MINNESOTA WATER RESOURCES CONFERENCE

October 18–19, 2016
Saint Paul RiverCentre

wrc.umn.edu/waterconf
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Social Media: Join the Conversation

We invite you to join the conversation about the Minnesota Water Resources Conference by tweeting about the symposium, or posting updates to your LinkedIn and Facebook pages. The conference hashtag is #mnwrc16. Type this hashtag in your tweet posts to continue the conference “backchannel,” or you may also search Twitter for this hashtag to view the tweets online. These social media efforts will help participants network and meet new colleagues prior to and during the conference.

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

Conference attendees will receive .675 CEUs and 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.
Minnesota Water Resources Conference
October 18−19, 2016

This conference uses Pigeonhole Live for Q&A.
Pigeonhole Live is a simple, interactive mobile website where you can submit questions to speakers via your mobile web device. You can also vote on questions that interest you. Here’s how you can participate!

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MNWRC16

2016 Water Resources Planning Committee

John Baker, US Department of Agriculture, and Department of Soil, Water, and Climate, University of Minnesota
Ann Banitt, US Army Corps of Engineers
Jeff Berg, Minnesota Department of Agriculture
John Bilotta, MN Sea Grant, University of Minnesota Extension
Mark Brigham, US Geological Survey
Tina Carstens, Ramsey-Washington Metro Watershed District
Heather Dorr, College of Continuing Education, University of Minnesota
Bill Douglass, Bolton & Menk, Inc.
Lisa Goddard, SRF Consulting Group, Inc.
John Gulliver, Department of Civil, Environmental, and Geo-Engineering, College of Science and Engineering, University of Minnesota
Lorin K. Hatch, WSB and Associates
Andrea Hendrickson, Minnesota Department of Transportation
Karen Jensen, Metropolitan Council
Lucinda Johnson, Natural Resources Research Institute, University of Minnesota
Stephanie Johnson, Mississippi Watershed Management Organization
Ron Leaf, Short Elliott Hendrickson, Inc.
Zack McGough, College of Continuing Education, University of Minnesota
Salam Murtada, Department of Natural Resources, Division of Waters
Randy Neprash, Minnesota Cities Stormwater Coalition & Stantec
Jeffrey Peterson, Water Resources Center, University of Minnesota
Amit Pradhananga, Department of Forest Resources, University of Minnesota
Shawn Schottler, St. Croix Watershed Research Station
Wayne Sicora, Natural Resource Group
Faye Sleeper, Water Resources Center, University of Minnesota
Gene Soderbeck, Minnesota Pollution Control Agency
James Stark, U.S. Geological Survey
Katy Thompson, ASCE Representative and WSB & Associates, Inc.
Stew Thornley, Minnesota Department of Health
Rick Voigt, Voigt Consultants, LLC
Greg Wilson, Barr Engineering Company
Brad Wozney, Minnesota Board of Soil and Water Resources

* Committee Co-Chairs
Thank you to our exhibitors
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Program Schedule – Tuesday, October 18, 2016

8:00–8:10 a.m. Welcome Grand Ballroom
Jeff Peterson, Water Resources Center, University of Minnesota and Karen Jensen, Metropolitan Council

8:10–8:20 a.m. Dave Ford Water Resources Award

8:20–9:30 a.m. Plenary Session
The Flint Water Crises: Lessons for Improved Governance and Oversight
Chris Kolb, President of the Michigan Environmental Council and Co-chair of the Flint Water Advisory Task Force

9:30–10:00 a.m. Break Ballroom AB

10:00–11:30 a.m. Concurrent Sessions I

Track A Ballroom E
Special Session Panel Discussion Social Justice in Water Supply
Moderator: Wanda Kirkpatrick, Metropolitan Council, Director of Equal Opportunity Office
Co-Moderator: Andrea Hendrickson, Minnesota Department of Transportation
What is the impact to society of not providing high-quality water from water supply systems? Is Flint a symptom of a bigger problem? What are the issues, the disparities and what can be done about it? This session will convene a panel of experts to explore issues related to social justice in water supply. Following short presentations by the panelists there will be a moderated panel discussion and an opportunity for audience questions.
Ruth Hubbard, Minnesota Rural Water Association
Chris Kolb, Flint Water Advisory Task Force
Danette McCulley, Minneapolis Division
John Linc Stine, Commissioner, Minnesota Services of Water Treatment and Distribution

Track B Ballroom F
Managing Biota of Lakes and Streams
Moderator: Lorin Hatch, HDR Engineering, Inc
Co-Moderator: Lucinda Johnson, Natural Resources Research Institute, University of Minnesota
Assessment of Common Carp at a Watershed Scale and Implications for Management
Justice Daughnair, Reid Swanson, and Peter Sorensen, University of Minnesota
Role of Invasive Dreissenid Mussels in Restructuring Nutrient Dynamics in in Minnesota Lakes
Felicia Williamson, University of Minnesota Duluth
Restoration of Critical Trout Habitat in Remote Reaches of the Blackhoof River
John Lenczewski, Minnesota Trout Unlimited; Jason Nabar, Kevin Bliehn, and Luke Johnson, Emmons and Olivier Resources
Impact of Rainbow Trout Stocking Moratorium on Zooplankton Community Structure and Water Quality of Square Lake
Leif Hembre, Hamline University; Meghan Funke, Emmons and Olivier Resources, Inc; Jim Shaver, Camelion-Marine St. Croix Watershed District

Track C Rooms 1-3
Planning Sustainable Practices
Moderator: Bill Douglass, Bolton & Menk, Inc
Co-Moderator: Katy Thompson, WSB & Associates, Inc
Developing a Stormwater Reuse Irrigation Assessment Planning Tool to Reduce Reliance on Groundwater
Phil Befigio and Catherine Nester, Rice Creek Watershed District; Mark Deutchman, Rachel Olm, Kate MacDonald, and Drew Kessler, Houston Engineering, Inc
Cottageville Park: Integration of Land Use Planning and Natural Resources Improvements to Build Sustainable Communities
Renae Clark, Minnehaha Creek Watershed District; Chris Meehan, Wencck Associates

Track D Rooms 4-6
N & P Measuring, Monitoring, Modeling, and Management
Moderator: Jeff Berg, Minnesota Department of Agriculture
Co-Moderator: Greg Wilson, Barr Engineering Company
Availability of Phosphorus in Sediment from Lake Superior and Its Watershed
Taylor Hebner, Gustavo Merten, Ajan Ajanie, Elizabeth Hill, Sandra Brovold, and Robert W. Sterner, University of Minnesota Duluth
Measuring and Modeling Phosphorus Loss and Transport in the LeSueur River Basin
Brent Dalzell, Department of Soil, Water, and Climate, University of Minnesota; Jacques Finlay, Amy Hansen, and Christy Dolph, University of Minnesota
Overview of the Nitrogen Fertilizer Rule
Katie Wolf, Annie Felix-Gerth, and Larry Gunderson, Minnesota Department of Agriculture
Evaluating Nitrogen Management and Crop Yield Through On-Farm Field Trial Demonstrations
Spencer Herbert, Margaret Wagner, Ryan Lamack, Dawn Bemau, and Aaron Janz, Minnesota Department of Agriculture

*Underlined names are on-site presenters
### Program Schedule – Tuesday, October 18, 2016 (continued)

#### 11:30 a.m.–12:15 p.m.  Lunch  Grand Ballroom  Karen Jensen, Metropolitan Council

#### 12:15–1:00 p.m.  Luncheon Presentation, Introduction: John Downing, Director, Minnesota Sea Grant

**Federal/State Partnerships in Atmospheric and Coastal Research**

Craig McLean, Assistant Administrator, Oceanic and Atmospheric Research, National Oceanic and Atmospheric Administration, United States Department of Commerce

#### 1:15–2:45 p.m.  Concurrent Sessions II

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| **Social Science Applications in Conservation and Citizen Education**<br>**Moderator:** Amit Pradhananga, Department of Forest Resources, University of Minnesota; **Co-Moderator:** Brad Wozney, Minnesota Board of Soil and Water Resources<br><br>**Building Soil and Water Conservation District Staff Capacity for Groundwater Protection**<br>**Amit Pradhananga, Department of Forest Resources, University of Minnesota; Sharon Pfeifer, Minnesota Department of Natural Resources; Mae A. Davenport, University of Minnesota**<br><br>**Using Social Science to Accelerate Conservation**<br>**Peggy Knapp, Freshwater Society**<br><br>**Inspiring Elected and Appointed Community Leaders to Take Action Accomplished Through Education and Training: How Workshops-On-The-Water Build Knowledge and Result in Action and Behavior Changes**<br>**John Bilotta, University of Minnesota Extension and Sea Grant Program**<br><br>**Conservation Leverage Points in Rural Minnesota: Learning from Citizens in the Watonwan River Watershed**<br>**Dustin Anderson, Greater Blue Earth River Basin Alliance; Kimberly Musser, Water Resources Center Minnesota; State University–Mankato; Paul Davis, Minnesota Pollution Control Agency** | **Climate Change Impacts**<br>**Moderator:** Andrea Hendrickson, Minnesota Department of Transportation<br>**Co-Moderator:** Katy Thompson, WSB & Associates, Inc<br><br>**Projected Impacts of Climate and Forest Change on Lake Superior Hydrology and Biology**<br>**William (Bill) Herb, St. Anthony Falls Lab, University of Minnesota; Kristen Blinn, The Nature Conservancy, Lucinda Johnson, Natural Resources Research Institute, University of Minnesota; Will Bartch, Environmental Protection Agency, Midcontinent Ecology Division; Mei Li Cai, Natural Resources Research Institute, University of Minnesota; John Jerzczek, Minnesota Department of Natural Resources; Ralph Garono, Natural Resources Research Group**<br><br>**Examing Community Resilience in Extreme Climatic Conditions**<br>**Rebecca Teasley, University of Minnesota Duluth; Karlyn Eckman, University of Minnesota; Courtney Kowalczyk, Environmental Institute Director, Fond du Lac Tribal and Community College; Dawn Newman, American Indian and Tribal Partnership Liaison, University of Minnesota Extension; Tashi Guirang, Sea Grant Graduate**<br><br>The following 3 presentations by the Army Corp of Engineers will fill 40 minutes<br><br>**Downscaled Climate Change Data Acquisition**<br>**Brian Alberto, Pat Foley, and Ann Banitt, United States Army Corps of Engineers**<br><br>**Case Study for Climate Change in Fargo, ND, Using Bias Corrected Spatially Disaggregated (BCSD) Data**<br>**Brian Alberto, Pat Foley, and Ann Banitt, United States Army Corps of Engineers**<br><br>**Incorporation of Climate Change Impacts into Hydrologic Analysis**<br>**Chanel Mueller and Bryan Baker, United States Army Corps of Engineers** | **BMPs for Urban Retrofits**<br>**Moderator:** Tina Carstens, Ramsey-Washington Metro Watershed District<br>**Co-Moderator:** Lisa Goddard, SRF Consulting Group, Inc<br><br>**Building an Urban Stormwater Treatment Testbed**<br>**Marcy Bean, Mississippi Watershed Management Organization; William Alm, WSB & Associates, Inc; Dawn Snyder, Mississippi Watershed Management Organization**<br><br>**Irrigate, Infiltrate, Automate: Stormwater Reuse at Upper Villa Park**<br>**Forrest Kelley, Capitol Region Watershed District**<br><br>**Tree Trench and Permeable Pavers in the Edison High School Parking Lot**<br>**Michelle Neu, Mississippi Watershed Management Organization; Dan Edgerton and Mark Statz, Stantec Consulting, Inc**<br><br>**Sustainable Stormwater Analysis for the Ford Site Redevelopment, Saint Paul, MN**<br>**Robert Fossom, Capitol Region Watershed District; Wes Saunders-Pearce, City of Saint Paul** | **Groundwater and Surface Water Interactions**<br>**Moderator:** Karen Jensen, Metropolitan Council<br>**Co-Moderator:** Salam Murtada, Department of Natural Resources, Division of Waters<br><br>**Estimating Groundwater Recharge to Buried Aquifers**<br>**Alyssa Witt, Jared Tost, and James Stark, United States Geological Survey; William Sipkins, Iowa State University**<br><br>**Characterizing Groundwater and Surface-Water Interactions in Selected Northeastern Twin Cities Lakes, Minnesota—Part 1: Statistical Analysis and Field Data Collection**<br>**Perry Jones, Jared Tost, Donald O. Rosenberry, Alesha Diekoff, and Daniel Morel, United States Geological Survey**<br><br>**Characterizing Groundwater and Surface-Water Interactions in Selected Northeastern Twin Cities Lakes, Minnesota—Part 2: Groundwater Flow Model**<br>**Jason Roth, Perry Jones, and Catherine Christenson, United States Geological Survey**<br><br>**Water Budget Changes from Wetland and Prairie Restoration, Glacial Ridge National Wildlife Refuge, Northwestern Minnesota, 2006–13**<br>**Tim Cowdery and Catherine Christenson, United States Geological Survey**

*Underlined names are on-site presenters*
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<td>Community Engagement and Perspectives</td>
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<td>Moderator: Faye Sleeper, Water Resources Center, University of Minnesota Co-Moderator: Amit Pradhananga, Department of Forest Resources, University of Minnesota</td>
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<td>The 2016 State of the River Report</td>
<td>Trevor Russell, Friends of the Mississippi River; Lark Weller, National Park Service—Mississippi National River and Recreation Area</td>
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<td>The Easement Experience</td>
<td>Michael Lynn and Alan Singer, Dakota County</td>
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<td>We Think We Can? Collective Efficacy and Community Perspectives on Climate, Extreme Weather, and Water Management in Minnesota’s Lake Superior Basin</td>
<td>Vanessa Perry and Mae Davenport, University of Minnesota; George Host, University of Minnesota Duluth</td>
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<td>Using the Agricultural Conservation Planning Framework to Analyze Minnesota Watersheds</td>
<td>Ann Lewandowski and Les Everett, Water Resources Center, University of Minnesota</td>
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<td>Modeling and Managing Nutrient and Thermal Drivers of Aquatic Habitat</td>
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<td>Moderator: Brad Wozney, Minnesota Board of Water and Soil Resources Co-Moderator: Randy Neprash, Minnesota Cities Stormwater Coalition, and Stantec</td>
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<td>Using Predictive Lake Modeling to Assess the Development of Cyanobacteria Blooms</td>
<td>Richard Kiesling and Erik Smith, United States Geological Survey</td>
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<td>Protecting Minnesota’s Rivers with New River Eutrophication Standards</td>
<td>Dennis Wasley, Liz Kaufenberg, Matt Linder, and Steve Weiss; Minnesota Pollution Control Agency</td>
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<td>Climate Change Simulations of Cold-Water Fish Habitat in Elk Lake, Minnesota Using a Predictive Mechanistic Lake Model</td>
<td>Erik Smith and Richard Kiesling, United States Geological Survey</td>
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<td>Innovative Urban BMPs</td>
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<td>Moderator: Stephanie Johnson, Mississippi Watershed Management Organization Co-Moderator: Ron Leaf, Short Elliott Hendrickson, Inc</td>
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<td>Iron-Enhanced Ditch Checks for Capturing Phosphorus in Runoff</td>
<td>Poornima Natarajan and John Gulliver, University of Minnesota; Barbara Loida, Nicholas Olson, David Bauer, James Michael, and Scott Way, Minnesota Department of Transportation; Kristine Giga and Ryan Johnson, City of Roseville</td>
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<td>Pump and Treat Iron Enhanced Stormwater Treatment in a Neighborhood Setting</td>
<td>Karen Kill, Brown’s Creek Watershed District; Derek Lash and Ryan Fleming, Emmons and Olivier Resources, Inc</td>
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<td>Multiple Benefits of Privately Shared Stormwater Systems: From Conceptual Design to Construction</td>
<td>Nathan Campeau, Barr Engineering Company; Dan Kalmon, Mississippi Watershed Management Organization</td>
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<td>Urban School Retrofits: Sending Stormwater to Detention</td>
<td>Nate Zweitzer, Capitol Region Watershed District</td>
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<td>Groundwater and Surface Water Supply Management</td>
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<td>Moderator: Karen Jensen, Metropolitan Council Co-Moderator: Jeffrey Peterson, Water Resources Center, University of Minnesota</td>
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<tr>
<td>Enhancing Groundwater Sources Through Enhanced Aquifer Recharge to Improve Water Supply Reliability</td>
<td>Kathryn Jones and Adam Kessler, HDR Engineering, Inc; David Brown, Metropolitan Council; Kelton Barr, Braun Intertec</td>
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<td>Managing Groundwater at the Local Level</td>
<td>Steve Woods, Freshwater Society</td>
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<td>2015 Reconnaissance Study of Pesticide Compounds in Community Public Water Supply Wells</td>
<td>Heather Johnson, Minnesota Department of Agriculture; David Rindal, Anna Schliep, and Todd Johnson, Minnesota Department of Health</td>
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<td>Historical Trends and Spatial Distribution of Antibiotics in Minnesota Lakes and Rivers</td>
<td>Jill Kerrigan, William Arnold, Kyle Sandberg, and Tim LaPara, University of Minnesota; Daniel Engstrom, St. Croix Watershed Research Station</td>
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*Underlined names are on-site presenters*
Program Schedule – Wednesday, October 19, 2016

8:00–8:10 a.m.  Welcome  Grand Ballroom
Karen Jensen, Metropolitan Council, Jeffrey Peterson, Water Resources Center, University of Minnesota

8:10–9:30 a.m.  Plenary Session  Nonpoint Source Water Quality Issues and Solutions
David Mull, Professor and Larson Endowed Chair in Soil and Water Resources, University of Minnesota

9:30–10:00 a.m.  Break  Ballroom AB

10:00–11:30 a.m.  Concurrent Sessions IV

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<td>Co-Moderator: Shawn Schottler, St. Croix Watershed Research Station</td>
<td>Co-Moderator: John Gulliver, Department of Civil, Environmental, and Geo-Engineering, College of Science and Engineering, University of Minnesota</td>
<td>Co-Moderator: Wayne Sicora, Natural Resource Group</td>
<td>Co-Moderator: Jeff Peterson, Water Resources Center, University of Minnesota</td>
<td>Co-Moderator: Karen Jensen, Metropolitan Council</td>
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<td>Karen Gran, University of Minnesota Duluth; Se Jong Cho and Ben Hobbs, Johns Hopkins University; Peter Wilcock and Patrick Belmont, Utah State University</td>
<td>Application of the Minnesota Dry Swale Calculator</td>
<td>Applying Multiple Assessment Techniques to Minimize Disturbance and Select Suitable Natural Stream Stabilization Practices</td>
<td>Pilot Red Lake River One Watershed, One Plan</td>
<td>Wetland Protection vs. Drainage Rights</td>
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<td>I. Greater Blue Earth River Basin: Sediment Sources, Sinks, and Delivery</td>
<td>Maria Garcia-Serrana, University of Minnesota–St. Anthony Falls Laboratory; John Gulliver and John L. Nieder, University of Minnesota</td>
<td>Lisa Odens and Greg Bowles, Houston Engineering; Matt Moew, South Washington Watershed District</td>
<td>Red Lake River Planning Group, Local Governing Units; Nate Dalager, HDR, Inc</td>
<td>John Kolb and Kale Von Bruggen, Rinke Noonan, Attorneys at Law, St. Cloud, Minnesota; Don Parrish, American Farm Bureau Federation, Sr. Director of Regulatory Issues; Scott Strand, Environmental Law and Policy Center (ELPC)</td>
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<td>III. Linking Research and Management Choices at the Watershed Scale</td>
<td>Stormwater Pond and Wetland Performance Study in Ramsey-Washington Metro Watershed District</td>
<td>Phosphorus Removal Evaluation at Mankato Wastewater Treatment Plant Done by Student-Professional Collaboration</td>
<td>Implementing the PTMapp GIS Toolset at Smaller Watershed Scales: Results and Lessons Learned</td>
<td>Jason Ulrich and Joe Pallardy, Emmons and Olivier Resources Inc</td>
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<td>Peter Wilcock, Utah State University</td>
<td>Michael McKinney, Erin Anderson Wenz, and Jennifer A. Koehler, Barr Engineering Company</td>
<td>Stephen Druschel and Bridget Anderson, Minnesota State University-Mankato</td>
<td>Grid-Cell SWAT Modeling Breaks New Ground on Isolating Pollutant Source Areas and Quantifying BMP Benefits</td>
<td>Greg Wilson and Evan Christianson, Barr Engineering Company</td>
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<td>Implementing a Natural Channel Design—Minnehaha Creek</td>
<td>Developing a Stressor-Response Concept Model for Red River of the North</td>
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1:15–2:45 p.m. Concurrent Sessions V

**Track A Ballroom E**
Near Channel Sediment Erosion
Moderator: Shawn Schottler, St. Croix Watershed Research Station
Co-Moderator: Gene Soderbeck, Minnesota Pollution Control Agency

**Track B Ballroom F**
Fine-scale Measurement and Targeting of Agricultural Practices
Moderator: Jeff Berg, Minnesota Department of Agriculture
Co-Moderator: Faye Sleeper, Water Resources Center, University of Minnesota

**Track C Rooms 1-3**
Water Quality Models for Establishing Site-Specific Nutrient Goals Based on Water Quality and Biological Response Variables
David Diks, Hans Holmberg, and Denny Lofton, LimnoTech

**Track D Rooms 4-6**
Urban Water Quality
Moderator: Ron Leaf, Short Elliott Hendrickson, Inc
Co-Moderator: Brian Beck, Wenck Associates

**LID Workshop Rooms 7-9**
Stormwater Research Priorities and Pond Maintenance Research Project
A Stormwater/LID Extended Session
Moderator: John Bilotta
Multiple presenters from the research team cited below.

1:15 p.m.
Project overview and session objectives
This research project is developing information required to improve stormwater pond maintenance and create a ten-year framework of stormwater research needs.

1:20–1:45 p.m.
Urban Water Quality
Co-Moderator: Andrea Hendrickson, Minnesota Department of Transportation

1:20–1:45 p.m.
Project overview and session objectives
This research project is developing information required to improve stormwater pond maintenance and create a ten-year framework of stormwater research needs.

1:45–2:45 p.m.
Stormwater Research Priorities and Pond Maintenance Research Project
A Stormwater/LID Extended Session
Moderator: John Bilotta
Multiple presenters from the research team cited below.

1:50–2:15 p.m.
PAH and Phosphorus Release from Stormwater Ponds—Research Quickbyte
An overview of a current research project (2016–18). What is being studied, how, and why.

1:50–2:15 p.m.
Minnesota Stormwater Research Framework and Priorities
An overview of the project (2016–18) including project design, input from existing research and databases, and summary of an interim needs report.

*Underlined names are on-site presenters
Program Schedule – Wednesday, October 19, 2016 (continued)

2:45–3:00 p.m.  Break  Ballroom AB

3:00–4:30 p.m.  Concurrent Sessions VI

Track A  Ballroom E

River Hydrology and Suspended Sediment
Moderator: Gene Soderbeck, Minnesota Pollution Control Agency
Co-Moderator: Shawn Schottler, St. Croix Watershed Research Station
Modeling the Influences of Riverine Hydrology on Near-Channel Nesting Habitat for State-Listed Turtle Species
Jason Naeter, Jason Ulrich, and Mike Talbot, Emmons and Olivier Resources

Application of Dimensionless Sediment Rating Curves to Predict Suspended-Sediment Concentrations, Bedload, and Annual Loads for Rivers in Minnesota
Joel Groten, Christopher Ellison, and David Lorenz, United States Geological Survey; Karl Koller, Minnesota Department of Natural Resources

Indicators for Altered Hydrologic Influences on Fluvial Geomorphology and Sediment Loading
Alex Schmidt, Greg Bowles, and Drew Kessler, Houston Engineering

Flow-Related Dynamics in Suspended Algal Biomass and its Contribution to Suspended Particulate Matter in an Agricultural River Network of the Minnesota River Basin, USA
Christy Dolph, Amy Hansen, and Jacques Finlay, University of Minnesota

Track B  Ballroom F

Watershed Monitoring Assessment and Dissemination
Moderator: Greg Wilson, Barr Engineering Company
Co-Moderator: Salam Murada, Department of Natural Resources, Division of Waters

An Interactive Application for Graphing and Downloading Daily, Annual, and Average Pollutant Load Data from the MPCAs Watershed Pollutant Load Monitoring Network
Patrick Baskfield and Casey Scott, Minnesota Pollution Control Agency

Estimating Daily Streamflow for Ungaged Stream Locations in Minnesota
Jeff Ziegeweid, Christopher Sianocki, and David Lorenz, United States Geological Survey Minnesota Water Science Center

Long-Term Trends in Concentration and Loads of Stream Pollutants in Minnesota
James MacArthur and James Jahng, Minnesota Pollution Control Agency

Comparing Minnesota’s Nutrient and Sediment Load Monitoring Results with Watershed Characteristics
David Wall and Thomas Pearson, Minnesota Pollution Control Agency; Ben Gosack, Minnesota Department of Natural Resources

Track C  Rooms 1-3

New Tools for Salt Management
Moderator: Lisa Goddard, SRF Consulting Group, Inc
Co-Moderator: John Gulliver, Department of Civil, Environmental, and Geo-Engineering, College of Science and Engineering, University of Minnesota

Smart Salting: Managing Salt Use to Protect the Environment, Save Money and Provide Public Safety
Brooke Asleson and Rachel Olmanson, Minnesota Pollution Control Agency

Winter Maintenance Assessment Tool: An Innovative Planning Tool to Manage Salt Use
Matt Morreim, City of Saint Paul Public Works; Brooke Asleson, Minnesota Pollution Control Agency; Craig Eldred, City of Waconia

Using “Big Data” Techniques to Analyze and Visualize Dissolved Salt Concentrations Across the Minnesota Landscape
Scott Kyser, Andreas Hochrein and Casey Scott, Minnesota Pollution Control Agency

Revised Sulfate Standard to Protect Wild Rice from Elevated Hydrogen Sulfide
Edward Swain, Phil Monson, and Shannon Latham, Minnesota Pollution Control Agency

Track D  Rooms 4-6

Planning for Floods, Fish Passage, and Flocculation
Moderator: Ann Banitt, United States Army Corps of Engineers
Co-Moderator: Rick Voigt, Voigt Consultants, LLC

Mitigating Geyser Events in the Minneapolis Stormwater Tunnel Systems
Brandon Barnes, Greg Fransen, Lulu Fang, Christian Frías, and Omid Mohseni, Barr Engineering Company

Development of Planning Toolsets using XP-SWMM and GIS Systems to Address Flood Risk, Climate Change, and Urban and Rural Development
Bryan Cruve, and Ed Matthiessen, Wenck Associates, Inc

Culvert Inventory and Ranking Protocol
Amanda Hillman, Minnesota Department of Natural Resources

Flocculation BMPs for Reducing the Sediment in Construction Water Discharges
Stephen Druschel and Nizli Yılmaz Wodzinski, Minnesota State University–Mankato

LID Workshop Rooms 7-9

3:00–4:30 p.m.
Stakeholder Input for Stormwater Research Priorities for the Next Decade
This will be an interactive input session (not a presentation). Participants will be invited to provide input to help shape future surveys and methods, and contribute to stormwater research needs.

This stormwater/LID extended session will be led by members of the UMN research team carrying out this project including:
Jeff Peterson, Larry Baker, John Bilotta, John Chapman, Jacques Finlay, John Gulliver, Raymond Hozalski, Shahram Missaghi, Matt Simcik, and Bruce Wilson, and may feature multiple post-docs and graduate students.

4:30  Adjourn

*Underlined names are on-site presenters
The following posters will be displayed during the breaks each day. The poster session with poster presenters will be held on Tuesday evening, during the reception.

1. In-Lake Response to Watershed Restoration: Lake Shaokotan, Lincoln County, MN
   Ellen Albright, Macalester College; Steven Heiskary, Minnesota Pollution Control Agency

2. Sampling and Temporal Effects on Arsenic Concentration in New Private Residential Wells in Minnesota
   Emily Berquist, Minnesota Department of Health; Melinda Erickson, United States Geological Survey

3. Woodchip Bioreactors: From Planning to Construction, a case study of Faribault County Ditch (CD) 62
   Chuck Brandel, ISG

4. An ArcGIS-Based Tool for Water Table Interpolation
   Catherine Christenson and Tim Cowdery, US Geological Survey

5. Floating Treatment Wetlands in a Northern Climate: Examination of Phosphorus and Nitrogen Removal
   Emily Deering, Joseph Magner, Chris Lenthart, and Lawrence Baker, University of Minnesota

6. Fields to Streams: Managing Water in Rural Landscapes
   Les Everett and Ann Lewandowski, University of Minnesota Water Resources Center; Karen Terry, University of Minnesota Extension

7. Opportunities for Minnesota’s One Watershed, One Plan Program
   Elizabeth Henley, University of Minnesota; Doug Thomas and Melissa Lewis, Board of Water and Soil Resources.

   Erik Herberg and Hong Wang, Metropolitan Council

9. Evaluating Nitrogen Management and Crop Yield Through On-Farm Field Trial Demonstrations
   Spencer Herbert, Margaret Wagner, Ryan Lemickson, Dawn Bernau, and Aaron Janz, Minnesota Department of Agriculture

10. Embankment Protection During Road Overtopping Events
    Matthew Hernick, Jeff Marr, Sara Mielke, and Robert Gabrielson, University of Minnesota St Anthony Falls Laboratory; Craig Taylor, LimnoTech

11. Building Capacity for Natural Resources Across RSDPs
    Linda Kingery and Rose Clarke, University of Minnesota Extension Regional Sustainable Development Partnerships

12. The Passage Bench: A Review of their Construction as a Standard Bridge Design on River Crossings in Minnesota
    Peter Leete, Minnesota Department of Natural Resources, Minnesota Department of Transportation

13. Rice Creek Commons Comprehensive Stormwater Management Plan
    Pamela Massaro, Wenck Associates

14. Sunlight-Driven Transformation of Contaminants of Emerging Concern in Stormwater
    Andrew McCabe and William Arnold, University of Minnesota, Department of Civil, Environmental, and Geo-Engineering

15. Seasonal Changes in the Turbidimeter Signal Due to Sediment Color in a Minnesota River Tributary
    Gustavo Merten, University of Minnesota, Duluth; Paul Capel, University of Minnesota, United States Geological Survey

16. Idea of a Minnesota Water Resources Modeling Group Revisited
    Shahram Missaghi, Minnesota Extension

17. Local Water Supply Planning
    Carmelita Nelson, Minnesota Department of Natural Resources
    Lanya Ross, Metropolitan Council

18. Alum’s Critical Role in Controlling Algae and Phosphorus
    Keith Pilgrim and Greg Wilson, Barr Engineering Company

19. Advancing Groundwater Implementation through GRAPS
    Carrie Raber and Mark Wettlaufer, Minnesota Department of Health

20. The R/V Blue Heron and the Large Lakes Observatory
    Richard Ricketts, Large Lakes Observatory, University of Minnesota

21. Nearshore Lake Superior Periphyton Surveillance
    Elaine Ruzycki, Richard Axler, and Jerry Henneck, Natural Resources Research Institute, University of Minnesota, Duluth; Jeremy Erickson, Saint Paul Regional Water Services

22. Illicit Discharge Detection and Elimination Education Program
    Leslie Stovring, City of Eden Prairie; Leah Gifford and Walter Eshenaur, SRF Consulting Group, Inc.
23. Comparison of Alternative Media for the Construction of Stormwater Biofiltration Systems
Josh Swanson, University of Minnesota, Duluth, Meijun Cai, University of Minnesota Duluth, Natural Resources Research Institute, Kurt Johnson, University of Minnesota Duluth, Natural Resources Research Institute, David Saftner and Rebecca Teasley, Department of Civil Engineering, University of Minnesota Duluth

24. Phosphorus in the Shell Rock Watershed
Bill Thompson, Minnesota Pollution Control Agency

25. A Direct-Push Sample-Freezing Drive Shoe for Collecting Sediment Cores with Intact Pore Fluid, Microbial, and Sediment Distributions
Jared Trost and Barbara Bekins, United States Geological Survey; Tom Christy, Geoprobe Systems

26. Iron Oxide Mineral Nanoparticles: Fate and Transport of Nitrobenzene Pesticides
Jeanette Voelz, William Arnold, and R. Lee Penn, University of Minnesota, Twin Cities

27. Reliable Reduction of Agricultural Runoff: Tradeoffs Involving Variation of Water Quality
Zhiyu Wang and Jay Coggins, University of Minnesota

28. Linking Hydrologic Flux and Root Zone Geochemistry at Second Creek, a Sulfate-Enriched Wild Rice Stream in Northeastern Minnesota
Amanda Yourd, Gene-Hua Crystal Ng, Amy Myrbo, and Nathan Johnson, University of Minnesota, Twin Cities, Department of Earth Sciences