

## 2023 Exhibitors



For a full exhibitor list and more information go to  
<https://ccaps.umn.edu/minnesota-water-resources-conference/wrc-exhibitors>

## Poster Display

The poster session with poster presenters will be held on Tuesday evening, during the reception. The full list of over 25 poster presentations will be available in the book of abstracts.

# Minnesota Water Resources Conference

**October 17–18, 2023**

Saint Paul RiverCentre  
175 West Kellogg Boulevard  
Saint Paul, Minnesota

[ccaps.umn.edu/water](https://ccaps.umn.edu/water)

**Sponsored by:**

Water Resources Center

UNIVERSITY OF MINNESOTA

College of Continuing  
& Professional Studies

UNIVERSITY OF MINNESOTA

**Cosponsored by:**

Department of Civil Engineering, University of Minnesota  
Minnesota Section, American Society of Civil Engineers  
Minnesota Sea Grant College Program, University of Minnesota  
Natural Resources Research Institute, University of Minnesota



# Welcome

We are pleased to invite you to the 2023 Minnesota Water Resources Conference, October 17–18, at the RiverCentre in Saint Paul. This year's program builds on the momentum from our successful return to an in-person format last year, bringing the conference back to full capacity with interactive features made for a live audience.

Thanks to the large number of quality abstract submissions, you'll find the latest in research and design from over 100 presenters in breakout and poster sessions. Those presentations will be complemented by special sessions running throughout the conference on a rich variety of topics including stormwater, agricultural drainage, remote sensing, wetland mitigation, community engagement through art, and the digital transformation of the water resources workforce.

Posters are a growing and important medium for sharing results at the conference. They will be on display throughout the conference, but you won't want to miss the reception at the end of the first day, when you can interact with poster presenters, exhibitors, and other conference attendees in a relaxed setting. Based on favorable feedback from last year, a free drink ticket for the reception will be included in your registration.

We are especially excited about this year's keynote sessions. Headlining the conference this year are a plenary session talk on the health of the Mississippi River by Lori Sprauge from USGS, a panel discussion by Minnesota leaders on the future of drinking water, and a luncheon presentation by Paige Novak and Gudrun Lock on combining engineering and art at the University of Minnesota.

Finally, we warmly congratulate our 2023 award recipients. Mark Doneux and John Nieber will receive the Dave Ford Water Resources Award, and Madeline Nyblade will receive the Deborah L. Swackhamer Early Career Award.

We hope you can join us with the 800+ water resources professionals we expect at this year's conference.

*Jeffrey Peterson,*  
Water Resources Center, University of Minnesota,  
*Lorin Hatch,*  
AECOM,  
Conference Co-Chairs



# 2023 Water Resources Planning Committee

*Ann Banitt*, US Army Corps of Engineers

*Kari Benjamin*, Burns & McDonnell

*Jeff Berg*, Minnesota Department of Agriculture

*John Bilotta*, MN Sea Grant, University of Minnesota Extension

*Erik Brenna*, Minnesota Department of Transportation

*Tina Carstens*, Ramsey-Washington Metro Watershed District

*Brent Dalzell*, US Department of Agriculture

*Tracy Fallon*, Water Resources Center, University of Minnesota

*Leah Gifford*, SRF Consulting Group

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*Kimberly Hill*, St. Anthony Falls Laboratory, University of Minnesota

*Ryan Johnson*, City of Roseville

*Cheryel Keyser*, Water Resources Center, University of Minnesota

*Holly Wellard Kelly*, Natural Resources Research Institute, University of Minnesota Duluth

*Joel Larson*, Water Resources Center, University of Minnesota

*Ron Leaf*, Kimley-Horn and Associates

*Drew McGovern*, Hennepin County

*Salam Murtada*, Department of Natural Resources, Division of Waters

*Randy Neprash*, Minnesota Cities Stormwater Coalition

*Alycia Overbo*, Source Water Protection, Minnesota Department of Health

\* *Jeffrey Peterson*, Water Resources Center, University of Minnesota

*Emily Resseger*

*Wayne Sicora*, Natural Resource Group

*Jim Stark*, Minnesota State Legislature

*Jared Trost*, US Geological Survey

*Rick Voigt*, Voigt Consultants, LLC

*David Wall*, Minnesota Pollution Control Agency

*Marcey Westrick*, Minnesota Board of Soil and Water Resources

*Greg Wilson*, Barr Engineering Company

\*Committee Co-Chairs

# General Information

Immerse yourself in innovative, practical, and applied water resource engineering solutions, management techniques, and current research about Minnesota's water resources. The Minnesota Water Resources Conference is an opportunity to address:

- lessons learned from the implementation of engineering projects.
- best practices discovered in the design and application of water resource management techniques.
- implications of water policy decisions research into current and emerging issues.

## Registration and Fees

### Early registration (before September 18)

Two-day – \$325

One-day – \$300

Student – \$75

### Late registration (starting September 18)

Two-day – \$375

One-day – \$350

Student – \$100

The registration fee for the Minnesota Water Resources Conference includes access to all plenary, luncheon, and concurrent sessions; special sessions; poster sessions; conference materials; lunch and refreshment breaks each day; and the Tuesday evening reception. Participants may register online for one or both days.

## Cancellations

If you need to cancel your registration, a refund (minus \$50) will be issued if you cancel on or before October 2, 2023. Cancellations after this date will not be eligible for a refund, but we may be able to substitute a colleague in your place. Please email [ccapsreg@umn.edu](mailto:ccapsreg@umn.edu) to cancel your registration. The University reserves the right to cancel the conference, if necessary, in which case a full refund would be made.

The University of Minnesota shall provide equal access to and opportunity in its programs, facilities, and employment without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression.

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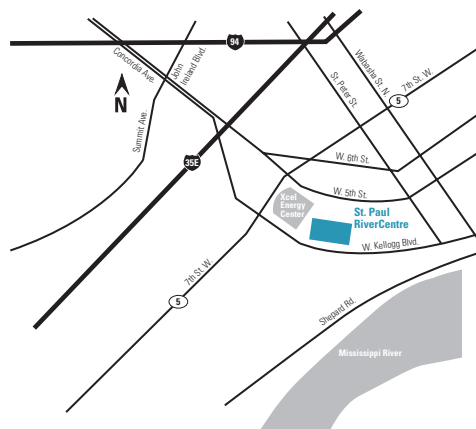
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## Continuing Education Units (CEUs); Professional Development Hours (PDHs)

Conference attendees will receive 0.675 CEUs/6.75 PDHs for each day of the Minnesota Water Resources Conference. Participants who wish to receive full credit must attend all scheduled hours of the event.

## Location and Parking

The Water Resources Conference will be held at the Saint Paul RiverCentre, 175 Kellogg Boulevard, Saint Paul. Parking is available in the RiverCentre parking ramp, which is located on Kellogg Boulevard across the street from RiverCentre. Please see the map for the location of RiverCentre. Convenient bus service to the RiverCentre is available: call Metro Transit at 612-373-3333 for specific route information.



## For Registration Questions

612-625-2900

[ccapsreg@umn.edu](mailto:ccapsreg@umn.edu)

## For Program Questions

Paul Engels

University of Minnesota

[ccapsconf3@umn.edu](mailto:ccapsconf3@umn.edu)

X

(formerly known as  
Twitter) We're on X

#MNWRC23

to continue this year's  
conference conversation.

## Dave Ford Award

The Dave Ford Award honors a person for significant long-term achievement or public service in Water Resource management who exhibits the collaborative leadership style of Dave Ford. While the award is generally for lifetime achievement, it (or some other recognition) can be given to an individual for a particularly important one-time contribution to Minnesota Water Resources.

The award is for professionals and other related disciplines working in water resources. Nominees can be from any discipline and can represent work such as research, administration, engineering, etc. Politicians and current members of the Planning Committee are excluded.

### Recipients of the Earl Kuehnast Award

Year	Recipient
1986	Earl Kuehnast
1987	Ed Bowers
1991	Peter Fischer
1992	Howard Midje
1999	Ron Nargang

### Recipients of the renamed Dave Ford Water Resources Award

Year	Recipient
2003	Heinz G. Stefan
2005	Marcel Jouseau
2006	Ron Harnack
2007	Patrick Brezonik
2008	Steve Heiskary
2009	James L. Anderson
2010	Nels Nelson
2011	Timothy Scherkenbach
2012	Barbara Liukkonen
2013	John Gulliver
2014	Roland Sigurdson
2015	Bruce Wilson (RESPEC)
2016	Cliff Aichinger
2017	Dan R. Engstrom, Kent Johnson
2018	Suzanne Jiwani
2019	Al Kean, Bruce Montgomery
2020	Deb Swackhamer
2021	Mike Trojan
2022	Rebecca Flood, Andrea Hendrickson

*For more information on the award, recipients' bios, and how to nominate, go to [ccaps.umn.edu/minnesota-water-resources-conference/dave-ford-award](https://ccaps.umn.edu/minnesota-water-resources-conference/dave-ford-award)*



## Dave Ford Award Recipients

### **John Nieber,**

Department of  
Bioproducts  
and Biosystems  
Engineering  
University of Minnesota



John Nieber has a record of outstanding achievements in the management of water resources. This record includes significant contributions in teaching, research, and public service. As a professor in the Department of Bioproducts and Biosystems Engineering at the University of Minnesota, John has served as teacher and mentor for hundreds of students. His pedagogical approach blends theoretical rigor with the realities of complex watersheds. John has provided invaluable leadership in the Water Resources Science graduate program serving as the Director of Graduate Studies. The breadth of his research is amazing, with projects ranging from the determination of water storage volume across Minnesota landscapes to the rigorous analysis of “fingering” caused by instabilities in unsaturated flows. John has been a leader in establishing professional registration for hydrologists. He has served on the Executive Committee and as President of the American Institute of Hydrology. John’s collaborative leadership has resulted in strong working relationships with professionals working in academe, governmental agencies, nonprofit organizations, and consulting firms. He has inspired us to reach higher and work smarter.

### **Mark Doneux,**

Capitol Region  
Watershed District



Mark Doneux has dedicated his career to protecting Minnesota waters. Mark is an innovator who has, alongside of partners and staff, led cutting-edge projects including rainwater harvesting and reuse at CHS and Allianz Fields; shared stormwater systems at Highland Bridge that capture and clean 64 million gallons of runoff annually; rain gardens, stormwater planters, and the country’s longest integrated tree trench system along University Avenue; and CRWD’s LEED Gold building in the Hamline-Midway neighborhood of Saint Paul.

As leader of the most densely populated and diverse watershed district in Minnesota, Mark led CRWD to create its first Diversity, Equity, and Inclusion Plan. This work has resulted in significant changes to hiring, contracting, professional development offerings, and community engagement. During Mark’s tenure, CRWD also created a Watershed Artist in Residence Program that has resulted in engaging residents in new and creative ways.

Mark’s involvement as chair of the Water Environment Federation and Central States Water Environment Association Stormwater Committees ensures Minnesota innovations influence practitioners across the country and brings new ideas back to local professionals. Mark also served as co-chair of the Minimal Impact Design Standards (MIDS) committee that brought forth a recommendation for a statewide 1.1-inch volume reduction standard and the MIDS Calculator.

Mark’s greatest legacy will be the impact he’s left on people he’s mentored, ensuring they have the tools necessary to achieve goals, supporting their advancement into leadership roles, and trusting them to do quality work and create lasting relationships.

# Deborah L. Swackhamer Early Career Award

A longtime professor and administrator at the University of Minnesota, Deborah (Deb) Swackhamer was among the leading voices in the nation at the intersection of science, policy, and water resources. She conducted influential scientific work on the behavior of organic pollutants and endocrine-disrupting chemicals. In the broader water resources community, she is remembered for her advocacy of scientific integrity and for incorporating science-based knowledge into policy making. This work elevated her to numerous leadership roles at the state, national, and international levels. During her career, Deb mentored students and young faculty and ardently supported them, challenging them to conduct rigorous science, guiding them to successful careers and connecting them with colleagues in her network.

Following Deb's untimely passing in 2021, the Minnesota Water Resources Conference committee approved a new award to be given in her name. In remembrance of her commitment to early career scientists and professionals, as well as her example of authentic leadership, the Deborah L. Swackhamer Early Career Award is meant to spotlight future leaders in the understanding, management, and care of our water resources.

*For more information on the award, recipients' bios, and how to nominate, go to [ccaps.umn.edu/minnesota-water-resources-conference/swackhamer-award](https://ccaps.umn.edu/minnesota-water-resources-conference/swackhamer-award)*

## Madeline Nyblade

Deborah L. Swackhamer Early Career Award Recipient Maddy Nyblade is completing her PhD in the Department of Earth & Environmental Sciences at University of Minnesota Twin Cities. Maddy has distinguished herself by pushing the boundaries of hydrology to tackle critical challenges faced by Minnesota tribes, whose priorities and perspectives have long been marginalized. As a settler scientist, she plays a key role in a collaborative between university researchers and tribal partners around the Upper Great Lakes, including Fond du Lac, Mille Lacs, St. Croix, and Lac du Flambeau Bands and the 1854 Treaty Authority and Great Lakes Indian Fish & Wildlife Commission. Her work focuses on protecting Manoomin (Ojibwe)/Psin (Dakota), or wild rice, an aquatic plant that holds profound significance to Indigenous peoples throughout the region. Her recent book chapter presents innovative approaches that address the challenge of respectfully interfacing hydrological science and Indigenous knowledge. She has implemented these

approaches to generate the first quantitative evidence of hydroclimatic change negatively impacting wild rice.

Through this research and beyond, Maddy is committed to advancing justice, equity, diversity, and inclusion, particularly to stop and reverse harms inflicted by settler academic institutions on Indigenous peoples. Her article in the widely read *Eos* newsletter about the consequences of geological mapping for Minnesota tribes helped prompt a new, more ethical mapping policy on tribal lands in Minnesota.





# Program Schedule Tuesday, October 17, 2023

8:00-9:30	<b>Welcome and Morning Plenary</b> <b>Minnesota's Drinking Water Sustainability, Threats, and the Future</b> Presenters: <i>Tannie Eshenaur</i> , Minnesota Department of Health; <i>A. Marcelle Lewandowski</i> , Water Resources Center Panelists: <i>Jeff Broberg</i> , Minnesota Well Owners Organization; <i>Jon Eaton</i> , City of Eagan; <i>Caitlyn Meyer</i> (formerly Brady), Olmsted Soil and Water Conservation District; <i>Lori Blair</i> , MN Rural Water Association				
9:30-10:00	Poster and Vendor Refreshment Break				
Concurrent Session I - See the Book of Abstacts for the full description of sessions.					
Tuesday	Track A	Track B	Track C	Track D	Track E: Special Sessions
	Meeting Room 4-6	Ballroom A	Ballroom E	Meeting Room 7-9	Meeting Room 1-3
10:00-11:30	<b>Stormwater Mgmt. Tools &amp; Techniques</b>	<b>Agricultural Water Management</b>	<b>Assessing Contaminants in Minnesota Surface Waters</b>	<b>Tools and Planning for a Changing Climate</b>	<b>The Changing Mindset of Work: How Values and Opportunities Shape a Digital-Ready Workforce</b> <i>Tracy Fallon, Jeffrey Stamp</i> , University of Minnesota
10:00-10:20	1112: West Riverside Energy Center: How Nature Based Solutions Supported Envision Platinum Verification <i>Michael Ryan</i> , HDR Engineering, Inc.	1007: Examining Chloride in an Agricultural Watershed Using a Mass Balance and Simple Hydrologic Model <i>Alycia Overbo</i> , Minnesota Department of Health	1005: Evaluation of Neonicotinoids in Minnesota Surface Water <i>David Tollefson</i> , Minnesota Department of Agriculture	1023: Climate-Ready Stormwater Ponds in Hennepin County: A Proactive Future Conditions Study <i>Kris Guentzel</i> , Hennepin County	
10:20-10:40	1087: Introducing a Tool for Assessing Phosphorus Retention in Stormwater Ponds <i>Ben Janke</i> , University of Minnesota	1008: Agricultural Drainage Projects: Why They Happen and Solutions That Protect Water Downstream <i>Chuck Brandel, Jacob Rischmiller</i> , ISG	1014: The Minneapolis Pathogen Toolbox <i>Shahram Missaghi</i> , City of Minneapolis	1004: Potential Hydrologic Impacts from Trends in Intense Rainfall and... <i>Jason Ulrich</i> , Science Museum of Minnesota	
10:40-11:00	1105: Patterns in Stormwater Pond Sediment Chemistry in the Twin Cities Metropolitan Area <i>Joseph Bischoff</i> , Barr Engineering	1001: Does Soil Health Management Influence Water Infiltration <i>Limeimei Xu</i> , University of Minnesota	1093: Piloting an Enhanced E. coli Source Assessment on Five Impaired Lake Superior Beaches <i>Kaity Taylor, Lindsey Krumrie</i> , MPCA	1083: Surface Water and Ocean Topography (SWOT) Satellite and Minnesota Applications <i>Katy Thompson, Jamil Ibrahim</i> , Stantec	
11:00-11:20	1104: Litter From Urban Street Trees Is a Significant Portion of N and P Loads to Stormwater Throughout the Year. <i>Erin Mittag</i> , University of Minnesota	1003: Assessing the Effects of Agricultural Management Systems on Soil Architecture and Soil Moisture in Southern Minnesota <i>Bailey Tangen</i> , University of Minnesota	1039: Antibiotics in Minnesota Surface Water: Results from Ten Years of Monitoring <i>Mark Ferrey</i> , Minnesota Pollution Control Agency	1035: Rice Creek Climate Change Floodplain Resiliency <i>Bret Zimmerman</i> , Houston Engineering, Inc.; <i>Kendra Sommerfeld</i> , Rice Creek Watershed District	
11:20-11:30	Q&A	Q&A	Q&A	Q&A	
11:30-12:15	Lunch				
12:15-1:00	Luncheon Session Awards Ceremony and Poster Session				

# Program Schedule Tuesday, October 17, 2023 continued

Concurrent Session II – See the Book of Abstracts for the full description of sessions.					
Tuesday	Track A	Track B	Track C	Track D	Track E: Special Sessions
	Meeting Room 4-6	Ballroom A	Ballroom E	Meeting Room 7-9	Meeting Room 1-3
1:15–2:45	<b>BMPs for Stormwater Quantity and Quality</b>	<b>Water and Agriculture: Cover Crops and Decision Support Tools</b>	<b>Tools and Policies for Contaminants of Emerging Concern</b>	<b>Flood Resiliency Planning and Implementation</b>	<b>Engaging Communities and Changing Systems Around Drinking Water Through Art</b> Panelists: Stephanie Hatzenbihler, Stearns County Soil and Water Conservation District; Alycia Overbo, Minnesota Department of Health; Anna Claussen, Voices for Rural Resilience; Alexander Keilty, Lake Pepin Legacy Alliance  See session description in the book of abstracts
1:15–1:35	1088: RWMWD Targeted Retrofit Program Paige Ahlborg, Ramsey-Washington Metro Watershed District; Marcy Bean, Barr Engineering	1010: Assessing the Environmental and Economic Impacts of Continuous Living Cover (CLC) Crops Over Time. Trevor Russell, Friends of the Mississippi River	1042: St. Louis River Watershed Mercury Total Maximum Daily Load Analysis Madeline Keefer, Tetra Tech	1030: Davenport’s Flood Resiliency Plan Teresa Stadelmann, HR Green, Inc.	
1:35–1:55	1068: Biochar as a Stormwater Filter Media Amendment: What’s the Verdict? Justine Dauphinais, Chase Vanderbilt, Coon Creek Watershed District	1006: Advancing Cover Crop Adoption-Advice from the Field Kimberly Musser, Water Resources Center, Minnesota State University, Mankato	1038: Statewide PFAS Testing Initiative at the Minnesota Department of Health Jane de Lambert, Minnesota Department of Health	1080: Future Development Stormwater Planning? How to Plan for Growth in a Community Rapidly Developing from Rural to Urban Tony Miller, Luke LaMoore, AE2S	
1:55–2:15	1051: Standardizing Back-up Connections for Stormwater Reuse Irrigation to Lower Risk Laura Wehr, AE2S; Ben Guell, City of Woodbury	1009: Cover Crops and Living Mulches Effects on Irrigated Corn-Soybean Production Systems... Eduardo Garay Lagos, University of Minnesota	1109: Introducing the Low Salt, No Salt Minnesota program Jessica Wilson, City of Edina; Liz Forbes, Riley Purgatory Bluff Creek Watershed District	1081: Morningside Flood Infrastructure Project – Diving into a New Era... Marcy Bean, Sarah Stratton, Barr Engineering	
2:15–2:35	1111: Stormwater Treatment with a Manufacturing Byproduct John Gulliver, University of Minnesota	1002: DAWN (Dashboard for Agricultural Water Use and Nutrient Management)... Melissa Kenney, University of Minnesota	1040: Hold the Salt: A GIS Tool to Help Winter Maintenance Salt Reduction Mark Gallagher, SRF Consulting Group	1031: Strategies for Managing a Stormwater Utility Ross Bintner, City of Edina	
2:35–2:45	Q&A	Q&A	Q&A	Q&A	
2:45–3:15	Poster and Vendor Refreshment Break				

# Program Schedule Tuesday, October 17, 2023 continued

Concurrent Session III – See the Book of Abstracts for the full description of sessions.					
Tuesday	Track A	Track B	Track C	Track D	Track E: Special Sessions
3:15-4:45	<b>Green Infrastructure and Stormwater</b>	<b>Watershed Planning &amp; Management</b>	<b>Causes and Solutions for Harmful Algal Blooms</b>	<b>Reducing and Prioritizing Flood Risk</b>	<b>Wetland Workshop</b> <i>Jennie Skancke, Amy Kendig, Minnesota Department of Natural Resources; Kenneth Powell, Thomas Wenzel, Minnesota Board of Water &amp; Soil Resources; Rebecca Beduhn, Short Elliott Hendrickson Inc.; Tim Smith, Aquic, LLC</i>
3:15-3:35	<b>1113: Permanent BMP Maintenance: Implementing Inspections for BMP Success</b> <i>Mary Fitzgerald, Ramsey-Washington Metro Watershed District</i>	Abstract withdrawn. See up-to-date schedule on website	<b>1034: Harmful Algal Blooms in Remote Lakes Require Management Strategies...</b> <i>Amelia Wilson-Jackson, Science Museum of Minnesota</i>	<b>1059: Storing Water in the Lake-Flood-Risk Reduction on the Phalen Chain of Lakes</b> <i>Paige Ahlborg, Ramsey-Washington Metro Watershed District; Brandon Barnes, Barr Engineering Co</i>	
3:35-3:55	<b>1106: Development of a Non-City Owned Stormwater Infrastructure...</b> <i>Jessica Wilson, City of Edina; Nathan Campeau, Aaron Mielke, Barr Engineering Company</i>	<b>1026: Priority Lakes: Meeting Protection Goals and Multiplying Benefits</b> <i>Crystal Mathisrud, Hubbard County SWCD</i>	<b>1047: ...Successful Application of Hydrogen Peroxide for Proactive Algal Management</b> <i>Elizabeth Crafton-Nelson, Hazen and Sawyer</i>	<b>1057: ...Lessons Learned Operating Adjustable Lake Outlet Control Structures</b> <i>David Vlasin, Ramsey-Washington Metro Watershed District; Brandon Barnes, Barr Engineering Co</i>	
3:55-4:15	<b>1054: Benefits of a Residential Stormwater Management Grant Program</b> <i>Jennifer Ehlert, Metro Blooms; Erick Francis, City of St. Louis Park</i>	<b>1118: Watershed Restoration and Protection Strategies (WRAPS)...</b> <i>Heather Johnson, Wetland Workshop; Theresa Haugen, Minnesota Pollution Control Agency</i>	<b>1061: Water Quality Drivers of Harmful Algal Blooms in Cedar Lake and Lake Nokomis</b> <i>Katelynn Chamberlin, Minneapolis Park and Recreation Board</i>	<b>1078: ...How Burnsville Leveraged their Watershed Model to Create an Impactful Stormwater Project</b> <i>Luke M LaMoore, Justin Klabo, AE2S</i>	
4:15-4:35	<b>1053: Plants for Stormwater Design...</b> <i>John Bly, Metro Blooms; Dan Shaw, BWSR</i>	<b>1116: Total Maximum Daily Load Studies in Minnesota</b> <i>Andrea Plevan, Minnesota Pollution Control Agency</i>	<b>1069: Translating Successful Reservoir Restoration Methods to Lakes in Minnesota</b> <i>David Austin, Jacobs Solutions</i>	<b>1032: Designing GSI to Adapt with a Changing Climate</b> <i>Ben Crary, Hazen and Sawyer</i>	
4:35-4:45	Q&A	Q&A	Q&A	Q&A	
4:45-5:45	Reception, Vendor, and Poster Session				

# Program Schedule

Wednesday, October 18, 2023

8:00-9:30	<b>Welcome and Morning Plenary</b> <b>The Mighty Mississippi Through the Lens of Nutrients and Gulf Hypoxia: How Does Minnesota Fit In?</b> <i>Lori Sprague, US Geological Survey, Water Mission Area</i>				
9:30-10:00	Poster and Vendor Refreshment Break				
Concurrent Session IV - See the Book of Abstacts for the full description of sessions					
Wednesday	Track A	Track B	Track C	Track D	Track E: Special Sessions
	Meeting Room 4-6	Ballroom A	Ballroom E	Meeting Room 7-9	Meeting Room 1-3
10:00-11:30	<b>Improved Modeling and Tools for Water Management</b>	<b>Lake Management Successes</b>	<b>Human Dimensions</b>	<b>Designing and Building Resilient Infrastructure</b>	<b>Assessing BMP Effectiveness for Water Quality Outcomes with Remote Sensing</b> <i>Kevin Silverstein, Brad Jordahl Redlin, Minnesota Department of Agriculture; Leif Olmanson, David Porter, University of Minnesota; Yu Shing Cheng, The Ohio State University</i>  Co-Authors: <i>Daniela Miteva, Derric Pennington, Amit Pradhananga</i>
10:00-10:20	1084: Integration of Multiple Watershed Based Models... <i>Matt Drewitz, MPCA</i>	1098: ...Route to Sweeney Lake Delisting Follows Long and Winding Path <i>Greg Wilson, Barr Engineering Co.</i>	1052: Waadookawaad Amikwag (Those Who Help Beavers) Combines Anishinaabe Indigenous Knowledge... <i>Jeffrey Broberg, Victoria McMillen, Waadookawaad Amikwag</i>	1036: Assessing Stormwater Adaptations for Extreme Rainfall Events <i>Noah Gallagher, University of Minnesota</i>	
10:20-10:40	1055 Saving Lily Lake: A Neighborhood Landmark <i>Jay Michels, EOR, Inc.;</i>	1018: Reestablishing Como Lake's Aquatic Plant Community... <i>Britta Belden, Eoghan O'Neill, Capitol Region Watershed District</i>	1082: Groundwater Emergence on the Lawrentian Divide... <i>Jeffrey Broberg, Brian Huberty, Ron Turney, Waadookawaad Amikiwag/ Indigieneous Environmental Network</i>	1022: MnDOT's Road to (Hydraulic) Resiliency: An Overview... <i>Rachel Pichelmann, Minnesota Department of Transportation</i>	
10:40-11:00	1090: How to Explain Storage-Discharge Hysteresis Within the Watershed Boundary... <i>Pai-Feng Teng, University of Minnesota</i>	Abstract withdrawn by author. See the website for up-to-date substitutions.	1058: Sustainable Aquaculture to Prevent Invasive Species and Increase Local Food Security <i>Amy Schrank, Minnesota Sea Grant</i>	1072: A Successful Approach to Floodplain Management- Lakeville 179th Street Bridge LOMR <i>Stephanie Thulien, Kimley-Horn; Zach Johnson, City of Lakeville</i>	
11:00-11:20	1011: Simulating Agricultural BMP Pollutant Removal with the Soil and... <i>Katie Kemmitt, Tom Beneke, Stantec</i>	1095: A New Tool and an Updated Inventory... <i>Steve Kloiber, Minnesota DNR</i>	Abstract withdrawn. See up-to-date schedule on website	1075: Development of a Channel Stabilization Project for the Benefit of Lake... <i>James Guler, Zach Cormican, Moore Engineering, Inc.</i>	
11:20-11:30	Q&A	Q&A	Q&A	Q&A	
11:30-12:15	Lunch				
12:15-1:00	<b>Luncheon Session</b> <b>Art and Engineering: A Partnership for the Planet</b> <i>Paige Novak, Department of Civil, Environmental, and Geo- Engineering, University of Minnesota; Gudrun Lock, Weisman Art Museum</i>				

# Program Schedule

Wednesday, October 18, 2023 continued

Concurrent Session V - See the Book of Abstracts for the full description of sessions					
Wednesday	Track A	Track B	Track C	Track D	Track E: Special Sessions
1:15-2:45	<b>Considerations for Implementing Green Stormwater Infrastructure</b>	<b>River Habitat and Connectivity</b>	<b>Connecting People with the Groundwater They Use</b>	<b>Contaminant Pathways and New Treatment Technologies for Municipal Wastewater</b>	<b>Adequate Outlet for Agricultural Drainage</b> <b>Speakers:</b> Rita Weaver, Minnesota Board of Water and Soil Resources; <b>Panel:</b> Chuck Brandel, ISG; Ethan Jenzen, DNR; Philip Solseng, Friends of the Mississippi, John Biren, Association of MN Counties
1:15-1:35	1063: Maintenance-Informed Green Infrastructure Design <i>Ryan Fucci, HDR, Inc.</i>	1020: The Effects of Dams on Native Fish Communities <i>Amy Childers, Minnesota Department of Natural Resources</i>	1089: Recent Advances in Groundwater Flow Modeling for Aquifer Protection in Minnesota <i>Trent Farnum, John Oswald, Minnesota Department of Health</i>	1074: Pilot Trials of Sulfate Reduction in Municipal Wastewater by Chemical Precipitation Technology <i>Sara Post; Shashi Rao, University of Minnesota</i>	
1:35-1:55	1029: ...Community-Driven GI That Considers Environmental Equity in Minneapolis <i>Allison Bell, City of Minneapolis; Bridget Osborn, HR Green</i>	1019: Reconnecting Rivers with Rock Arch Rapids Dam Modifications <i>Neil Haugerud, Minnesota Department of Natural Resources</i>	1048: Data Visualization as a Tool to Help Address Inequities Among Private Well Users <i>Deanna Scher, Minnesota Department of Health</i>	1114: Impact of the COVID-19 Pandemic on the Occurrence and Removal of Antibiotics During Wastewater Treatment <i>Zihang Wang, University of Minnesota</i>	
1:55-2:15	1065: Constructing Linear GSI: What's Working, What's Not, and What Might Be <i>Katie Kowalczyk, Allison Bell, City of Minneapolis</i>	1107: Evaluating Aquatic Organism Passage at Stream Crossings <i>Brady Schmitz, Anna Varian, Stantec</i>	1043: Findings from the First Minnesota Private Well Forum: A Call for Action <i>Frieda von Qualen, Tannie Eshenaur, Minnesota Department of Health</i>	1099: Quaternary Ammonium Compounds (QACs) in Wastewater... <i>Anna Mahony, University of Minnesota</i>	
2:15-2:35	1086: How to Be Everywhere at Once: The Development of a GSI Hybrid Construction and Inspection Guide for and with City Inspectors <i>Allison Bell, Katie Kowalczyk, City of Minneapolis</i>	1064: Bioengineering and Mussels-Enhancing the Lower St. Croix Ecosystem: Stillwater Riverbank Stabilization and Riverwalk <i>Zachary Morris, AMI Consulting Engineers; Shawn Sanders, City of Stillwater</i>	1049: Groundwater Age Distributions in Drinking Water Supply Management Areas <i>Jared Trost, USGS; Kimberly Kaiser, Minnesota Department of Agriculture</i>	1037: Trace Organic Contaminants in Wastewater Effluent: Comparison of Oxidation and Membrane Bioreactor Treatment Technologies <i>Sarah Elliott, US Geological Survey</i>	
2:35-2:45	Q&A	Q&A	Q&A	Q&A	
2:45-3:15	Poster and Vendor Refreshment Break				

# Program Schedule

Wednesday, October 18, 2023 continued

Concurrent Session VI – See the Book of Abstracts for the full description of sessions					
Wednesday	Track A	Track B	Track C	Track D	Track E: Special Sessions
3:15-4:45	<b>Redevelopment Green Infrastructure</b>	<b>Wetland Tools, Critical Peatlands, and New and Historic Impacts of Invasive Species on Aquatic Ecosystems</b>	<b>Water Quality - Implications for Drinking Water and Rivers</b>	<b>Innovative Monitoring Approaches</b>	<b>Should We Be Putting Greater Emphasis on Source Reductions?</b> <i>Jacque Finlay, Grace Wilson, University of Minnesota; Larry Baker, Randy Neprash, Connie Fortrin, Bolton &amp; Menk, Inc.</i>
3:15-3:35	1085: Brownfield to Headwaters: Comprehensive District Stormwater Analysis and Planning for the Highland Bridge <i>Bob Fossum, Capitol Region Watershed District</i>	1033: Minnesota's Peatlands—A Hidden Storehouse of Clean Water, Carbon and Critical Habitat <i>Suzanne Rhees, Minnesota Board of Water and Soil Resources; Chris Lenhart, University of Minnesota</i>	1050: Drinking Water Governance in Minnesota: Key Lessons from an In-depth Assessment <i>Lila Franklin, Freshwater</i>	1100: A Novel Suspended-Sediment Sampling Method: Depth-Integrated Grab (DIG) <i>Joel Groten, US Geological Survey</i>	
3:35-3:55	1071: Brownfield to Headwaters: Implementation of the Highland Bridge District Stormwater System <i>Nathan Campeau, Barr Engineering Co.</i>	1103: The Wetland Restoration Effectiveness Tool (WRET) for Predicting Nutrient Removal and Carbon Storage in Wetlands <i>Christian Lenhart, Laura Bender, University of Minnesota and The Nature Conservancy</i>	1046: Safe Drinking Water for Everyone, Everywhere in Minnesota <i>Tannie Eshenaur, Frieda von Qualen, Minnesota Department of Health</i>	1092: Satellite-Derived Water Quality Data from an Automated High-Performance Computing Environment for 10,000+ Minnesota Lakes <i>Leif Olmanson, University of Minnesota</i>	
3:55-4:15	1013: Connected Habitat, Public Places, and Surface Stormwater at Minneapolis's Upper Harbor <i>Daniel Kalmon, Mississippi Watershed Management Organization; Nathan Campeau, Barr Engineering</i>	1017: A Historic Look: Zebra Mussel-Induced Mercury Concentration Increases in Minnesota Fish <i>Denver Link, University of Minnesota</i>	1108: Long-term Changes in the Magnitude and Timing of Nutrient Loads in the Upper Mississippi River <i>Kathi Jo Jankowski, USGS</i>	1101: Iron-Enhanced Sand Filter Monitoring and Assessment Challenges <i>Sarah Wein, Capitol Region Watershed District</i>	
4:15-4:35	1110: BMP Mosaic, Meeting Standards with Multiple BMP Types and Reuse <i>Adam Tjaden, Kimley Horn</i>	1060: A New Aquatic Invasive in Minnesota: The Diatom <i>Didymosphenia</i> along Lake Superior's North Shore <i>David Burge, Science Museum of Minnesota; St. Croix Watershed Research Station</i>	1079: Assessing the English Coulee to Balance Water Quality and Flood Protection <i>Luke M LaMoore, Linda Severson, AE2S</i>	1094: Low-Cost Diagnostic Monitoring: A Water Quality Improvement Project Targeting Tool <i>Blayne Eineichner, Comfort Lake Forest Lake Watershed District</i>	
4:35-4:45	Q&A	Q&A	Q&A	Q&A	





