5.2b: Create an online *Tribal Drought Portal*, through the *US Drought Portal*, which includes key learning tools for tribal resource managers, students, and the public. These resources will be regularly updated by NIDIS staff to guide drought planning and mitigation efforts.

Activity 5.2c: NIDIS partners with BIA to hold a Tribal Conference in the Upper Missouri River Basin. The conference will include a dedicated Drought Tool and Information Day, guiding tribal resource managers on how to access and utilize existing drought resources.

Activity 5.2d*: Ensure strong tribal participation in Human Health and Drought workshops to inform the *NIDIS Human Health and Drought Strategy*.

Activity 5.2e: Explore the use of drought scenario exercises for tribal nations to inform drought early warning and preparedness in the region.

Activity 5.2f: Work with tribal resource managers to integrate drought early warning information into existing tribal communication pathways (e.g., social media, email, text messaging alerts etc.).

Activity 5.2g*: Drought exposure analyses are expanded to all DEWS regions.

OUTCOME 5.3

NIDIS ensures that all their communication and interaction with tribal nations is culturally appropriate and respectful.

Activity 5.3a: NIDIS makes a conscious effort to ensure that all relevant communication and outreach materials are culturally relevant and developed in collaboration with tribal partners.

▼ **Drummers at the 49th annual United Tribes Pow Wow, a large event that attracts more than 900 dancers and musicians. Bismark, North Dakota. Credit: Pierre Jean Durieu/ shutterstock.com**

Activity 5.3b: NIDIS and partners work with tribal nations in order to better align the language of western drought science with traditional knowledge. This includes the development of culturally-appropriate training materials.

Activity 5.3c*: NIDIS staff and partners are encouraged to take part in Cultural Intelligence training (and certification).

OUTCOME 5.4

NIDIS successfully establishes and sustains meaningful relationships with TCUs.

▶ **Fond du Lac Native American Reservation in Northern Minnesota. Credit: Jacob Boomsma**

Activity 5.4a: NIDIS explores opportunities to engage with tribal youth (e.g., comic book development, artwork, storytelling) focused on drought resilience. The outcomes of such efforts could be compiled and shared across tribal nations.

Activity 5.4b: NIDIS and partners establish relationships with the next generation of climate leaders at the TCUs, working with them to build capacity and roll out workshops and trainings at their colleges and reservations.

Activity 5.4c: In collaboration with tribal leaders, NIDIS develops a series of maps using native languages. These maps will be used to facilitate drought-mapping exercises as part of the proposed climate trainings.

OUTCOME 5.5

Tribal nations are engaged in drought learning networks, established to increase learning exchange between the two regions and across regions, utilizing the *US Drought Portal* and other resources as appropriate.

Activity 5.5a*: NIDIS works with tribal resource managers in order to document success stories, innovations, lessons learned, and guidance for other tribal nations in the region. These resources will be compiled and shared with their permission via the *US Drought Portal* platform.

Activity 5.5b: NIDIS works with online platform partners (e.g., ESRI, Storyvine) to create one-minute drought impact videos from reservations across the two regions. These stories will be mapped using GIS technology and be used to support training as well as communication and outreach activities across the regions.

Activity 5.5c: NIDIS works with partners (e.g., HPRCC, CASCs) to amplify drought messaging and materials developed from the activities above.

OUTCOME 5.6

Regional DEWS networks are strengthened as a result of tribal engagement.

Activity 5.6a: NIDIS coordinators encourage tribal resource managers to attend and provide opportunities for them to be active participants in the regional DEWS meetings.

Activity 5.6b*: To foster improved cultural intelligence amongst DEWS partners and collaboration with tribal nations, selected future DEWS meetings will be hosted on the reservations. □

USGS
science for a changing world

Drought May Lead to Elevated Levels of Naturally Occurring Arsenic in Private Domestic Wells

Release Date: MARCH 18, 2021

An estimated 4.1 million people in the lower 48 states are potentially exposed to arsenic levels that exceed EPA's drinking water standards

A new U.S. Geological Survey study highlights the importance of homeowners testing their well water to ensure it is safe for consumption, particularly in drought-prone areas. The first-of-its-kind national-scale study of private well water, conducted in collaboration with the Centers for Disease Control and Prevention, showed that drought may lead to elevated levels of naturally occurring arsenic and that the longer a drought lasts, the higher the probability of arsenic concentrations exceeding U.S. Environmental Protection Agency's standard for drinking water.

Researchers estimate that during drought conditions, 4.1 million people in the lower 48 states who use private domestic wells are potentially exposed to unsafe levels of arsenic. This is an increase of 54% from the estimated 2.7 million people exposed to unhealthy arsenic levels in private wells during normal, non-drought conditions.

Jacks Pond in Hancock, New Hampshire. Groundwater from this area supplies nearby private wells. (Credit: Melissa Lombard, USGS. Public domain.)

Arsenic is a metal that can occur naturally in bedrock and sediments around the world and is commonly reported in drinking-water supply wells. However, chronic exposure to arsenic from drinking water is associated with an increased risk of several types of cancers, including bladder, lung, prostate and

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skin cancers. Other adverse effects include developmental impairments, cardiovascular disease, adverse birth outcomes and impacts on the immune and endocrine systems.

The study's findings can help public health officials and emergency managers notify well owners in areas potentially affected and further refine their strategies for addressing the issue. The EPA regulates public water supplies, but maintenance, testing and treatment of private water supplies are the responsibility of the homeowner. Private well owners can work with their local and state officials to determine the best way to test and, if necessary, treat their water supply.

"The population potentially exposed to arsenic levels exceeding the EPA standard during simulated drought conditions amounts to roughly one-tenth of the estimated 37.2 to 43.2 million people in the conterminous U.S. who use domestic wells for household water supply," said Melissa Lombard, a USGS hydrologist and lead author of this study.

This is the first national-scale study to assess the potential impact of drought on arsenic levels in private domestic wells. It is also the first to estimate the population of private well users who are potentially exposed during droughts to arsenic levels above EPA's limits, which are intended to protect human health.

The study also estimated that 2.7 million people are exposed to elevated arsenic levels above EPA standards under normal conditions. This is an increase from a 2017 study by the USGS and CDC that estimated 2.1 million people were exposed to elevated arsenic levels. The increase reflects new estimates of well locations and the population reliant on private wells.

The new study, which did not examine private domestic wells in Alaska or Hawaii, includes maps showing where simulated drought conditions are likely to increase the probability of high arsenic levels and the number of people potentially exposed.

The states with the largest populations facing elevated arsenic levels in private domestic well water during the simulated drought conditions are Ohio (approximately 374,000 people), Michigan (320,000 people), Indiana (267,000 people), Texas (200,000 people) and California (196,000 people).

Even without drought conditions, relatively large numbers of people are estimated to be exposed to elevated arsenic levels in private domestic well water. Under normal conditions, the largest populations potentially exposed to high levels of arsenic are in Ohio (approximately 241,000 people), Michigan (226,000 people), Indiana (162,000 people), California (157,000 people) and Maine (121,000 people).

This study is the first to explore the potential large-scale impact of drought on naturally occurring arsenic in private drinking water wells," said Lombard. "While the results suggest that drought will have a negative impact, the study cannot predict what might happen at an individual well, further highlighting the importance of testing."

The occurrence of arsenic in groundwater is due to a variety of complex

interactions, added Lombard. The reasons for the increase in arsenic during drought and as drought persists could vary depending on changes to groundwater flow, alterations in water chemistry and other factors.

Further exacerbating these challenges, climate models predict increasing temperatures and decreasing precipitation in portions of North America during the 21st century. USGS findings suggest that as the duration of drought increases, the probability of arsenic concentrations greater than EPA's drinking water standard will also increase.

This study used an existing USGS statistical model that predicts the probability for elevated arsenic concentrations in domestic well water. In the new research, scientists used the model to simulate drought conditions by changing precipitation and groundwater levels. The researchers also used data from the drought of 2012, one of the worst on record in the U.S., to investigate how drought duration can impact arsenic levels.

Read the study "Assessing the Impact of Drought on Arsenic Exposure from Private Domestic Wells in the Conterminous United States" published in *Environmental Science and Technology* at https://pubs.acs.org/doi/full/10.1021/acs.est.9b05835.

View from Hedgehog Hill in Deering, New Hampshire. Groundwater from this area supplies nearby private wells. (Credit: Melissa Lombard, USGS. Public domain.)

View from Thumb Mountain in Hancock, New Hampshire. Groundwater from this area supplies nearby private wells. (Credit: Melissa Lombard, USGS. Public domain.)

ATTACHMENT D

Minnesota River Water Storage

- **Minnesota Board of Water and Soil Resources Water Storage and Treatment Program Fact Sheet (Summer 2021)** *(D-1)*

BOARD OF WATER AND SOIL RESOURCES

Summer 2021

Water Storage and Treatment Program

Challenges on the landscape

Minnesota is experiencing larger and more frequent and intense rainfall events, resulting in negative impacts to agriculture and infrastructure, significant erosion along riverbanks, and declining water quality.

What is water storage?

Water storage projects are designed and located to slow down or temporarily hold back water from reentering a stream or river. As defined in the statute for this new program, water storage includes, but is not limited to: retention structures and basins, soil and substrate infiltration, wetland restoration, creation, or enhancement, channel restoration or enhancement, and floodplain restoration or enhancement.

L to R: water and sediment control basin in crop field is empty in dry conditions but holds water temporarily after heavy rains; landowners pose by construction of storage basin in Pope county ag field; grass back sediment control basin slows runoff.

Program Development

The Minnesota legislature passed a law this year requiring BWSR to develop a program to provide financial assistance to local units of government (LGUs) to control water rates and/or volumes to protect infrastructure, improve water quality and related public benefits, and mitigate climate change impacts.

Since the intention of the program is to control water rates and volumes, BWSR is proposing that funded projects show a change in the runoff hydrograph for an area of concern, which would be defined by the relevant LGU. The area of concern can have flooding, erosion, or water quality issues. As the program is developed, we are seeking stakeholder input before finalizing program details.

The legislature appropriated $2 million to develop this program which will also seek leverage via local, federal, and private sector funds.

For additional information and to share your ideas, please contact:

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ATTACHMENT E

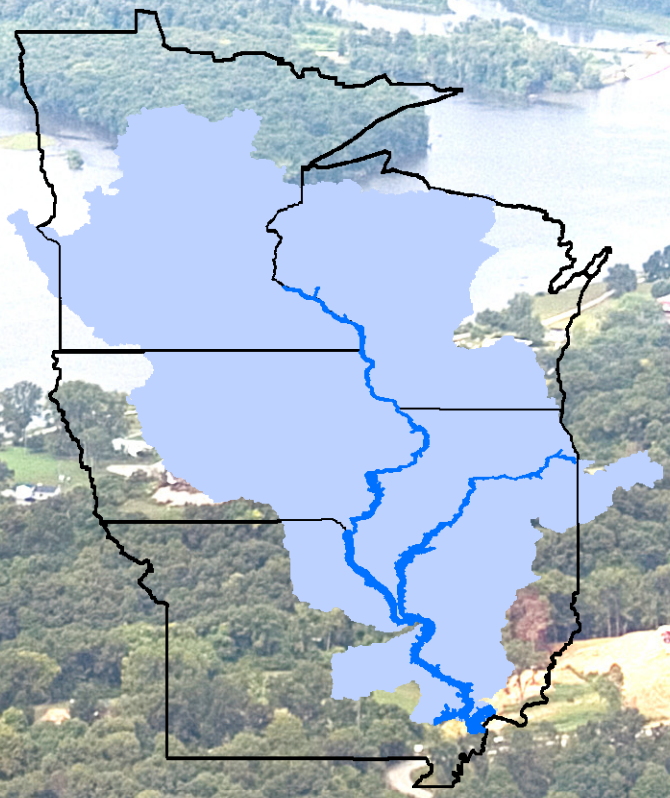
Navigation and Ecosystem Sustainability Program (NESP)
2012 Systemic Forest Stewardship Plan
Executive Summary

(E-1 to E-8)

Upper Mississippi River

Systemic Forest Stewardship Plan

Executive Summary



US Army Corps of Engineers ®

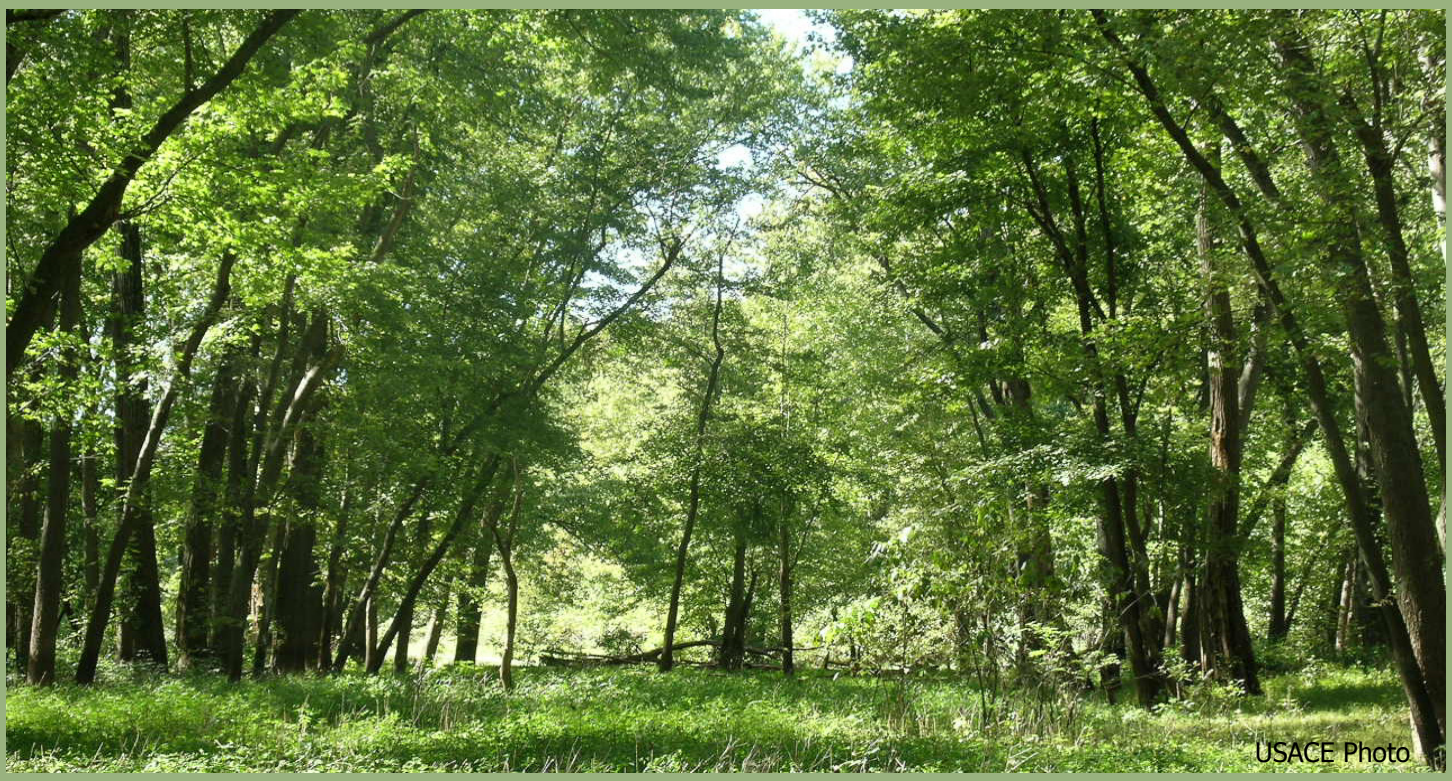
St. Paul District
Rock Island District
St. Louis District

Our Mississippi
PARTNERING TO KEEP AMERICA'S RIVER GREAT

August 2012

Introduction

The Mississippi River is the largest riverine ecosystem in North America and third largest in the world. The Upper Mississippi River (UMR) floodplain ecosystem supports more than 300 species of birds, 57 species of mammals, 45 species of amphibians and reptiles, 150 species of fish, and nearly 50 species of mussels. It is the backbone of the Mississippi Flyway, which is used by more than 40 percent of North America's migratory waterfowl. The Upper Mississippi River also has a record of human history spanning over 12,000 years and is increasingly being documented as one of the most archeologically and historically significant regions in the country. The river has played a significant role in the development of the modern Midwestern economy and culture, and it continues to provide many benefits to the States and local communities along the river corridor.


USACE Photo

The UMR Systemic Forest Stewardship Plan was developed to provide a guide for the sustainable management of Upper Mississippi River System (UMRS) forests, including opportunities for their restoration, and to ensure that the UMRS maintains its recognition as a nationally treasured ecological resource. The Plan accomplishes this by describing the current understanding of the state of the resource and its ecological stressors; providing guidance for forest restoration activities; establishing goals and objectives; identifying opportunities and data needs; establishing a monitoring strategy through an adaptive management framework; and developing additional recommendations that will ensure the long-term sustainability of this key component of the UMRS ecosystem.

Development of the Plan largely followed from agency and stakeholder recognition of the need for a framework of coordinated management at a system level to advance the overarching ecosystem goal of conserving, restoring, and maintaining the ecological structure and function of the UMRS. The coordinated effort was guided by a Product Delivery Team (PDT) consisting of members from the three UMRS Corps of Engineers Districts, five UMRS States, multiple Federal Agencies, non-governmental organizations, and additional stakeholders. The Plan establishes a foundation for the Corps and these partner agencies and stakeholders to more effectively collaborate on and implement environmental stewardship activities in UMRS forests.

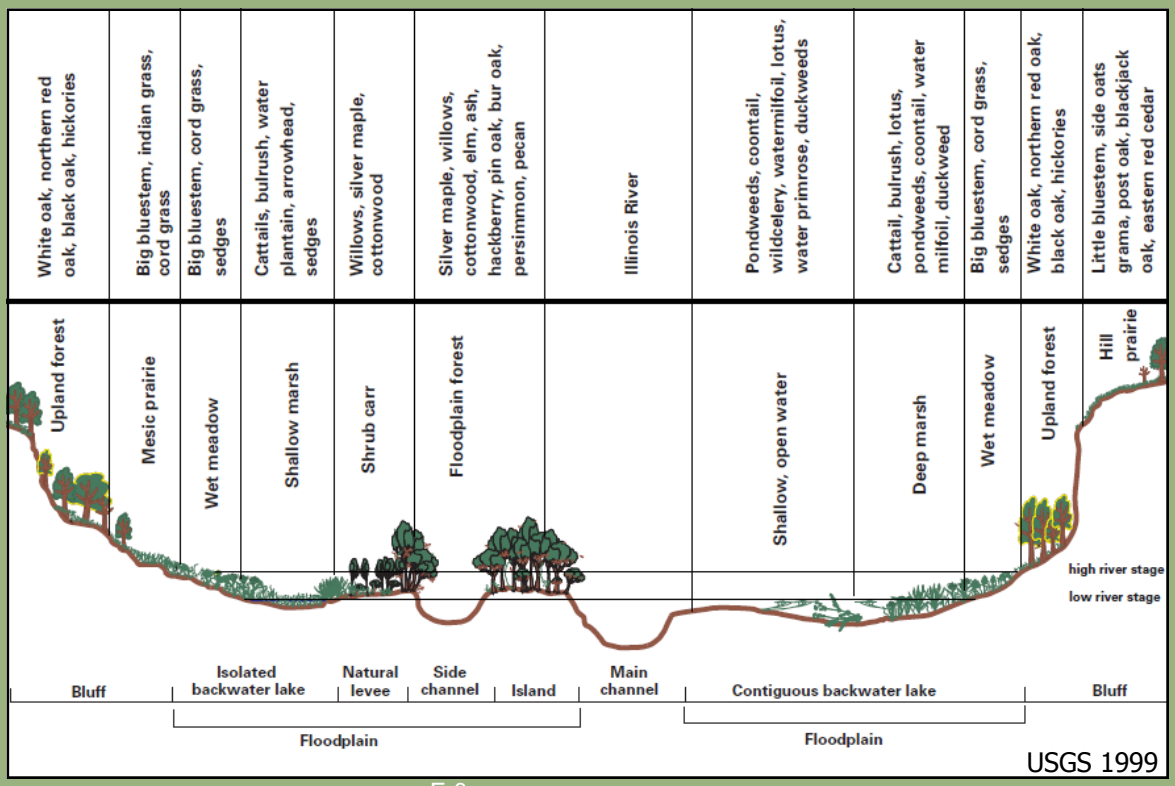
Designated Project Area

The Systemic Forest Stewardship Plan project area is designated as the Upper Mississippi River System (UMRS) 500-year floodplain, regardless of ownership. The UMRS itself is a subset of the larger Mississippi River system, and includes the Mississippi River from Minneapolis–St. Paul, Minnesota, to its confluence with the Ohio River; the Illinois River from Chicago to Grafton, Illinois; and navigable sections of the Minnesota, St. Croix, Black and Kaskaskia Rivers. The lateral extent of the 2.6 million acre UMRS floodplain ecosystem generally encompasses the river valley lands from bluff to bluff, and consists of a mosaic of land and water that contains bottomland forests, grasslands, islands, backwaters, side channels and wetlands.

NLCD 2006

Resource Trends

Modern UMRS forests represent only a small portion of pre-settlement floodplain forests in some reaches. The development of the UMRS floodplain for agriculture, combined with extensive logging for fuel wood and lumber, resulted in widespread conversion of forest and prairie habitats. Today, contiguous forest cover is primarily confined to a relatively narrow strip on the riverward side of agricultural levees, although large portions of forest remain relatively intact in some protected refuge areas. In many river reaches, most natural floodplain communities have been replaced by agriculture. Species composition of the remaining forest has also become less diverse, due in part to altered hydrology, a loss of the seasonal "flood pulse," and the effects of periodic severe flooding, particularly the flood of 1993. This change is especially evident in the decline of mast producing species such as oaks and hickories, and corresponding increase in dominance by silver maple in many floodplain forest communities. Diseases, insects and invasive plant species also continue to have negative impacts throughout the UMRS.

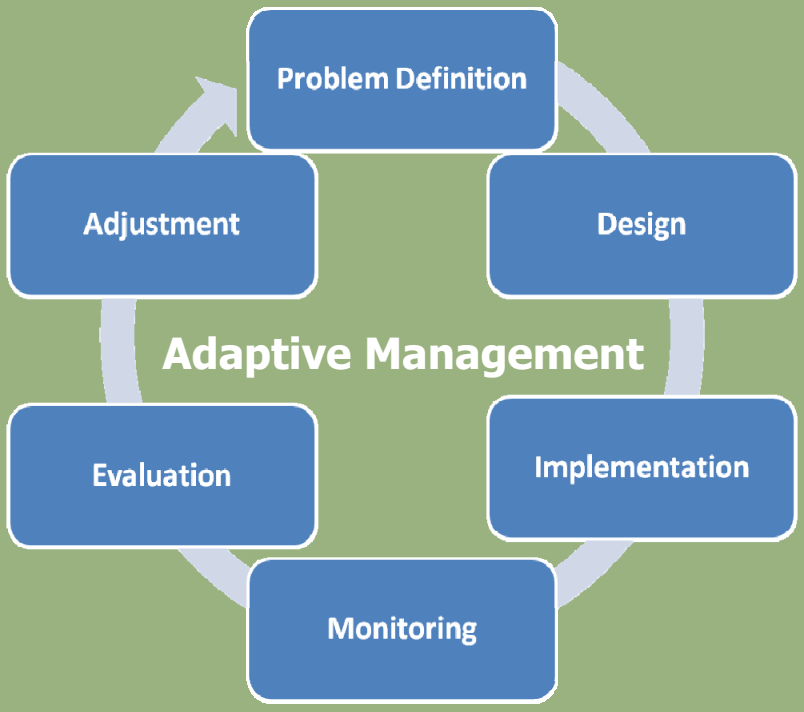


USGS 1999

Future Trends in UMRS Floodplain Forests

Some of the changes we might expect to see over the next 50 years, **without** active forest management, are outlined below:

- A reduction in pioneer species such as cottonwood and willow
- More open forest canopies as trees die and canopy gaps are invaded by herbaceous vegetation and/or grasses (e.g., reed canary grass)
- Continued loss of forest in the lower parts of navigation pools due to island erosion
- Conversion of forest to other vegetation types in mid-pools due to elevated water tables
- Fewer mast trees as species composition in intact forests continues to shift towards silver maple and other more shade and water tolerant trees



Adaptive Management

Partners have agreed to include the incorporation of an adaptive management framework in forest management and restoration activities as a variety of uncertainties exist regarding the long-term trajectory of the forest resource. Restoration projects can then become learning opportunities by utilizing an experimental design or technique and effective monitoring strategies that in turn inform future management decisions.

UMRS Floodplain Forest Ecosystem Services

Water Quality – Improvement to ground and surface water by promoting infiltration, recharge, detoxification, and nutrient cycling; natural flood and erosion/scour control by absorbing energy from floodwaters, reducing flood velocities and peaks, and reducing sediment loads.

Living Resources – Provision of fish and wildlife habitat, organic matter production, natural genetic diversity, pollination, protection of rare and endangered species, and creation of corridors for migration.

Land Based Resources– Establishment and enhancement of forests, harvests of natural products, wind breaks, and carbon sequestration.

Education/Research – Opportunities for environmental education and the scientific study of physical, biological and cultural resources.

Cultural/Recreational Resources – Consumptive and non-consumptive uses, open space, and aesthetic values.

Desired Future Condition

Among the public lands in the UMRS floodplain, Corps-managed lands have become critical for the ecological sustainability of floodplain forests and associated terrestrial and aquatic ecosystems. The Corps forestry program will provide high-quality, sustainable bottomland forest on Corps lands along the UMRS, including a natural diversity of tree species, ages, canopy heights, and understory vegetation. The "ideal" floodplain forest will support floodplain ecosystem functions and sustainable habitat for wildlife. Therefore, the vision is to maintain a healthy, nearly contiguous forest that spreads across wide stretches of the floodplain and contains a sufficient diversity of tree species, size and age classes to provide a wide array of habitat structure and food (mast) resources.

Photo by L. Guyon

USACE Photo

Photo by L. Guyon

System-Wide Goals

The UMR Systemic Forest Stewardship Plan is based upon a set of ecologically and socially desired future UMRS ecosystem conditions, summarized in the following vision statement endorsed by the Navigation Environmental Coordinating Committee (NECC) and in the overarching ecosystem goal developed by the Navigation and Ecosystem Sustainability Program (NESP) Science Panel:

Vision Statement – To seek long-term sustainability of the economic uses and ecological integrity of the Upper Mississippi River System

Overarching Ecosystem Goal – To conserve, restore, and maintain the ecological structure and function of the Upper Mississippi River System to achieve the vision.

The following ***system-wide goals*** were developed for inclusion in the UMR Systemic Forest Stewardship Plan:

- A functional, sustainable floodplain ecosystem that includes a mosaic of native vegetation communities sufficient to support important wildlife habitat
- Restore and maintain forest diversity, health, and sustainability on Federal lands
- Provide support for the restoration and maintenance of forest diversity, health and sustainability on non-Federal lands
- Science-based decision-making: adaptive management

Floodplain Forest Restoration Tools

- Timber stand improvement (TSI)
- Harvesting methods
  - group selection, Shelterwood, & seed tree
- Site preparation
- Forest establishment
  - Natural regeneration
  - Tree plantings
    - containerized saplings, bare root seedlings, & direct seeding
- Prescribed burning
- Elevation modification
- Water level management

Forester scaling logs for a timber sale. USACE Photo

Moving trees by boat to island planting site. USACE Photo

Planting bare root seedlings in an open area. USACE Photo

Typical container tree planting. USACE Photo

Desired Stand Conditions for UMRS Forests

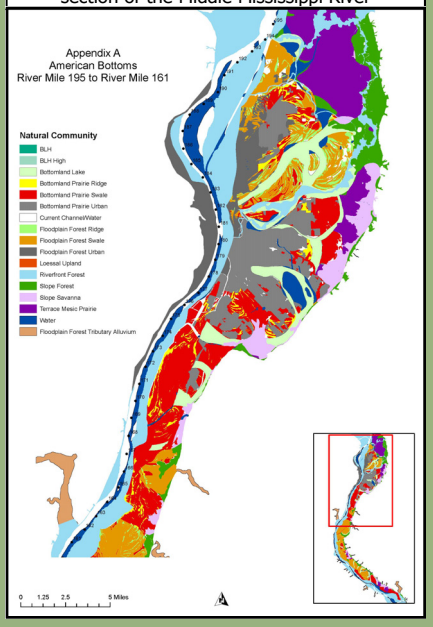
Forest Variables	Desired UMRS Stand Structure	Conditions that may warrant active mgmt
Overstory canopy cover	70 – 80%	> 80%
Overstory Species	2 or more species	Large blocks of single species
Basal area	90-160 ft^2 per acre	> 200 ft^2 per acre
Tree stocking	50% – 90%	< 50% or > 90%
Emergent trees	> 2 per acre	< 1 per acre
Understory cover	> 10 %	< 10%
Regeneration	> 10% of area	< 10% of area
Coarse woody debris	Present	Not Present
Small cavities	≥ 2 visible holes per acre	< 2 visible holes per acre
Den trees/large cavities	≥ 1 visible hole per 10 acres	< 1 visible holes per 10 acres
Standing dead trees	≥ 2 large trees per acre	< 2 large trees per acre
Invasive (herbaceous)	< 10%	> 10% of herbaceous layer
Invasive (woody)	< 10%	> 10% of any canopy layer

Recommended Priority Actions

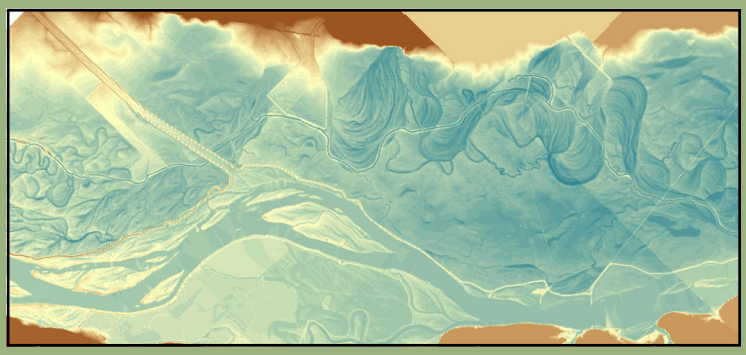
Development of a system-wide hydrogeomorphic model (HGM)

Hydrogeomorphic modeling can provide a science-based approach to identifying ecosystem restoration options and providing recommendations for sustainable management of large river floodplain systems such as the UMRS. The HGM approach allows managers to determine historical conditions and ecological processes of an area, determine ecosystem alterations by comparing historic and current landscapes, and identify options and approaches to restore specific habitats and ecological conditions (Heitmeyer 2008).

Potential presettlement natural communities in a section of the Middle Mississippi River



HGM product for a small section of the Middle Mississippi River. Source: M. Heitmeyer



Small portion of Mississippi River floodplain depicted by LIDAR. Source: USACE

Data acquisition

Data needs include extensive baseline vegetation inventories and fine-scale elevation contours (e.g., LIDAR).

Identification and prioritization of "on-the-ground" forest restoration projects

For example, the Reno Bottoms Forest Restoration Project, located in upper Pool 9, is focused on restoring forest species and age class diversity on up to 1,100 acres negatively impacted by tree mortality, altered hydrology, and invasion by reed canary grass.

Reed canary grass invading the floodplain forest at Reno Bottoms. Photo by L. Guyon

Coordinated system-wide data management

There is a demonstrated need for coordinated database management and data archiving related to a variety of management and restorations efforts throughout the UMRS.

U.S. Army Corps of Engineers District Contact Information:

Mississippi River Environmental Section - St. Paul District
1114 South Oak Street, La Crescent, MN 55947-1560
Phone Number: 651-290-5894

Mississippi River Project Office - Rock Island District
25549 182nd Street, Pleasant Valley, IA 52767
Phone Number: 309-794-4528

Rivers Project Office - St. Louis District
301 Riverlands Way, West Alton, MO 63386
Phone Number: 636-899-2600

For additional copies of the complete Upper Mississippi River Systemic Forest Stewardship Plan please visit www.OurMississippi.org.

US Army Corps of Engineers ®

Our Mississippi
PARTNERING TO KEEP AMERICA'S RIVER GREAT

National Great Rivers Research and Education Center

U.S. FISH & WILDLIFE SERVICE

FOREST SERVICE U.S. DEPARTMENT OF AGRICULTURE

NA

USGS
science for a changing world

Minnesota DEPARTMENT OF NATURAL RESOURCES

WISCONSIN DEPT. OF NATURAL RESOURCES

DNR

Illinois Department of Natural Resources

CONSERVATION DEPARTMENT MISSOURI

Cover photo courtesy of Lewis & Clark Community College.

ATTACHMENT F

Federal Agency Reports

- **Biden Administration Climate Change Priorities**
  - **Executive Order on Tackling the Climate Crisis at Home and Abroad (1/27/2021)** *(F-1 to F-21)*
  - **Department of the Interior "America the Beautiful" Initiative Press Release (5/6/2021)** *(F-22 to F-25)*
    [Link to the full report is available here: https://www.doi.gov/sites/doi.gov/files/report-conserving-and-restoring-america-the-beautiful-2021.pdf]
- **Biden Administration Equity and Inclusion Priorities**
  - **Executive Order on Advancing Racial Equity and Support for Underserved Communities through the Federal Government (1/20/2021)** *(F-26 to F-31)*
  - **Draft Interim Implementation Guidance for the Justice40 Initiative (7/20/2021)** *(F-32 to F-44)*

BRIEFING ROOM

Executive Order on Tackling the Climate Crisis at Home and Abroad

JANUARY 27, 2021 • PRESIDENTIAL ACTIONS

The United States and the world face a profound climate crisis. We have a narrow moment to pursue action at home and abroad in order to avoid the most catastrophic impacts of that crisis and to seize the opportunity that tackling climate change presents. Domestic action must go hand in hand with United States international leadership, aimed at significantly enhancing global action. Together, we must listen to science and meet the moment.

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

PART I — PUTTING THE CLIMATE CRISIS AT THE CENTER OF UNITED STATES FOREIGN POLICY AND NATIONAL SECURITY

Section 101. Policy. United States international engagement to address climate change — which has become a climate crisis — is more necessary and urgent than ever. The scientific community has made clear that the scale and speed of necessary action is greater than previously believed. There is little time left to avoid setting the world on a dangerous, potentially catastrophic, climate trajectory. Responding to the climate crisis will require both significant short-term global reductions in greenhouse gas emissions and net-zero global emissions by mid-century or before.

It is the policy of my Administration that climate considerations shall be an essential element of United States foreign policy and national security. The United States will work with other countries and partners, both bilaterally and multilaterally, to put the world on a sustainable climate pathway. The United States will also move quickly to build resilience, both at home and abroad, against the impacts of climate change that are already manifest and will continue to intensify according to current trajectories.

Sec. 102. Purpose. This order builds on and reaffirms actions my Administration has already taken to place the climate crisis at the forefront of this Nation's foreign policy and national security planning, including submitting the United States instrument of acceptance to rejoin

the Paris Agreement. In implementing — and building upon — the Paris Agreement's three overarching objectives (a safe global temperature, increased climate resilience, and financial flows aligned with a pathway toward low greenhouse gas emissions and climate-resilient development), the United States will exercise its leadership to promote a significant increase in global climate ambition to meet the climate challenge. In this regard:

(a) I will host an early Leaders' Climate Summit aimed at raising climate ambition and making a positive contribution to the 26th United Nations Climate Change Conference of the Parties (COP26) and beyond.

(b) The United States will reconvene the Major Economies Forum on Energy and Climate, beginning with the Leaders' Climate Summit. In cooperation with the members of that Forum, as well as with other partners as appropriate, the United States will pursue green recovery efforts, initiatives to advance the clean energy transition, sectoral decarbonization, and alignment of financial flows with the objectives of the Paris Agreement, including with respect to coal financing, nature-based solutions, and solutions to other climate-related challenges.

(c) I have created a new Presidentially appointed position, the Special Presidential Envoy for Climate, to elevate the issue of climate change and underscore the commitment my Administration will make toward addressing it.

(d) Recognizing that climate change affects a wide range of subjects, it will be a United States priority to press for enhanced climate ambition and integration of climate considerations across a wide range of international fora, including the Group of Seven (G7), the Group of Twenty (G20), and fora that address clean energy, aviation, shipping, the Arctic, the ocean, sustainable development, migration, and other relevant topics. The Special Presidential Envoy for Climate and others, as appropriate, are encouraged to promote innovative approaches, including international multi-stakeholder initiatives. In addition, my Administration will work in partnership with States, localities, Tribes, territories, and other United States stakeholders to advance United States climate diplomacy.

(e) The United States will immediately begin the process of developing its nationally determined contribution under the Paris Agreement. The process will include analysis and input from relevant executive departments and agencies (agencies), as well as appropriate outreach to domestic stakeholders. The United States will aim to submit its nationally determined contribution in advance of the Leaders' Climate Summit.

(f) The United States will also immediately begin to develop a climate finance plan, making strategic use of multilateral and bilateral channels and institutions, to assist developing countries in implementing ambitious emissions reduction measures, protecting critical

ecosystems, building resilience against the impacts of climate change, and promoting the flow of capital toward climate-aligned investments and away from high-carbon investments. The Secretary of State and the Secretary of the Treasury, in coordination with the Special Presidential Envoy for Climate, shall lead a process to develop this plan, with the participation of the Administrator of the United States Agency for International Development (USAID), the Chief Executive Officer of the United States International Development Finance Corporation (DFC), the Chief Executive Officer of the Millennium Challenge Corporation, the Director of the United States Trade and Development Agency, the Director of the Office of Management and Budget, and the head of any other agency providing foreign assistance and development financing, as appropriate. The Secretary of State and the Secretary of the Treasury shall submit the plan to the President, through the Assistant to the President for National Security Affairs and the Assistant to the President for Economic Policy, within 90 days of the date of this order.

(g) The Secretary of the Treasury shall:

(i) ensure that the United States is present and engaged in relevant international fora and institutions that are working on the management of climate-related financial risks;

(ii) develop a strategy for how the voice and vote of the United States can be used in international financial institutions, including the World Bank Group and the International Monetary Fund, to promote financing programs, economic stimulus packages, and debt relief initiatives that are aligned with and support the goals of the Paris Agreement; and

(iii) develop, in collaboration with the Secretary of State, the Administrator of USAID, and the Chief Executive Officer of the DFC, a plan for promoting the protection of the Amazon rainforest and other critical ecosystems that serve as global carbon sinks, including through market-based mechanisms.

(h) The Secretary of State, the Secretary of the Treasury, and the Secretary of Energy shall work together and with the Export–Import Bank of the United States, the Chief Executive Officer of the DFC, and the heads of other agencies and partners, as appropriate, to identify steps through which the United States can promote ending international financing of carbon-intensive fossil fuel-based energy while simultaneously advancing sustainable development and a green recovery, in consultation with the Assistant to the President for National Security Affairs.

(i) The Secretary of Energy, in cooperation with the Secretary of State and the heads of other agencies, as appropriate, shall identify steps through which the United States can intensify

international collaborations to drive innovation and deployment of clean energy technologies, which are critical for climate protection.

(j) The Secretary of State shall prepare, within 60 days of the date of this order, a transmittal package seeking the Senate's advice and consent to ratification of the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, regarding the phasedown of the production and consumption of hydrofluorocarbons.

Sec. 103. Prioritizing Climate in Foreign Policy and National Security. To ensure that climate change considerations are central to United States foreign policy and national security:

(a) Agencies that engage in extensive international work shall develop, in coordination with the Special Presidential Envoy for Climate, and submit to the President, through the Assistant to the President for National Security Affairs, within 90 days of the date of this order, strategies and implementation plans for integrating climate considerations into their international work, as appropriate and consistent with applicable law. These strategies and plans should include an assessment of:

(i) climate impacts relevant to broad agency strategies in particular countries or regions;

(ii) climate impacts on their agency-managed infrastructure abroad (e.g., embassies, military installations), without prejudice to existing requirements regarding assessment of such infrastructure;

(iii) how the agency intends to manage such impacts or incorporate risk mitigation into its installation master plans; and

(iv) how the agency's international work, including partner engagement, can contribute to addressing the climate crisis.

(b) The Director of National Intelligence shall prepare, within 120 days of the date of this order, a National Intelligence Estimate on the national and economic security impacts of climate change.

(c) The Secretary of Defense, in coordination with the Secretary of Commerce, through the Administrator of the National Oceanic and Atmospheric Administration, the Chair of the Council on Environmental Quality, the Administrator of the Environmental Protection Agency, the Director of National Intelligence, the Director of the Office of Science and Technology Policy, the Administrator of the National Aeronautics and Space Administration, and the heads of other agencies as appropriate, shall develop and submit to the President, within 120 days of

the date of this order, an analysis of the security implications of climate change (Climate Risk Analysis) that can be incorporated into modeling, simulation, war-gaming, and other analyses.

(d) The Secretary of Defense and the Chairman of the Joint Chiefs of Staff shall consider the security implications of climate change, including any relevant information from the Climate Risk Analysis described in subsection (c) of this section, in developing the National Defense Strategy, Defense Planning Guidance, Chairman's Risk Assessment, and other relevant strategy, planning, and programming documents and processes. Starting in January 2022, the Secretary of Defense and the Chairman of the Joint Chiefs of Staff shall provide an annual update, through the National Security Council, on the progress made in incorporating the security implications of climate change into these documents and processes.

(e) The Secretary of Homeland Security shall consider the implications of climate change in the Arctic, along our Nation's borders, and to National Critical Functions, including any relevant information from the Climate Risk Analysis described in subsection (c) of this section, in developing relevant strategy, planning, and programming documents and processes. Starting in January 2022, the Secretary of Homeland Security shall provide an annual update, through the National Security Council, on the progress made in incorporating the homeland security implications of climate change into these documents and processes.

Sec. 104. Reinstatement. The Presidential Memorandum of September 21, 2016 (Climate Change and National Security), is hereby reinstated.

PART II — TAKING A GOVERNMENT-WIDE APPROACH TO THE CLIMATE CRISIS

Sec. 201. Policy. Even as our Nation emerges from profound public health and economic crises borne of a pandemic, we face a climate crisis that threatens our people and communities, public health and economy, and, starkly, our ability to live on planet Earth. Despite the peril that is already evident, there is promise in the solutions — opportunities to create well-paying union jobs to build a modern and sustainable infrastructure, deliver an equitable, clean energy future, and put the United States on a path to achieve net-zero emissions, economy-wide, by no later than 2050.

We must listen to science — and act. We must strengthen our clean air and water protections. We must hold polluters accountable for their actions. We must deliver environmental justice in communities all across America. The Federal Government must drive assessment, disclosure, and mitigation of climate pollution and climate-related risks in every sector of our economy, marshaling the creativity, courage, and capital necessary to make our Nation resilient in the face of this threat. Together, we must combat the climate crisis with bold, progressive

action that combines the full capacity of the Federal Government with efforts from every corner of our Nation, every level of government, and every sector of our economy.

It is the policy of my Administration to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy; increases resilience to the impacts of climate change; protects public health; conserves our lands, waters, and biodiversity; delivers environmental justice; and spurs well-paying union jobs and economic growth, especially through innovation, commercialization, and deployment of clean energy technologies and infrastructure. Successfully meeting these challenges will require the Federal Government to pursue such a coordinated approach from planning to implementation, coupled with substantive engagement by stakeholders, including State, local, and Tribal governments.

Sec. 202. White House Office of Domestic Climate Policy. There is hereby established the White House Office of Domestic Climate Policy (Climate Policy Office) within the Executive Office of the President, which shall coordinate the policy-making process with respect to domestic climate-policy issues; coordinate domestic climate-policy advice to the President; ensure that domestic climate-policy decisions and programs are consistent with the President's stated goals and that those goals are being effectively pursued; and monitor implementation of the President's domestic climate-policy agenda. The Climate Policy Office shall have a staff headed by the Assistant to the President and National Climate Advisor (National Climate Advisor) and shall include the Deputy Assistant to the President and Deputy National Climate Advisor. The Climate Policy Office shall have such staff and other assistance as may be necessary to carry out the provisions of this order, subject to the availability of appropriations, and may work with established or ad hoc committees or interagency groups. All agencies shall cooperate with the Climate Policy Office and provide such information, support, and assistance to the Climate Policy Office as it may request, as appropriate and consistent with applicable law.

Sec.203. National Climate Task Force. There is hereby established a National Climate Task Force (Task Force). The Task Force shall be chaired by the National Climate Advisor.

(a) Membership. The Task Force shall consist of the following additional members:

(i) the Secretary of the Treasury;

(ii) the Secretary of Defense;

(iii) the Attorney General;

(iv) the Secretary of the Interior;

(v) the Secretary of Agriculture;

(vi) the Secretary of Commerce;

(vii) the Secretary of Labor;

(viii) the Secretary of Health and Human Services;

(ix) the Secretary of Housing and Urban Development;

(x) the Secretary of Transportation;

(xi) the Secretary of Energy;

(xii) the Secretary of Homeland Security;

(xiii) the Administrator of General Services;

(xiv) the Chair of the Council on Environmental Quality;

(xv) the Administrator of the Environmental Protection Agency;

(xvi) the Director of the Office of Management and Budget;

(xvii) the Director of the Office of Science and Technology Policy;

(xviii) the Assistant to the President for Domestic Policy;

(xix) the Assistant to the President for National Security Affairs;

(xx) the Assistant to the President for Homeland Security and Counterterrorism; and

(xxi) the Assistant to the President for Economic Policy.

(b) Mission and Work. The Task Force shall facilitate the organization and deployment of a Government-wide approach to combat the climate crisis. This Task Force shall facilitate planning and implementation of key Federal actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; conserve our lands, waters, oceans, and biodiversity; deliver environmental justice; and spur well-paying union jobs and economic growth. As necessary and appropriate, members of the Task Force will engage on

these matters with State, local, Tribal, and territorial governments; workers and communities; and leaders across the various sectors of our economy.

(c) Prioritizing Actions. To the extent permitted by law, Task Force members shall prioritize action on climate change in their policy-making and budget processes, in their contracting and procurement, and in their engagement with State, local, Tribal, and territorial governments; workers and communities; and leaders across all the sectors of our economy.

USE OF THE FEDERAL GOVERNMENT'S BUYING POWER AND REAL PROPERTY AND ASSET MANAGEMENT

Sec. 204. Policy. It is the policy of my Administration to lead the Nation's effort to combat the climate crisis by example — specifically, by aligning the management of Federal procurement and real property, public lands and waters, and financial programs to support robust climate action. By providing an immediate, clear, and stable source of product demand, increased transparency and data, and robust standards for the market, my Administration will help to catalyze private sector investment into, and accelerate the advancement of America's industrial capacity to supply, domestic clean energy, buildings, vehicles, and other necessary products and materials.

Sec. 205. Federal Clean Electricity and Vehicle Procurement Strategy. (a) The Chair of the Council on Environmental Quality, the Administrator of General Services, and the Director of the Office and Management and Budget, in coordination with the Secretary of Commerce, the Secretary of Labor, the Secretary of Energy, and the heads of other relevant agencies, shall assist the National Climate Advisor, through the Task Force established in section 203 of this order, in developing a comprehensive plan to create good jobs and stimulate clean energy industries by revitalizing the Federal Government's sustainability efforts.

(b) The plan shall aim to use, as appropriate and consistent with applicable law, all available procurement authorities to achieve or facilitate:

(i) a carbon pollution-free electricity sector no later than 2035; and

(ii) clean and zero-emission vehicles for Federal, State, local, and Tribal government fleets, including vehicles of the United States Postal Service.

(c) If necessary, the plan shall recommend any additional legislation needed to accomplish these objectives.

(d) The plan shall also aim to ensure that the United States retains the union jobs integral to and involved in running and maintaining clean and zero-emission fleets, while spurring the

creation of union jobs in the manufacture of those new vehicles. The plan shall be submitted to the Task Force within 90 days of the date of this order.

Sec. 206. Procurement Standards. Consistent with the Executive Order of January 25, 2021, entitled, "Ensuring the Future Is Made in All of America by All of America's Workers," agencies shall adhere to the requirements of the Made in America Laws in making clean energy, energy efficiency, and clean energy procurement decisions. Agencies shall, consistent with applicable law, apply and enforce the Davis-Bacon Act and prevailing wage and benefit requirements. The Secretary of Labor shall take steps to update prevailing wage requirements. The Chair of the Council on Environmental Quality shall consider additional administrative steps and guidance to assist the Federal Acquisition Regulatory Council in developing regulatory amendments to promote increased contractor attention on reduced carbon emission and Federal sustainability.

Sec. 207. Renewable Energy on Public Lands and in Offshore Waters. The Secretary of the Interior shall review siting and permitting processes on public lands and in offshore waters to identify to the Task Force steps that can be taken, consistent with applicable law, to increase renewable energy production on those lands and in those waters, with the goal of doubling offshore wind by 2030 while ensuring robust protection for our lands, waters, and biodiversity and creating good jobs. In conducting this review, the Secretary of the Interior shall consult, as appropriate, with the heads of relevant agencies, including the Secretary of Defense, the Secretary of Agriculture, the Secretary of Commerce, through the Administrator of the National Oceanic and Atmospheric Administration, the Secretary of Energy, the Chair of the Council on Environmental Quality, State and Tribal authorities, project developers, and other interested parties. The Secretary of the Interior shall engage with Tribal authorities regarding the development and management of renewable and conventional energy resources on Tribal lands.

Sec. 208. Oil and Natural Gas Development on Public Lands and in Offshore Waters. To the extent consistent with applicable law,the Secretary of the Interior shall pause new oil and natural gas leases on public lands or in offshore waters pending completion of a comprehensive review and reconsideration of Federal oil and gas permitting and leasing practices in light of the Secretary of the Interior's broad stewardship responsibilities over the public lands and in offshore waters, including potential climate and other impacts associated with oil and gas activities on public lands or in offshore waters. The Secretary of the Interior shall complete that review in consultation with the Secretary of Agriculture, the Secretary of Commerce, through the National Oceanic and Atmospheric Administration, and the Secretary of Energy. In conducting this analysis, and to the extent consistent with applicable law, the Secretary of the Interior shall consider whether to adjust royalties associated with

coal, oil, and gas resources extracted from public lands and offshore waters, or take other appropriate action, to account for corresponding climate costs.

Sec. 209. Fossil Fuel Subsidies. The heads of agencies shall identify for the Director of the Office of Management and Budget and the National Climate Advisor any fossil fuel subsidies provided by their respective agencies, and then take steps to ensure that, to the extent consistent with applicable law, Federal funding is not directly subsidizing fossil fuels. The Director of the Office of Management and Budget shall seek, in coordination with the heads of agencies and the National Climate Advisor, to eliminate fossil fuel subsidies from the budget request for Fiscal Year 2022 and thereafter.

Sec. 210. Clean Energy in Financial Management. The heads of agencies shall identify opportunities for Federal funding to spur innovation, commercialization, and deployment of clean energy technologies and infrastructure for the Director of the Office of Management and Budget and the National Climate Advisor, and then take steps to ensure that, to the extent consistent with applicable law, Federal funding is used to spur innovation, commercialization, and deployment of clean energy technologies and infrastructure. The Director of the Office of Management and Budget, in coordination with agency heads and the National Climate Advisor, shall seek to prioritize such investments in the President's budget request for Fiscal Year 2022 and thereafter.

Sec. 211. Climate Action Plans and Data and Information Products to Improve Adaptation and Increase Resilience. (a) The head of each agency shall submit a draft action plan to the Task Force and the Federal Chief Sustainability Officer within 120 days of the date of this order that describes steps the agency can take with regard to its facilities and operations to bolster adaptation and increase resilience to the impacts of climate change. Action plans should, among other things, describe the agency's climate vulnerabilities and describe the agency's plan to use the power of procurement to increase the energy and water efficiency of United States Government installations, buildings, and facilities and ensure they are climate-ready. Agencies shall consider the feasibility of using the purchasing power of the Federal Government to drive innovation, and shall seek to increase the Federal Government's resilience against supply chain disruptions. Such disruptions put the Nation's manufacturing sector at risk, as well as consumer access to critical goods and services. Agencies shall make their action plans public, and post them on the agency website, to the extent consistent with applicable law.

(b) Within 30 days of an agency's submission of an action plan, the Federal Chief Sustainability Officer, in coordination with the Director of the Office of Management and Budget, shall review the plan to assess its consistency with the policy set forth in section 204 of this order and the priorities issued by the Office of Management and Budget.

(c) After submitting an initial action plan, the head of each agency shall submit to the Task Force and Federal Chief Sustainability Officer progress reports annually on the status of implementation efforts. Agencies shall make progress reports public and post them on the agency website, to the extent consistent with applicable law. The heads of agencies shall assign their respective agency Chief Sustainability Officer the authority to perform duties relating to implementation of this order within the agency, to the extent consistent with applicable law.

(d) To assist agencies and State, local, Tribal, and territorial governments, communities, and businesses in preparing for and adapting to the impacts of climate change, the Secretary of Commerce, through the Administrator of the National Oceanic and Atmospheric Administration, the Secretary of Homeland Security, through the Administrator of the Federal Emergency Management Agency, and the Director of the Office of Science and Technology Policy, in coordination with the heads of other agencies, as appropriate, shall provide to the Task Force a report on ways to expand and improve climate forecast capabilities and information products for the public. In addition, the Secretary of the Interior and the Deputy Director for Management of the Office of Management and Budget, in their capacities as the Chair and Vice-Chair of the Federal Geographic Data Committee, shall assess and provide to the Task Force a report on the potential development of a consolidated Federal geographic mapping service that can facilitate public access to climate-related information that will assist Federal, State, local, and Tribal governments in climate planning and resilience activities.

EMPOWERING WORKERS THROUGH REBUILDING OUR INFRASTRUCTURE FOR A SUSTAINABLE ECONOMY

Sec. 212. Policy. This Nation needs millions of construction, manufacturing, engineering, and skilled-trades workers to build a new American infrastructure and clean energy economy. These jobs will create opportunities for young people and for older workers shifting to new professions, and for people from all backgrounds and communities. Such jobs will bring opportunity to communities too often left behind — places that have suffered as a result of economic shifts and places that have suffered the most from persistent pollution, including low-income rural and urban communities, communities of color, and Native communities.

Sec. 213. Sustainable Infrastructure. (a) The Chair of the Council on Environmental Quality and the Director of the Office of Management and Budget shall take steps, consistent with applicable law, to ensure that Federal infrastructure investment reduces climate pollution, and to require that Federal permitting decisions consider the effects of greenhouse gas emissions and climate change. In addition, they shall review, and report to the National Climate Advisor on, siting and permitting processes, including those in progress under the auspices of the Federal Permitting Improvement Steering Council, and identify steps that can be taken,

consistent with applicable law, to accelerate the deployment of clean energy and transmission projects in an environmentally stable manner.

(b) Agency heads conducting infrastructure reviews shall, as appropriate, consult from an early stage with State, local, and Tribal officials involved in permitting or authorizing proposed infrastructure projects to develop efficient timelines for decision-making that are appropriate given the complexities of proposed projects.

EMPOWERING WORKERS BY ADVANCING CONSERVATION, AGRICULTURE, AND REFORESTATION

Sec. 214. Policy. It is the policy of my Administration to put a new generation of Americans to work conserving our public lands and waters. The Federal Government must protect America's natural treasures, increase reforestation, improve access to recreation, and increase resilience to wildfires and storms, while creating well-paying union jobs for more Americans, including more opportunities for women and people of color in occupations where they are underrepresented. America's farmers, ranchers, and forest landowners have an important role to play in combating the climate crisis and reducing greenhouse gas emissions, by sequestering carbon in soils, grasses, trees, and other vegetation and sourcing sustainable bioproducts and fuels. Coastal communities have an essential role to play in mitigating climate change and strengthening resilience by protecting and restoring coastal ecosystems, such as wetlands, seagrasses, coral and oyster reefs, and mangrove and kelp forests, to protect vulnerable coastlines, sequester carbon, and support biodiversity and fisheries.

Sec. 215. Civilian Climate Corps. In furtherance of the policy set forth in section 214 of this order, the Secretary of the Interior, in collaboration with the Secretary of Agriculture and the heads of other relevant agencies, shall submit a strategy to the Task Force within 90 days of the date of this order for creating a Civilian Climate Corps Initiative, within existing appropriations, to mobilize the next generation of conservation and resilience workers and maximize the creation of accessible training opportunities and good jobs. The initiative shall aim to conserve and restore public lands and waters, bolster community resilience, increase reforestation, increase carbon sequestration in the agricultural sector, protect biodiversity, improve access to recreation, and address the changing climate.

Sec. 216. Conserving Our Nation's Lands and Waters. (a) The Secretary of the Interior, in consultation with the Secretary of Agriculture, the Secretary of Commerce, the Chair of the Council on Environmental Quality, and the heads of other relevant agencies, shall submit a report to the Task Force within 90 days of the date of this order recommending steps that the United States should take, working with State, local, Tribal, and territorial governments,

agricultural and forest landowners, fishermen, and other key stakeholders, to achieve the goal of conserving at least 30 percent of our lands and waters by 2030.

(i) The Secretary of the Interior, the Secretary of Agriculture, the Secretary of Commerce, through the Administrator of the National Oceanic and Atmospheric Administration, and the Chair of the Council on Environmental Quality shall, as appropriate, solicit input from State, local, Tribal, and territorial officials, agricultural and forest landowners, fishermen, and other key stakeholders in identifying strategies that will encourage broad participation in the goal of conserving 30 percent of our lands and waters by 2030.

(ii) The report shall propose guidelines for determining whether lands and waters qualify for conservation, and it also shall establish mechanisms to measure progress toward the 30-percent goal. The Secretary of the Interior shall subsequently submit annual reports to the Task Force to monitor progress.

(b) The Secretary of Agriculture shall:

(i) initiate efforts in the first 60 days from the date of this order to collect input from Tribes, farmers, ranchers, forest owners, conservation groups, firefighters, and other stakeholders on how to best use Department of Agriculture programs, funding and financing capacities, and other authorities, and how to encourage the voluntary adoption of climate-smart agricultural and forestry practices that decrease wildfire risk fueled by climate change and result in additional, measurable, and verifiable carbon reductions and sequestration and that source sustainable bioproducts and fuels; and

(ii) submit to the Task Force within 90 days of the date of this order a report making recommendations for an agricultural and forestry climate strategy.

(c) The Secretary of Commerce, through the Administrator of the National Oceanic and Atmospheric Administration, shall initiate efforts in the first 60 days from the date of this order to collect input from fishermen, regional ocean councils, fishery management councils, scientists, and other stakeholders on how to make fisheries and protected resources more resilient to climate change, including changes in management and conservation measures, and improvements in science, monitoring, and cooperative research.

EMPOWERING WORKERS THROUGH REVITALIZING ENERGY COMMUNITIES

Sec. 217. Policy. It is the policy of my Administration to improve air and water quality and to create well-paying union jobs and more opportunities for women and people of color in hard-hit communities, including rural communities, while reducing methane emissions, oil and

brine leaks, and other environmental harms from tens of thousands of former mining and well sites. Mining and power plant workers drove the industrial revolution and the economic growth that followed, and have been essential to the growth of the United States. As the Nation shifts to a clean energy economy, Federal leadership is essential to foster economic revitalization of and investment in these communities, ensure the creation of good jobs that provide a choice to join a union, and secure the benefits that have been earned by workers.

Such work should include projects that reduce emissions of toxic substances and greenhouse gases from existing and abandoned infrastructure and that prevent environmental damage that harms communities and poses a risk to public health and safety. Plugging leaks in oil and gas wells and reclaiming abandoned mine land can create well-paying union jobs in coal, oil, and gas communities while restoring natural assets, revitalizing recreation economies, and curbing methane emissions. In addition, such work should include efforts to turn properties idled in these communities, such as brownfields, into new hubs for the growth of our economy. Federal agencies should therefore coordinate investments and other efforts to assist coal, oil and gas, and power plant communities, and achieve substantial reductions of methane emissions from the oil and gas sector as quickly as possible.

Sec. 218. Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization. There is hereby established an Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization (Interagency Working Group). The National Climate Advisor and the Assistant to the President for Economic Policy shall serve as Co-Chairs of the Interagency Working Group.

(a) Membership. The Interagency Working Group shall consist of the following additional members:

(i) the Secretary of the Treasury;

(ii) the Secretary of the Interior;

(iii) the Secretary of Agriculture;

(iv) the Secretary of Commerce;

(v) the Secretary of Labor;

(vi) the Secretary of Health and Human Services;

(vii) the Secretary of Transportation;

(viii) the Secretary of Energy;

(ix) the Secretary of Education;

(x) the Administrator of the Environmental Protection Agency;

(xi) the Director of the Office of Management and Budget;

(xii) the Assistant to the President for Domestic Policy and Director of the Domestic Policy Council; and

(xiii) the Federal Co-Chair of the Appalachian Regional Commission.

(b) Mission and Work.

(i) The Interagency Working Group shall coordinate the identification and delivery of Federal resources to revitalize the economies of coal, oil and gas, and power plant communities; develop strategies to implement the policy set forth in section 217 of this order and for economic and social recovery; assess opportunities to ensure benefits and protections for coal and power plant workers; and submit reports to the National Climate Advisor and the Assistant to the President for Economic Policy on a regular basis on the progress of the revitalization effort.

(ii) As part of this effort, within 60 days of the date of this order, the Interagency Working Group shall submit a report to the President describing all mechanisms, consistent with applicable law, to prioritize grantmaking, Federal loan programs, technical assistance, financing, procurement, or other existing programs to support and revitalize the economies of coal and power plant communities, and providing recommendations for action consistent with the goals of the Interagency Working Group.

(c) Consultation. Consistent with the objectives set out in this order and in accordance with applicable law, the Interagency Working Group shall seek the views of State, local, and Tribal officials; unions; environmental justice organizations; community groups; and other persons it identifies who may have perspectives on the mission of the Interagency Working Group.

(d) Administration. The Interagency Working Group shall be housed within the Department of Energy. The Chairs shall convene regular meetings of the Interagency Working Group, determine its agenda, and direct its work. The Secretary of Energy, in consultation with the Chairs, shall designate an Executive Director of the Interagency Working Group, who shall coordinate the work of the Interagency Working Group and head any staff assigned to the Interagency Working Group.

(e) Officers. To facilitate the work of the Interagency Working Group, the head of each agency listed in subsection (a) of this section shall assign a designated official within the agency the authority to represent the agency on the Interagency Working Group and perform such other duties relating to the implementation of this order within the agency as the head of the agency deems appropriate.

SECURING ENVIRONMENTAL JUSTICE AND SPURRING ECONOMIC OPPORTUNITY

Sec. 219. Policy. To secure an equitable economic future, the United States must ensure that environmental and economic justice are key considerations in how we govern. That means investing and building a clean energy economy that creates well-paying union jobs, turning disadvantaged communities — historically marginalized and overburdened — into healthy, thriving communities, and undertaking robust actions to mitigate climate change while preparing for the impacts of climate change across rural, urban, and Tribal areas. Agencies shall make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts. It is therefore the policy of my Administration to secure environmental justice and spur economic opportunity for disadvantaged communities that have been historically marginalized and overburdened by pollution and underinvestment in housing, transportation, water and wastewater infrastructure, and health care.

Sec. 220. White House Environmental Justice Interagency Council. (a) Section 1-102 of Executive Order 12898 of February 11, 1994 (Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations), is hereby amended to read as follows:

"(a) There is hereby created within the Executive Office of the President a White House Environmental Justice Interagency Council (Interagency Council). The Chair of the Council on Environmental Quality shall serve as Chair of the Interagency Council.

"(b) Membership. The Interagency Council shall consist of the following additional members:

(i) the Secretary of Defense;

(ii) the Attorney General;

(iii) the Secretary of the Interior;

(iv) the Secretary of Agriculture;

(v) the Secretary of Commerce;

(vi) the Secretary of Labor;

(vii) the Secretary of Health and Human Services;

(viii) the Secretary of Housing and Urban Development;

(ix) the Secretary of Transportation;

(x) the Secretary of Energy;

(xi) the Chair of the Council of Economic Advisers;

(xii) the Administrator of the Environmental Protection Agency;

(xiii) the Director of the Office of Management and Budget;

(xiv) the Executive Director of the Federal Permitting Improvement Steering Council;

(xv) the Director of the Office of Science and Technology Policy;

(xvi) the National Climate Advisor;

(xvii) the Assistant to the President for Domestic Policy; and

(xviii) the Assistant to the President for Economic Policy.

"(c) At the direction of the Chair, the Interagency Council may establish subgroups consisting exclusively of Interagency Council members or their designees under this section, as appropriate.

"(d) Mission and Work. The Interagency Council shall develop a strategy to address current and historic environmental injustice by consulting with the White House Environmental Justice Advisory Council and with local environmental justice leaders. The Interagency Council shall also develop clear performance metrics to ensure accountability, and publish an annual public performance scorecard on its implementation.

"(e) Administration. The Office of Administration within the Executive Office of the President shall provide funding and administrative support for the Interagency Council, to the extent permitted by law and within existing appropriations. To the extent permitted by law, including the Economy Act (31 U.S.C. 1535), and subject to the availability of appropriations,

the Department of Labor, the Department of Transportation, and the Environmental Protection Agency shall provide administrative support as necessary.

"(f) Meetings and Staff. The Chair shall convene regular meetings of the Council, determine its agenda, and direct its work. The Chair shall designate an Executive Director of the Council, who shall coordinate the work of the Interagency Council and head any staff assigned to the Council.

"(g) Officers. To facilitate the work of the Interagency Council, the head of each agency listed in subsection (b) shall assign a designated official within the agency to be an Environmental Justice Officer, with the authority to represent the agency on the Interagency Council and perform such other duties relating to the implementation of this order within the agency as the head of the agency deems appropriate."

(b) The Interagency Council shall, within 120 days of the date of this order, submit to the President, through the National Climate Advisor, a set of recommendations for further updating Executive Order 12898.

Sec. 221. White House Environmental Justice Advisory Council. There is hereby established, within the Environmental Protection Agency, the White House Environmental Justice Advisory Council (Advisory Council), which shall advise the Interagency Council and the Chair of the Council on Environmental Quality.

(a) Membership. Members shall be appointed by the President, shall be drawn from across the political spectrum, and may include those with knowledge about or experience in environmental justice, climate change, disaster preparedness, racial inequity, or any other area determined by the President to be of value to the Advisory Council.

(b) Mission and Work. The Advisory Council shall be solely advisory. It shall provide recommendations to the White House Environmental Justice Interagency Council established in section 220 of this order on how to increase the Federal Government's efforts to address current and historic environmental injustice, including recommendations for updating Executive Order 12898.

(c) Administration. The Environmental Protection Agency shall provide funding and administrative support for the Advisory Council to the extent permitted by law and within existing appropriations. Members of the Advisory Council shall serve without either compensation or reimbursement of expenses.

(d) Federal Advisory Committee Act. Insofar as the Federal Advisory Committee Act, as amended (5 U.S.C. App.), may apply to the Advisory Council, any functions of the President under the Act, except for those in section 6 of the Act, shall be performed by the Administrator of the Environmental Protection Agency in accordance with the guidelines that have been issued by the Administrator of General Services.

Sec. 222. Agency Responsibilities. In furtherance of the policy set forth in section 219:

(a) The Chair of the Council on Environmental Quality shall, within 6 months of the date of this order, create a geospatial Climate and Economic Justice Screening Tool and shall annually publish interactive maps highlighting disadvantaged communities.

(b) The Administrator of the Environmental Protection Agency shall, within existing appropriations and consistent with applicable law:

(i) strengthen enforcement of environmental violations with disproportionate impact on underserved communities through the Office of Enforcement and Compliance Assurance; and

(ii) create a community notification program to monitor and provide real-time data to the public on current environmental pollution, including emissions, criteria pollutants, and toxins, in frontline and fenceline communities — places with the most significant exposure to such pollution.

(c) The Attorney General shall, within existing appropriations and consistent with applicable law:

(i) consider renaming the Environment and Natural Resources Division the Environmental Justice and Natural Resources Division;

(ii) direct that division to coordinate with the Administrator of the Environmental Protection Agency, through the Office of Enforcement and Compliance Assurance, as well as with other client agencies as appropriate, to develop a comprehensive environmental justice enforcement strategy, which shall seek to provide timely remedies for systemic environmental violations and contaminations, and injury to natural resources; and

(iii) ensure comprehensive attention to environmental justice throughout the Department of Justice, including by considering creating an Office of Environmental Justice within the Department to coordinate environmental justice activities among Department of Justice components and United States Attorneys' Offices nationwide.

(d) The Secretary of Health and Human Services shall, consistent with applicable law and within existing appropriations:

(i) establish an Office of Climate Change and Health Equity to address the impact of climate change on the health of the American people; and

(ii) establish an Interagency Working Group to Decrease Risk of Climate Change to Children, the Elderly, People with Disabilities, and the Vulnerable as well as a biennial Health Care System Readiness Advisory Council, both of which shall report their progress and findings regularly to the Task Force.

(e) The Director of the Office of Science and Technology Policy shall, in consultation with the National Climate Advisor, within existing appropriations, and within 100 days of the date of this order, publish a report identifying the climate strategies and technologies that will result in the most air and water quality improvements, which shall be made public to the maximum extent possible and published on the Office's website.

Sec. 223. Justice40 Initiative. (a) Within 120 days of the date of this order, the Chair of the Council on Environmental Quality, the Director of the Office of Management and Budget, and the National Climate Advisor, in consultation with the Advisory Council, shall jointly publish recommendations on how certain Federal investments might be made toward a goal that 40 percent of the overall benefits flow to disadvantaged communities. The recommendations shall focus on investments in the areas of clean energy and energy efficiency; clean transit; affordable and sustainable housing; training and workforce development; the remediation and reduction of legacy pollution; and the development of critical clean water infrastructure. The recommendations shall reflect existing authorities the agencies may possess for achieving the 40-percent goal as well as recommendations on any legislation needed to achieve the 40-percent goal.

(b) In developing the recommendations, the Chair of the Council on Environmental Quality, the Director of the Office of Management and Budget, and the National Climate Advisor shall consult with affected disadvantaged communities.

(c) Within 60 days of the recommendations described in subsection (a) of this section, agency heads shall identify applicable program investment funds based on the recommendations and consider interim investment guidance to relevant program staff, as appropriate and consistent with applicable law.

(d) By February 2022, the Director of the Office of Management and Budget, in coordination with the Chair of the Council on Environmental Quality, the Administrator of the United States

Digital Service, and other relevant agency heads, shall, to the extent consistent with applicable law, publish on a public website an annual Environmental Justice Scorecard detailing agency environmental justice performance measures.

PART III — GENERAL PROVISIONS

Sec. 301. General Provisions. (a) Nothing in this order shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget, relating to budgetary, administrative, or legislative proposals.

(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

JOSEPH R. BIDEN JR.

THE WHITE HOUSE,

January 27, 2021.

U.S. Department of the Interior

Press Releases

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Biden-Harris Administration Outlines “America the Beautiful” Initiative

Initial report details vision for 10-year, locally led and voluntary nationwide effort to restore and conserve America’s lands, waters, and wildlife

5/6/2021
Last edited 6/10/2021

Official seals and logos from partnering agencies.

Date: Thursday, May 6, 2021
Contact: Interior_Press@ios.doi.gov

WASHINGTON, D.C. — Today the Biden-Harris administration outlined a vision for how the United States can work collaboratively to conserve and restore the lands, waters, and wildlife that support and sustain the nation. The recommendations are contained in a report released today, outlining a locally led and voluntary nationwide conservation goal to conserve 30 percent of U.S. lands and waters by 2030.

The report calls for a decade-long effort to support locally led and voluntary conservation and restoration efforts across public, private, and Tribal lands and waters in order to create jobs and strengthen the economy’s foundation; tackle the climate and nature crises; and address inequitable access to the outdoors.

The report, submitted to the National Climate Task Force, was developed by the U.S. Departments of the Interior, Agriculture and Commerce, and the White House Council on Environmental Quality. It outlines eight principles that should guide the nationwide effort, including a pursuit of collaborative approaches; a commitment to supporting the voluntary conservation efforts of farmers, ranchers, and fishers; and honoring of Tribal sovereignty and private property rights.

“The President’s challenge is a call to action to support locally led conservation and restoration efforts of all kinds and all over America, wherever communities wish to safeguard the lands and waters they know and love,” write Interior Secretary Deb Haaland, Agriculture Secretary Tom Vilsack, Commerce Secretary Gina Raimondo, and White House Council on Environmental Quality Chair Brenda Mallory in the report. “Doing so will not only protect our lands and waters but also boost our economy and support jobs nationwide.”

Based on feedback gathered in the Administration’s first 100 days, the report identifies six priority areas for the administration’s early focus, investments, and collaboration:

- Creating more parks and safe outdoor opportunities in nature-deprived communities.
- Supporting Tribally led conservation and restoration priorities.
- Expanding collaborative conservation of fish and wildlife habitats and corridors.
- Increasing access for outdoor recreation.
- Incentivizing and rewarding the voluntary conservation efforts of fishers, ranchers, farmers, and forest owners.
- Creating jobs by investing in restoration and resilience projects and initiatives, including the Civilian Climate Corps.

The Biden-Harris administration is already taking steps to support outdoor recreation and equitable access to the outdoors:

- In late April, USDA expanded the Conservation Reserve Program by offering new incentives, higher rental rates, and more focused attention on sensitive lands with a goal of enrolling 4 million acres and capturing 3.6 million metric tons of CO2 equivalent in this voluntary conservation program.
- This week, the U.S. Fish and Wildlife Service announced a proposal for the largest expansion in recent history of hunting and sport fishing opportunities for game species across 2.1 million acres at 90 national wildlife refuges and on the lands of one national fish hatchery.
- The National Oceanic and Atmospheric Administration (NOAA) recently announced the expansion of the Flower Garden Banks National Marine Sanctuary, nearly tripling the size of the sanctuary and protecting 14 reefs and banks that are habitat for recreationally important fish.
- In the coming days, the National Park Service will announce $150 million in funding for the Outdoor Recreation Legacy Partnership Program, which helps build parks in underserved communities.
- NOAA is working in partnership with the State of Connecticut to create a living classroom for education, research, and recreation by designating a National Estuarine Research Reserve in Long Island Sound. The final designation paperwork is expected by January 2022, which will make it the 30th estuary reserve in the national system.

To help measure and track progress toward the nation’s first conservation goal, the report calls for the establishment of an interagency working group, led by the U.S. Geological Survey, the Natural Resources Conservation Service and NOAA in partnership with other land and ocean management agencies. The working group will develop the American Conservation and Stewardship Atlas, a tool that will better reflect the voluntary contributions of farmers, ranchers, forest owners and private landowners; the contributions of fishery management councils; and other existing conservation designations on lands and waters across federal, state, local, Tribal, and private lands and waters across the nation.

In line with Executive Order 14008, the agencies developed the recommendations after hearing from Tribal leaders, governors and their staff, Members of Congress and their staff, county officials, state elected officials, state fish and wildlife agencies, leaders on equity and justice in conservation policy, environmental advocacy organizations, hunting and fishing organizations, regional fisheries management councils, farming and ranching organizations, trade associations, forestry representatives, outdoor recreation businesses and users, the seafood industry, and others.

The report recommends additional dialogue with key partners – including states and Tribes – to inform early collaborative conservation efforts and the development of the American Conservation and Stewardship Atlas.

“This report is only the starting point on the path to fulfilling the conservation vision that President Biden has outlined,” says the report. “Where this path leads over the next decade will be determined not by our agencies, but by the ideas and leadership of local communities. It is our job to listen, learn, and provide support along the way to help strengthen economies and pass on healthy lands, waters, and wildlife to the generations to come.”

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BRIEFING ROOM

Executive Order On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government

JANUARY 20, 2021 • PRESIDENTIAL ACTIONS

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered:

Section 1. Policy. Equal opportunity is the bedrock of American democracy, and our diversity is one of our country's greatest strengths. But for too many, the American Dream remains out of reach. Entrenched disparities in our laws and public policies, and in our public and private institutions, have often denied that equal opportunity to individuals and communities. Our country faces converging economic, health, and climate crises that have exposed and exacerbated inequities, while a historic movement for justice has highlighted the unbearable human costs of systemic racism. Our Nation deserves an ambitious whole-of-government equity agenda that matches the scale of the opportunities and challenges that we face.

It is therefore the policy of my Administration that the Federal Government should pursue a comprehensive approach to advancing equity for all, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality. Affirmatively advancing equity, civil rights, racial justice, and equal opportunity is the responsibility of the whole of our Government. Because advancing equity requires a systematic approach to embedding fairness in decision-making processes, executive departments and agencies (agencies) must recognize and work to redress inequities in their policies and programs that serve as barriers to equal opportunity.

By advancing equity across the Federal Government, we can create opportunities for the improvement of communities that have been historically underserved, which benefits everyone. For example, an analysis shows that closing racial gaps in wages, housing credit, lending opportunities, and access to higher education would amount to an additional $5 trillion in gross domestic product in the American economy over the next 5 years. The Federal Government's goal in advancing equity is to provide everyone with the opportunity to reach their full potential. Consistent with these aims, each agency must assess whether, and to what

extent, its programs and policies perpetuate systemic barriers to opportunities and benefits for people of color and other underserved groups. Such assessments will better equip agencies to develop policies and programs that deliver resources and benefits equitably to all.

Sec. 2. Definitions. For purposes of this order: (a) The term "equity" means the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.

(b) The term "underserved communities" refers to populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, as exemplified by the list in the preceding definition of "equity."

Sec. 3. Role of the Domestic Policy Council. The role of the White House Domestic Policy Council (DPC) is to coordinate the formulation and implementation of my Administration's domestic policy objectives. Consistent with this role, the DPC will coordinate efforts to embed equity principles, policies, and approaches across the Federal Government. This will include efforts to remove systemic barriers to and provide equal access to opportunities and benefits, identify communities the Federal Government has underserved, and develop policies designed to advance equity for those communities. The DPC-led interagency process will ensure that these efforts are made in coordination with the directors of the National Security Council and the National Economic Council.

Sec. 4. Identifying Methods to Assess Equity. (a) The Director of the Office of Management and Budget (OMB) shall, in partnership with the heads of agencies, study methods for assessing whether agency policies and actions create or exacerbate barriers to full and equal participation by all eligible individuals. The study should aim to identify the best methods, consistent with applicable law, to assist agencies in assessing equity with respect to race, ethnicity, religion, income, geography, gender identity, sexual orientation, and disability.

(b) As part of this study, the Director of OMB shall consider whether to recommend that agencies employ pilot programs to test model assessment tools and assist agencies in doing so.

(c) Within 6 months of the date of this order, the Director of OMB shall deliver a report to the President describing the best practices identified by the study and, as appropriate, recommending approaches to expand use of those methods across the Federal Government.

Sec. 5. Conducting an Equity Assessment in Federal Agencies. The head of each agency, or designee, shall, in consultation with the Director of OMB, select certain of the agency's programs and policies for a review that will assess whether underserved communities and their members face systemic barriers in accessing benefits and opportunities available pursuant to those policies and programs. The head of each agency, or designee, shall conduct such review and within 200 days of the date of this order provide a report to the Assistant to the President for Domestic Policy (APDP) reflecting findings on the following:

(a) Potential barriers that underserved communities and individuals may face to enrollment in and access to benefits and services in Federal programs;

(b) Potential barriers that underserved communities and individuals may face in taking advantage of agency procurement and contracting opportunities;

(c) Whether new policies, regulations, or guidance documents may be necessary to advance equity in agency actions and programs; and

(d) The operational status and level of institutional resources available to offices or divisions within the agency that are responsible for advancing civil rights or whose mandates specifically include serving underrepresented or disadvantaged communities.

Sec. 6. Allocating Federal Resources to Advance Fairness and Opportunity. The Federal Government should, consistent with applicable law, allocate resources to address the historic failure to invest sufficiently, justly, and equally in underserved communities, as well as individuals from those communities. To this end:

(a) The Director of OMB shall identify opportunities to promote equity in the budget that the President submits to the Congress.

(b) The Director of OMB shall, in coordination with the heads of agencies, study strategies, consistent with applicable law, for allocating Federal resources in a manner that increases investment in underserved communities, as well as individuals from those communities. The Director of OMB shall report the findings of this study to the President.

Sec. 7. Promoting Equitable Delivery of Government Benefits and Equitable Opportunities. Government programs are designed to serve all eligible individuals. And Government contracting and procurement opportunities should be available on an equal basis to all eligible providers of goods and services. To meet these objectives and to enhance compliance with existing civil rights laws:

(a) Within 1 year of the date of this order, the head of each agency shall consult with the APDP and the Director of OMB to produce a plan for addressing:

(i) any barriers to full and equal participation in programs identified pursuant to section 5(a) of this order; and

(ii) any barriers to full and equal participation in agency procurement and contracting opportunities identified pursuant to section 5(b) of this order.

(b) The Administrator of the U.S. Digital Service, the United States Chief Technology Officer, the Chief Information Officer of the United States, and the heads of other agencies, or their designees, shall take necessary actions, consistent with applicable law, to support agencies in developing such plans.

Sec. 8. Engagement with Members of Underserved Communities. In carrying out this order, agencies shall consult with members of communities that have been historically underrepresented in the Federal Government and underserved by, or subject to discrimination in, Federal policies and programs. The head of each agency shall evaluate opportunities, consistent with applicable law, to increase coordination, communication, and engagement with community-based organizations and civil rights organizations.

Sec. 9. Establishing an Equitable Data Working Group. Many Federal datasets are not disaggregated by race, ethnicity, gender, disability, income, veteran status, or other key demographic variables. This lack of data has cascading effects and impedes efforts to measure and advance equity. A first step to promoting equity in Government action is to gather the data necessary to inform that effort.

(a) Establishment. There is hereby established an Interagency Working Group on Equitable Data (Data Working Group).

(b) Membership.

(i) The Chief Statistician of the United States and the United States Chief Technology Officer shall serve as Co-Chairs of the Data Working Group and coordinate its work. The Data Working Group shall include representatives of agencies as determined by the Co-Chairs to be necessary to complete the work of the Data Working Group, but at a minimum shall include the following officials, or their designees:

(A) the Director of OMB;

(B) the Secretary of Commerce, through the Director of the U.S. Census Bureau;

(C) the Chair of the Council of Economic Advisers;

(D) the Chief Information Officer of the United States;

(E) the Secretary of the Treasury, through the Assistant Secretary of the Treasury for Tax Policy;

(F) the Chief Data Scientist of the United States; and

(G) the Administrator of the U.S. Digital Service.

(ii) The DPC shall work closely with the Co-Chairs of the Data Working Group and assist in the Data Working Group's interagency coordination functions.

(iii) The Data Working Group shall consult with agencies to facilitate the sharing of information and best practices, consistent with applicable law.

(c) Functions. The Data Working Group shall:

(i) through consultation with agencies, study and provide recommendations to the APDP identifying inadequacies in existing Federal data collection programs, policies, and infrastructure across agencies, and strategies for addressing any deficiencies identified; and

(ii) support agencies in implementing actions, consistent with applicable law and privacy interests, that expand and refine the data available to the Federal Government to measure equity and capture the diversity of the American people.

(d) OMB shall provide administrative support for the Data Working Group, consistent with applicable law.

Sec. 10. Revocation. (a) Executive Order 13950 of September 22, 2020 (Combating Race and Sex Stereotyping), is hereby revoked.

(b) The heads of agencies covered by Executive Order 13950 shall review and identify proposed and existing agency actions related to or arising from Executive Order 13950. The head of each agency shall, within 60 days of the date of this order, consider suspending, revising, or rescinding any such actions, including all agency actions to terminate or restrict contracts or grants pursuant to Executive Order 13950, as appropriate and consistent with applicable law.

(c) Executive Order 13958 of November 2, 2020 (Establishing the President's Advisory 1776 Commission), is hereby revoked.

Sec. 11. General Provisions. (a) Nothing in this order shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) Independent agencies are strongly encouraged to comply with the provisions of this order.

(d) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

JOSEPH R. BIDEN JR.

THE WHITE HOUSE,
January 20, 2021.

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

July 20, 2021

M-21-28

MEMORANDUM FOR THE HEADS OF DEPARTMENTS AND AGENCIES

FROM: Shalanda D. Young, Acting Director, Office of Management and Budget
Brenda Mallory, Chair of the Council on Environmental Quality
Gina McCarthy, National Climate Advisor

SUBJECT: Interim Implementation Guidance for the Justice40 Initiative

President Biden is committed to securing environmental justice and spurring economic opportunity for disadvantaged communities that have been historically marginalized and overburdened by pollution and underinvestment in housing, transportation, water and wastewater infrastructure, and health care. In Executive Order 14008,[1] the President directed the Director of the Office of Management and Budget (OMB), the Chair of the Council on Environmental Quality (CEQ), and the National Climate Advisor, in consultation with the White House Environmental Justice Advisory Council (WHEJAC), to jointly publish guidance on how certain Federal investments might be made toward a goal that 40 percent of the overall benefits of such investments flow to disadvantaged communities – the Justice40 Initiative. The Justice40 Initiative is a critical part of the Administration's whole-of-government approach to advancing environmental justice.

The following Interim Implementation Guidance for the Justice40 Initiative ("guidance" or "interim guidance") provides the initial recommendations pursuant to section 223 of Executive Order 14008,[2] and supports the Administration's comprehensive approach to advancing equity for all in line with Executive Order 13958.[3] The Executive branch should implement this guidance in accordance with existing authorities in order achieve the 40-percent goal.

Summary of Interim Implementation Guidance for the Justice40 Initiative

This interim guidance includes a set of actions required of agencies that manage covered Justice40 programs. These actions include identifying the benefits of covered programs, determining how covered programs distribute benefits, and calculating and reporting on reaching the 40-percent goal of the Justice40 Initiative. This interim guidance provides implementation direction to an initial set of covered programs under the Justice40 Initiative. Additional guidance is forthcoming. The interim guidance applies to all entities with covered programs, including those agencies with potential covered programs listed in Appendix B.

[1] *Tackling the Climate Crisis at Home and Abroad*, 86 Fed. Reg., 7619 (Feb. 1, 2021).
[2] *Supra* note 1, at 7632.
[3] *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*, 86 Fed. Reg., 7009 (Jan. 25, 2021).

Interim Agency Justice40 Implementation

I. Interim Definition of Disadvantaged Communities

Further guidance to agencies on how to define disadvantaged communities for the purposes of the Justice40 Initiative[4] will be released later this year, concurrent with the establishment of a geospatial Climate and Economic Justice Screening Tool being developed by CEQ, in partnership with the United States Digital Service (USDS). This new tool will include interactive maps with indicators to assist agencies in defining and identifying disadvantaged communities.

Until such time when further guidance is provided, agencies should consider using, as appropriate, the following indicators of disadvantaged communities to implement the goals of the Justice40 Initiative utilizing existing data sources and indices that are currently used by programs serving low income, vulnerable, and underserved communities:

- **Community** – Agencies should define community as "either a group of individuals living in geographic proximity to one another, or a geographically dispersed set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions."[5]

- **Disadvantaged** – Agencies should consider appropriate data, indices, and screening tools to determine whether a specific community is disadvantaged based on a combination of variables that may include, but are not limited to, the following:

    - Low income, high and/or persistent poverty
    - High unemployment and underemployment
    - Racial and ethnic residential segregation, particularly where the segregation stems from discrimination by government entities
    - Linguistic isolation
    - High housing cost burden and substandard housing

[4] Executive Order 14008 uses the phrase "disadvantaged communities," and this term has been used in existing Federal and state programs to prioritize funding for environmental justice. Some community members and advocates prefer alternative terminology, and specifically the use of "overburdened and underserved communities." Until subsequent guidance can address the question of the most appropriate terminology, this memorandum relies on the language used in Executive Order 14008.
[5] CEQ, *Environmental Justice: Guidance under the National Environmental Policy Act* (Dec. 10, 1997), available at https://ceq.doe.gov/docs/ceq-regulations-and-guidance/regs/ej/justice.pdf.

- Distressed neighborhoods
- High transportation cost burden and/or low transportation access
- Disproportionate environmental stressor burden and high cumulative impacts
- Limited water and sanitation access and affordability
- Disproportionate impacts from climate change
- High energy cost burden and low energy access
- Jobs lost through the energy transition
- Access to healthcare

In determining which variables to consider, agencies should consider the statutory authority for covered programs. In addition to the above definition of disadvantaged communities, geographic areas within Tribal jurisdictions should be included.

II. Covered Programs

Agencies should work with OMB, as outlined in section IV, to review and determine whether Federal programs fall within the scope of the Justice40 Initiative. Agencies should contact their OMB Resource Management Office or email EJ@omb.eop.gov to consult on the determination of covered programs.

A. **Covered Program**. A "covered program" is a Federal Government program that makes covered investment benefits in one or more of the following seven areas:

i. Climate change
ii. Clean energy and energy efficiency
iii. Clean transportation
iv. Affordable and sustainable housing
v. Training and workforce development (related to climate, natural disasters, environment, clean energy, clean transportation, housing, water and wastewater infrastructure, and legacy pollution reduction, including in energy communities[6])
vi. Remediation and reduction of legacy pollution
vii. Critical clean water and waste infrastructure

B. **Covered Investments**. A "covered investment" is a Federal investment in one or more of the following categories:

i. Federal financial assistance as defined at 2 CFR 200,[7] including both Federal grants as well as other types of financial assistance (including loans, credit, guarantees, or direct spending/benefits);
ii. Direct payments or benefits to individuals;
iii. Federal procurement benefits (acquisition of goods and services for the Federal government's own use);

[6] Energy communities, as discussed in Executive Order 14008, include coal, oil, and gas and power plant communities.
[7] 2 CFR 200 Subpart A §200.1 (Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards) defines Federal financial assistance.

iv. Programmatic Federal staffing costs (e.g. federal pay for staff that provide technical assistance); and
v. Additional federal investments under covered programs as determined by OMB.

When appropriate and within existing statutory authorities, eligible investments of covered programs include: FY 2021 enacted appropriations, supplemental appropriations, prior year carryover from unobligated balances, and (when they become available) future fiscal year appropriations.

III. **Examples of Benefits of Covered Programs**

Benefits include direct and indirect investments (and program outcomes) that positively impact disadvantaged communities.

Table 1 provides a summary of additional examples of benefits of covered investments identified by the WHEJAC and the White House Environmental Justice Interagency Council (IAC) to be considered by agencies when determining the benefits of covered program.

Table 1

Category	Example Benefits When Applied for (or within) Disadvantaged Communities

Climate Change	• Reduction of greenhouse gas (GHG) emissions and local air pollutants[8]
	• Creation of community resilience plans that specifically include addressing needs of disadvantaged communities
	• Increased technical assistance and community engagement of disadvantaged communities
	• Increased flood mitigation Benefits
	  • Hectares of floodplain restored
	  • Hectares of wetlands restored
	  • Green stormwater infrastructure
	  • Urban flood risk mapping addressing the distribution of socially vulnerable communities and risks

[8] For example, program expenditures to reduce air pollution generated by one state or locality that benefit "down wind" disadvantaged communities or in, such as, installing a control device on an incinerator that reduces exposure to harmful pollutants in a disadvantaged community in a neighboring state.

	• Increased urban heat island effect mitigation benefits
	  • Increased acres of greenspace restored
	  • Increased tree and vegetation cover and sustainable shade coverage
	• Increased access to and advancement of public health warnings (weather and preparedness messages) translated into multiple languages

Clean Energy and Energy Efficiency	• Increased energy efficiency programs and resources • Deployment of clean energy, including renewable community energy projects • Establishment of community microgrids • Reduction of energy burden (e.g. the share of household income spent on home energy costs)
Clean Transportation	• Improvement in public transportation accessibility, reliability, and options • Reduction of exposure to harmful transportation-related emissions • Access to clean, high-frequency transportation • Access to affordable electric vehicles, charging stations, and purchase programs • Increased bicycle and walking paths
Affordable and Sustainable Housing	• Availability and access to affordable green housing • Reduction in displacement • Improved indoor air quality • Improved housing quality and safety and enhanced public health • Reduction in abandoned or vacant homes • Reduced housing cost burden

Training and Workforce Development	• Increased participation in clean energy good job training and subsequent good job placement/hiring, including providing the free and fair chance to join a union and collectively bargain. • Increased participation in good job training programs that target participation from disadvantaged communities, including formerly incarcerated individuals and youth transitioning out of foster care • Increased climate-smart training, including training to identify waste, efficiencies, and GHG inventories. • Increased percentage of good job training programs within energy communities, such as those that include paid employment and that measure and report participant outcomes.
Remediation and Reduction of Legacy Pollution	• Reduction of criteria air pollutant and toxic air pollutant exposure • Reduction in farmworker exposure to pesticides • Brownfield redevelopment • Remediation of Superfund sites • Community engagement training; capacity support for reduction strategies • Reclamation of abandoned mine lands and capping of orphan oil and gas wells
Development of Critical Clean Water Infrastructure	• Replacement of lead service lines • Increased access to safe drinking water and sanitary sewer services • Reduction in waterborne and respiratory illnesses • Reduction in the quantity of raw sewage discharged • Increase in the number of community water systems that meet applicable health-based standards

Building on program metrics and engagement with state and community partners, the WHEJAC, and the IAC, and other groups including the Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization, OMB will work with CEQ and USDS to develop and publish a common set of metrics to measure select benefits across agencies, e.g., improvements in air quality.

IV. **Calculating Benefits**

Executive Order 14008 states that "40 percent of the overall benefits" of federal investments from covered programs should flow to disadvantaged communities. To respond to that directive, each agency should establish a methodology for calculating the benefits that a) flow from each applicable covered program and b) accrue in disadvantaged communities from each covered program.

A. **Benefits Methodology**. The determination of what constitutes a "benefit" will vary by covered program. Accordingly, each agency is directed to:

i. Within 60 days of the issuance of this guidance, to deliver to OMB:
   a. An assessment of agency programs (referencing the list of programs in Appendix B) that are covered programs in accordance with section II.A and II.B of this guidance; and
   b. A description of the types of benefits that result from the identified covered programs.

ii. Within 150 days of the issuance of this guidance deliver to OMB a methodology for calculating the covered program benefits accruing to disadvantaged communities. This methodology should also include a description of the metrics that the agency is developing to measure covered program benefits.[9]

B. **Stakeholder Consultation**. When determining the benefits of a covered program, as specified in section IV(A), agencies should consult with stakeholders, including state, local, and Tribal governments, as well as Native communities, to ensure public participation and that community stakeholders are meaningfully involved in what constitutes the "benefits" of a program. In addition, if the calculation of a benefit to a disadvantaged community includes investments outside of that community, the disadvantaged community should be consulted. In engaging with stakeholders, agencies should consider their obligation under Title VI of the Civil Rights Act of 1964 to ensure meaningful access for individuals with limited English proficiency (LEP), as well as their

[9] It may not be possible to accurately measure the allocation of covered program benefits based solely on the geography where the program expenditures occur. Accordingly, agencies should actively consider the purpose of the covered program when determining whether covered program benefits have accrued to disadvantaged communities. For example, an energy efficiency program that provides weatherization assistance to individual households may need to analyze the allocation of program benefits by tracking the characteristics of recipient households, rather than relying on geographic indicators. Programs that distribute grants to states and territories that then distribute funds to households may need to work with such states and territories to obtain additional information about the ultimate distribution of federal funding and benefits.

obligation pursuant to Section 504 of the Rehabilitation Act to take appropriate steps to ensure effective communication for individuals with disabilities. Where applicable, agencies should also comply with, the Paperwork Reduction Act, Federal Advisory Committee Act, or other relevant law, regulation, or guidance. Agencies should also review and incorporate, where appropriate, recommendations from the WHEJAC and the IAC when developing metrics. (Examples of Stakeholder Engagement Plans will be available to agencies on the MAX Justice40 page.)

V. **Reporting**

Agency heads are responsible for calculating the accrual of covered program benefits to disadvantaged communities. Agencies should consult with OMB when determining whether their program is a covered program. Consistent with section IV, agencies shall report the following information to OMB for each covered program within 60 days and 150 days of the issuance of this guidance, as specified, and annually thereafter.

A. Within 60 days of the issuance of this guidance agencies shall report:

i. Agency
ii. Program
iii. Program ID (for financial assistance programs, this should be the assistance listing as defined in 2 C.F.R. § 200.203[10])
iv. Amount Appropriated
v. Amount Obligated[11]
vi. Developed Stakeholder Engagement Plan (y/n)

B. Within 150 days of the issuance of this guidance agencies shall report:

vii. Benefit Methodology Submitted (y/n)
viii. Benefit Methodology Submitted (date)
ix. Target Benefits of Program (qualitative list of types of targeted benefits)
x. Percent of Benefits Directed to Disadvantaged Communities (e.g., percent new waste water systems installed in disadvantaged communities of total waste systems installed)
xi. Percent of Benefits Not Directed to Disadvantaged Communities (e.g., percent new waste water systems not installed in disadvantaged communities)
xii. Percent of Benefits with Unknown Direction (e.g., a percentage of waste water systems with unknown installation location), including a brief explanation of why the percent of benefits to disadvantaged communities cannot be determined
xiii. Line Item Data for the Geographic Distribution of Benefits and Program Funding (e.g., a table of data with rows for the census block groups served

[10] Assistance listings refers to the publicly available listing of Federal assistance programs managed and administered by the General Services Administration. Assistance listings are detailed public descriptions of federal programs that provide grants, loans, scholarships, insurance, and other types of assistance awards.
[11] As obligation amounts change over time, agencies should update this reported amount semi-annually.

by each waste water system installation and the locations that received funding for that installation)[12]

a. For programs that do not target benefits geographically, the data provided should reflect the common characteristics of communities receiving benefits at the narrowest level that does not raise privacy concerns

xiv. Amount of Program Funding Received in Disadvantaged Communities (e.g. the dollars of funding received by a grant or loan recipient in a disadvantaged community)

Forthcoming guidance will provide additional information on the tool agencies should use to report the above information discussed in sections IV and V, and specific instructions for submitting the data into that tool.

The Administration's overall progress towards the Justice40 Initiative's goal will be tracked by the categories of covered project (climate change, clean energy and energy efficiency, clean transportation, affordable and sustainable housing, training and workforce development, the remediation and reduction of legacy pollution, and the development of critical clean water infrastructure).

VI. Pilot to Maximize Benefits to Disadvantaged Communities

In addition to the previously mentioned covered programs, Appendix A lists 21 programs that will undertake an initial implementation of the Justice40 Interim Implementation Guidance to maximize the benefits that are directed to disadvantaged communities. These programs were selected by reviewing WHEJAC recommendations, consulting with the IAC, and reviewing agency responses to information requests about current federal investments in disadvantaged communities.

The agencies with covered programs listed in Appendix A should identify applicable program funding mechanisms, policies, and procedures based on this guidance and consider program-specific guidance that provides recommendations for maximizing the benefits of the program that accrue in disadvantaged communities, as appropriate and consistent with applicable law. Specifically, the agencies with covered programs listed in Appendix A are directed to:

A. Develop a Stakeholder Engagement Plan. Within 30 days of issuance of this guidance, develop a plan to engage stakeholders relevant to the covered agency program. Plans should include a timeline for engaging relevant stakeholders, to include grantees and recipients, and a list of key issues relating to implementation of the Justice40 Initiative with respect to the covered program for stakeholder input. Plans should account for other stakeholder engagement efforts, including, but not limited to public involvement activities conducted pursuant to the National Environmental Policy Act and nation-to-nation consultations with

[12] Although this request includes the submission of detailed data, the calculation of several items listed already requires such data to exist, and this requirement asks the agency to also report the raw data used to make those calculations. Since disadvantaged communities in the CEJST will be defined at a very narrow geographic level, agencies need to prepare benefits and place of performance data at a narrow geographic level to perform these calculations. Agencies should report at the narrowest geographic unit possible.

Tribes. In addition, if the calculation of a benefit to a disadvantaged community includes investments outside of that community, the disadvantaged community should be consulted.

B. Justice40 Implementation Plan to Maximize Benefits. Within 60 days of issuance of this guidance, develop a draft implementation plan describing a) the agency's plan to maximize benefits of the covered program in disadvantaged communities; b) any significant barriers or constraints to maximizing benefits to disadvantaged communities; c) opportunities and/or resource needs that may address the identified barriers or constraints; and, d) timelines for achieving the milestones identified in the agency's plan.

C. Consider the Following Program Modifications to Maximize Benefits. When developing a Justice40 implementation plan to maximize benefits, that agency should consider the following guidelines, to the **extent consistent with statutory and constitutional requirements**, for modifying programs:

i. Foster well-paying job creation and job training, including a free and fair chance to join a union and collectively bargain.
ii. Coordinate investments and leverage funds where possible to provide multiple benefits and to maximize benefits.
iii. Avoid potential burdens to disadvantaged communities.
iv. Ensure transparency and accountability through full compliance with OMB requirements at 2 C.F.R. part 200 for financial assistance programs and provide public access to program information including through high quality data in compliance with Federal Funding Accountability and Transparency Act reporting (2 C.F.R. § 200.212).
v. Conduct outreach, and support technical assistance and capacity building to help potential applicants' access, manage, and report on results of funding.
vi. Hold competitive solicitations that prioritize or award extra points to projects that meet the criteria for benefiting disadvantaged communities and includes community engagement, planning, and feedback.
vii. When developing eligibility requirements in program guidelines and solicitation materials, establish targets or minimum thresholds for a specific benefit. For example, an agency could identify a certain percentage of total jobs for a project to be held by residents of a disadvantaged community in order to receive a higher priority for funding.
viii. Require applicants to apply cost savings from project implementation to benefit disadvantaged communities (e.g., energy cost savings reinvested in the local community to promote workforce development and community health).
ix. To the extent modifications are restricted by statute or regulation, describe what, if any, legislative changes would be required to advance the goals of Justice40 Initiative with respect to such covered program.

D. Calculating Benefits and Reporting. Within 60 days of issuance of this guidance, in line with section IV. A and V (but on the timeline specified in section VI.), provide a methodology for calculating, the covered program benefits

accruing generally and to disadvantaged communities. This methodology should also include a description of any additional metrics that the agency is developing to measure covered program benefits.

E. **Other Reporting.** The pilot programs listed in Appendix A should also plan to report the information outlined in section V.

Pilot programs should submit the requested information to EJ@omb.eop.gov by the stated deadlines. Agencies may also use EJ@omb.eop.gov to pose any questions regarding this guidance.

Appendix A. Justice40 Covered Program Pilot to Maximize Benefits to Disadvantaged Communities

Agency	Program
ARC	Partnerships for Opportunity and Workforce and Economic Revitalization (POWER)
DHS	Flood Mitigation Assistance Program
DHS	Building Resilient Infrastructure and Communities Program (BRIC)
DOE	Weatherization Assistance Program
DOE	Solar Energy Technologies Office (National Community Solar Partnership)
DOE	Vehicles Technologies Office (Clean Cities)
DOE	Environmental Management, Los Alamos
DOE	Advance Manufacturing Office (Industrial Assessment Centers)
DOI	Abandoned Mine Land Economic Revitalization (AMLER) Program
DOT	Bus and Bus Facilities Infrastructure Investment Program
DOT	Low or No Emissions Vehicle Program
EPA	Drinking Water State Revolving Fund
EPA	Clean Water State Revolving Fund
EPA	Brownfields Program
EPA	Superfund Remedial Program
EPA	Diesel Emissions Reductions Act Program (DERA)
EPA	Reducing Lead in Drinking Water
HHS	National Institute of Environmental Health Science (NIEHS) Environmental Career Worker Training Program
HHS	Low Income Home Energy Assistance Program (LIHEAP)
HUD	Lead Hazard Reduction and Healthy Homes Grants
USDA	Rural Energy for America Program

Appendix B. Internal Guidance for Agencies

A. Covered Program List

OMB has begun compiling a list of potential "covered programs" at https://go.max.gov/justice40. The programs listed have potential existing authorities that could be used to benefit disadvantaged communities. Agencies with covered programs are directed to begin examining (and consider modifications to) policies, practices, and procedures to implement the Administration's Justice40 goals. If an agency would like to request to add or remove a program from this list, please contact EJ@omb.eop.gov.

B. Agencies with Potential Covered Programs

Appalachian Regional Commission
Corporation for National and Community Service
Corps of Engineers--Civil Works
Delta Regional Authority
Denali Commission
Department of Agriculture
Department of Commerce
Department of Energy
Department of Health and Human Services
Department of Homeland Security
Department of Housing and Urban Development
Department of Justice
Department of Labor
Department of State
Department of the Interior
Department of Transportation
Department of Veterans Affairs
Environmental Protection Agency
National Aeronautics and Space Administration
National Science Foundation

ATTACHMENT G

Additional Items

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

QUARTERLY MEETINGS
FUTURE MEETING SCHEDULE

NOVEMBER 2021	
Location to be determined	
November 16	UMRBA Quarterly Meeting
November 17	UMRR Coordinating Committee Quarterly Meeting

FEBRUARY 2022	
Location to be determined	
February 22	UMRBA Quarterly Meeting
February 23	UMRR Coordinating Committee Quarterly Meeting

Acronyms Frequently Used on the Upper Mississippi River System

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

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

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

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

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	Preliminary Engineering and Design
PgMP	Program Management Plan
PILT	Payments In Lieu of Taxes
PIR	Project Implementation Report
PL	Public Law
PMP	Project Management Plan
PORT	Public Outreach Team
PPA	Project Partnership Agreement
PPT	Program Planning Team
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RCP	Regional Contingency Plan
RCPP	Regional Conservation Partnership Program
RDB	Right Descending Bank
RED	Regional Economic Development
RIFO	Rock Island Field Office (now IIFO - Illinois-Iowa Field Office)
RM	River Mile
RP	Responsible Party
RPT	Reach Planning Team
RRAT	River Resources Action Team
RRCT	River Resources Coordinating Team
RRF	River Resources Forum
RRT	Regional Response Team
RST	Regional Support Team
RTC	Report to Congress
S.	Senate
SAV	Submersed Aquatic Vegetation
SDWA	Safe Drinking Water Act
SEMA	State Emergency Management Agency

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