



36th Annual Red River Basin Land & Water International Summit Conference

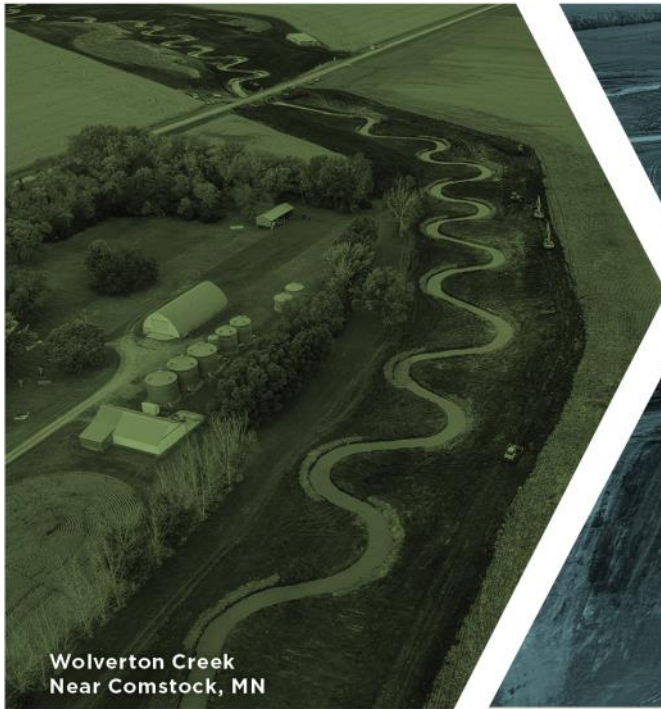


January 15-17, 2019
The Alerus Center
Grand Forks, North Dakota

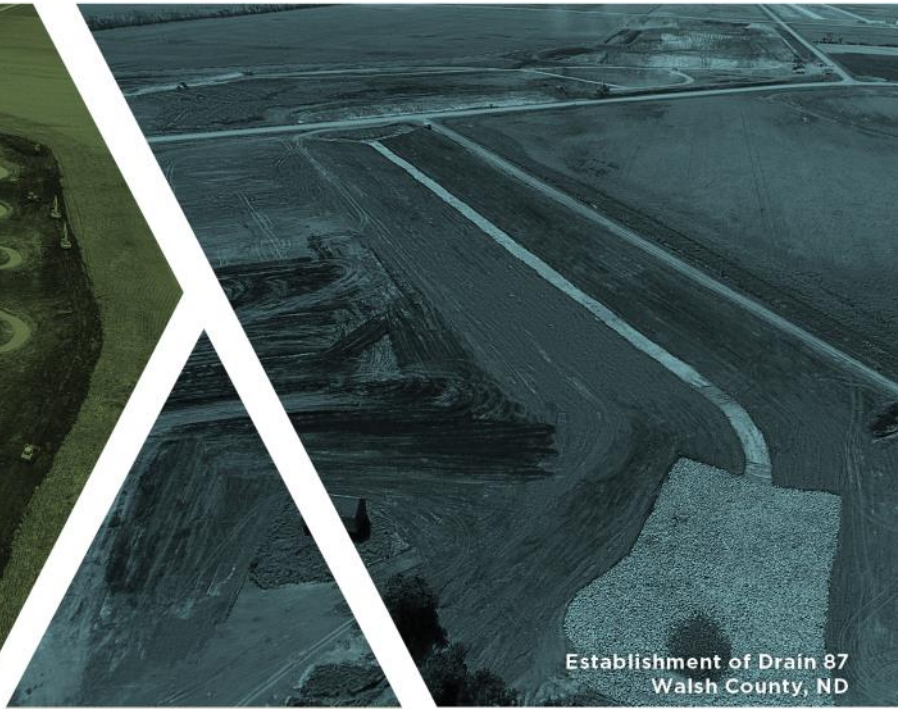
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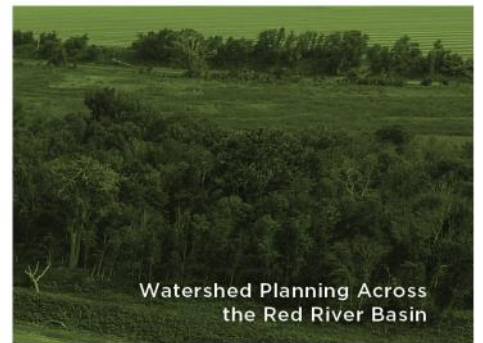
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Near Comstock, MN



Establishment of Drain 87
Walsh County, ND



Watershed Planning Across
the Red River Basin



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WELCOME FROM RRBC CHAIR, Curt Johannsen



Welcome to the 36th Annual Red River Basin Land Water International Summit Conference. The Red River Basin Commission's Annual Conference provides an excellent forum for those living in the Red River Basin and gives an opportunity for those involved in land and water management to gather together, share their views and experiences, learn what others are doing in the basin and, most importantly, recognize and celebrate on an annual basis successful projects and programs. Our goal is to foster a basin-wide educational perspective that transcends political boundaries and aims to facilitate improved management for our natural resources for current and future generations.

This year's conference theme, **"Hands Across Borders: Weather, Water, Working Together"** continues to offer a basin-wide perspective to the issues we are facing in the Red River Basin. The moving parts of this complex basin require us to work together across jurisdictional boundaries and maximize our resources and potential to address the vast array of issues we face together. The Natural Resources Framework Plan (NRFP) was estab-

lished through Basin participation to identify goal areas that we can work on together. These goals range from education and technology to the issues of Flood Damage Reduction, Water Supply and Water Quality. Many of the efforts you will hear about in the Success Stories Lightning Talks display the integration of the goals and how each project and program in the Basin, no matter what scale, is making a difference.

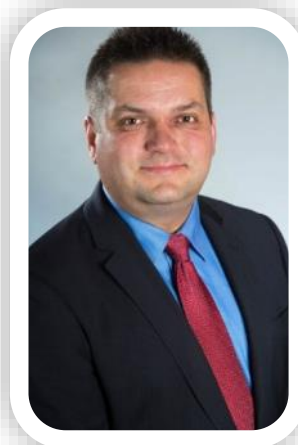
One year ago I introduced and welcomed, Ted Preister, as the new Executive Director for the RRBC. I am proud to say that over the last couple of years during my time as Chairman of this organization, we have accomplished a lot. We have charted a course that reflects on the mission and vision that was laid out for us over the course of the last 40 years. I am even happier to be passing on the Chair position to a very deserving individual, Mary Scherling, Cass County Commissioner in North Dakota. Mary's knowledge, dedication and passion to the Red River Valley and the RRBC makes her a great fit for this role. I am eager to continue participating in my role as past chair and look forward to seeing you all at future RRBC events.

The Conference Planning Committee has once again prepared an excellent agenda. We will kick off the conference with our keynote, Paul Douglas, and hear about the rapidly changing climate followed by varying local perspectives on this issue. We will also hear presentations on flood damage reduction, water supply and water quality over the course of the conference. We will continue to celebrate our successes during the Lightning Talks session and the awards banquet on Wednesday evening. These successes continue to demonstrate that we can effectively manage our land and water resources through international, basin-wide cooperation and collaboration. Enjoy the conference!

**Mary
Scherling
Vice-Chair**



**Jeff
Browaty
Treasurer**



WELCOME FROM RRBC EXECUTIVE DIRECTOR, Ted Preister

Welcome to the 36th Annual Red River Basin Conference Hands Across Borders



It is a distinct pleasure to be returning to Grand Forks for this year's conference and it is fitting for several different reasons. First is the theme of Hands Across Borders; Grand Forks has always provided the broadest attendance from all the stakeholders in the Basin since it is so close to the center, welcome to all the visitors from a wide variety of states and provinces. Second is the fact that the stakeholders have been involved in the RRBC or its various predecessors for 40 years, a significant milestone for an organization like this one. Finally, we have a great agenda lined up for everyone, the keynote speaker and some of the other presentations will be distinctly different than have been involved in the conference recently.

Grand Forks is great for a variety of reasons that I would like to point out for all of you. The community and visitor's bureau all go out of their way to make visitors feel welcome. There are many great restaurants and shopping venues close by, so we encourage you to go out and see what the city has to offer. This conference also affords an opportunity to meet new people from all over, we challenge you to introduce yourself to at least two new people each day. There will be visitors from Ottawa and Washington D.C on Thursday as well as many participants from the capitals of both states and the province so look for those opportunities to reach your hand across a border.

40 years..... many grassroots organizations outlive their usefulness over a span that long. In 1979 a group of citizens came together and established the Red River Valley International Citizens Flood Control Coalition, as conditions changed and more issues were included in the conversation the organization morphed into the Red River Basin Board and later it evolved again into the Red River Basin Commission. The last year has marked a significant effort by the Board of Directors to refocus on the core issues of flooding and water quality as well as re-invigorating the outreach to stakeholders that is so vital to keeping those hands reaching across the borders.

Finally, the agenda. We are very pleased to bring you a fresh and exciting array of presenters. We are very fortunate to have Paul Douglas with us, a nationally recognized voice on the topic of climate change and a departure from previous keynote speakers. We have deliberately included some presenters who are outside the normal range of topic for our conference and hope that you all find ways to include those topics in the work of the variety of organizations you represent.

This week many borders are represented, and I will reach "hands across borders". I hope all of you will do so as well. We look forward to your participation and interaction and will joyfully add any comments to our files for next year if you have ideas how to make our conference more rewarding for the participants.



Natural Resources Framework Plan

Basin Goals

- Goal #1** **Manage by Watershed:** Manage natural resources in the RRB by watershed boundaries rather than political boundaries.
- Goal #2** **Integration:** Integrate natural resource management.
- Goal #3** **Data and Tools for Decision Makers:** Increase applied research and data management to support decision-making.
- Goal #4** **Education/Information:** Improve stakeholder participation and awareness of land and water issues.
- Goal #5** **Flood Forecasting:** Maintain state of the art flood forecasting tools for the Red River Basin.
- Goal #6** **Flood Mitigation:** Reduce risk of flood damages for people, property and the environment in the mainstem floodplain and in tributary watersheds.
- Goal #7** **Flood Response & Recovery:** Ensure that flood (natural disaster) response and recovery programs meet the needs of all RRB residents.
- Goal #8** **Drainage:** Manage urban and agricultural drainage systems to enhance productivity while minimizing impacts to others.
- Goal #9** **Water Quality:** Maintain, protect, and restore surface and ground water quality in the Red River Basin.
- Goal #10** **Water Supply:** Ensure the appropriate use and sustainability of the Basin's surface and ground water.
- Goal #11** **Conservation:** Increase soil conservation efforts within the Basin.
- Goal #12** **Fish & Wildlife:** Conserve, manage, and restore diversity and viability of native fish and wildlife.
- Goal #13** **Outdoor Recreation:** Enhance and develop recreational infrastructure and access to the Basin's natural resources.

Please Join Us in Singing Our Anthems

O CANADA

O Canada!
Our home and native land!
True patriot love
In all thy sons command.
With glowing hearts
We see thee rise,
The True North
Strong and free!
From far and wide,
O Canada,
We stand on guard
For thee.
God keep our land
Glorious and free!
O Canada,
We stand on guard for thee.
O Canada,
We stand on guard for thee.



STAR SPANGLED BANNER

Oh, say can you see,
By the dawn's early light,
What so proudly we hailed
At the twilight's last gleaming?
Whose broad stripes and bright stars,
Thru the perilous fight,
O'er the ramparts we watched,
Were so gallantly streaming?
And the rockets' red glare,
The bombs bursting in air,
Gave proof thru the night that our
Flag was still there.
Oh, say, does that Star Spangled Banner
Yet wave, o'er the land of the free
And the home of the brave?

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#RRBC2019

Keynote Speaker

Paul Douglas

“A Rapidly Changing Climate: Threat – and Opportunity “

Paul Douglas is Minnesota's first American Meteorology Society (AMS) Certified Broadcast Meteorologist, with a 40-year on-air career in television, radio, print and online. Douglas is Founder and Senior Meteorologist at [Praedictix](#), which focuses on media, corporate briefings and forensic meteorology. A second weather technology business, [AerisWeather](#), provides high-resolution data and graphics to weather-sensitive businesses around the world. In 2011 his companies helped to launch “[WeatherNation TV](#)”, a new national 24-7 weather channel.

Previous companies include “EarthWatch Communications”, which invented 3-D weather graphics for television stations worldwide – featured in Steven Spielberg's movies “Jurassic Park” and “Twister”. His last venture was “Digital Cyclone”, the first company in the world to put an app on a mobile phone in 2001. Douglas sold that company to Garmin in 2007.

On the board of [EEN](#), the Evangelical Environmental Network, Paul's latest book, co-authored by EEN President and CEO Mitch Hescox, is “**Caring for Creation: The Evangelical's Guide to Climate Change and a Healthy Environment**”, released in late 2016.



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Julie Goehring - South Basin Manager
Kristjana Olafson - North Basin Administrative Assistant
Jacque Radke - Financial/Administrative Assistant
Steven Strang - Manitoba Director
Leah Thvedt - Conference Coordinator/Outreach

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VISION

A Red River Basin where residents, organizations, and governments work together to achieve basin-wide commitment to comprehensive integrated watershed stewardship and management.

MISSION

To create a comprehensive integrated basin-wide vision, to build consensus and commitment to the vision, and to speak with a unified voice for the Red River

Minnesota

Counties:

Gary Kiesow, Marshall
Stephanie Miranowski, Wilkin

Cities:

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Del Rae Williams, Moorhead
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Judy Vrchota - Senator Thune

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Hetty Walker, Pembina

Cities:

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Dave Piepkorn, Fargo

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Ben Varnson, Nelson County Water Resource District

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Doug Goehring, Department of Agriculture

Environmental:

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At-Large:

Jake Gust, West Fargo

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Tony Gehrig
Tim Heisler
Jared Huibregtse
Josh Ihry
Maynard Loibl
Scott Peterson
Jessie Pfaff
Karl Rockman
Gary Thompson

First Nations

Gabriela Jiminez, Southern Chiefs Organization
Christa Monette, Turtle Mountain Band of Chippewa
Monica Hedstrom, White Earth Reservation



"Only by working together can we hope to achieve a vision for the Red River Basin that is not only accepted, but embraced and promoted by the basin citizens & governmental entities. This vision is too important not to be achieved."

*Jon Evert,
Past RRBC Chair*

SPEAKER BIOGRAPHIES



Greg Archibald is the Chief Executive Officer of the Pembina Valley Water Cooperative, located in southern Manitoba. He assumed the role in fall of 2016. The utility is owned by and provides drinking water to 14 municipalities. The utility operates water treatment plants at Letellier, Morris and Stephen-

field Lake and has a distribution system stretching over 3500 square miles.

For over 30 years, Greg has held senior leadership roles in western Canada, including Pulp mill Manager and President of an international agriculture manufacturer. A number of roles included responsibility for utilities in the Pulp & Paper sector.

Greg joined the Red River Basin Commission Board Executive in the fall of 2016 and has been quite active in the affairs of the organization, including chairing the renewal of the Red River Basin Commission Water Supply Working Group. The Water Supply Working Group has a mission to: "Facilitate understanding and education throughout the basin on the potential for drought or other emergency water supply conditions; and to ensure that the local plans have been coordinated regionally or from a basin wide perspective."

In southern Manitoba, Greg has provided leadership for Pembina Valley Water Cooperative to develop a "Drought Plan" in conjunction with its 14 municipal owners, Manitoba Sustainable Development, Manitoba Emergency Measures Organization and Landmark Planning and Design. Greg has a strong interest in the development of plans to mitigate a future drought and will speak to us about plans developed by Pembina Valley Water Cooperative to respond to future droughts in southern Manitoba.

Greg obtained his Bachelor of Science from Acadia University, Bachelor of Mechanical Engineering from Technical University of Nova Scotia and MBA from Athabasca University. Greg is a registered Professional Engineer.



Jason Benson has served as the County Engineer for Cass County, ND. Jason's duties include infrastructure management of nearly 640 miles of roads, and over 500 bridge structures. He manages the highway maintenance staff, engineering staff, Vector Control Department, and

the Planning Department. He also serves as a senior technical and administrative advisor for the Fargo-Moorhead Area Diversion Project. Jason has served 29 years in the U.S. Army and the Minnesota Army National Guard. He holds a Bachelor's Degree in Civil Engineering from North Dakota State University, Master's in Management from the University of Mary, and is a graduate of the U.S. Army Command General Staff College. He is a registered Professional Engineer in the state of North Dakota.



Duane DeKrey started his employment for the Garrison Diversion Conservancy District in Carington in March 2014. He assumed duties as General Manager on January 1, 2015. He oversees a staff of 39 and reports

directly to a 28-member Board of Directors. Garrison Diversion has an annual budget of \$32 million. Prior to Garrison Diversion, DeKrey served as the deputy director of the North Dakota Game and Fish Department. He has also served ten sessions in the Legislature, one session as a Senator from District 31, and the remaining from District 14, serving on the House Natural Resources Committee. Duane received an education at the North Dakota State University, majoring in Agriculture Education with minors in Military Science and General Science. He recently retired from the North Dakota National Guard. Duane and his wife, Jan, have 3 grown children, all residing in North Dakota. Duane is the Secretary/Treasurer of the Lake Agassiz Water Authority, an organization representing local city and rural water systems in the Red River Valley Water Supply Project.

SPEAKER BIOGRAPHIES

Mike Ell administers the Watershed Management Program in the North Dakota Department of Health's Division of Water Quality. The Watershed Management Program has responsibility for lake, river and wetlands monitoring and assessment; the Section 319 Nonpoint Source Management Program; and TMDL development; all under the umbrella of basin water quality planning. The program also supports the state's fish consumption advisory program through the collection and interpretation of mercury and other contaminant data in fish throughout the state. Mike was first employed by the Department of Health in 1985 where he worked in the Atmospheric Deposition Program (Acid Rain). Mike has been in the Division of Water Quality since 1987 and his current position since May 1991.



Mike graduated from North Dakota State University with a BS in Zoology in 1982 and completed his MS degree at NDSU in 1988 where he studied the effects of weed harvesting on the biota of Lake Metigoshe. After almost 34 years with the Health Department, Mike plans to retire at the end of April when he plans to spend more time at his lake cabin in Minnesota.

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SPEAKER BIOGRAPHIES

Chad Engels is a Senior Project Manager with Moore Engineering and a graduate of North Dakota State University with a Master of Science degree in Environmental Engineering. He is a registered Professional Engineer with 18 years of environmental and water resources engineering experience in both Minnesota and North Dakota. Chad currently serves as the engineer for the Bois de Sioux Watershed District located at the headwaters of the Red River. In addition, he is a past executive board member of the ND Water Users Association and is currently a technical advisor to the MN Red River Watershed Management Board. Chad has been integral in the development of several key flood risk reduction projects and initiatives in the Red River Basin; most notably the development of rural floodwater impoundments, urban levees, and agricultural drainage systems. He is the 2014 recipient of the Red River Joint Water Resource District Steamboat Award for his distinguished service to the basin.



Jeff Frith, a graduate of Lake Region State College, has served as the Manager of the Devils Lake Basin Joint Water Resource Board for nearly a decade. During that time, the Devils Lake Basin Joint Board has been heavily involved with Devils Lake flooding issues, and in trying to solve the problems that have come with it. Jeff is passionate about the community and the region that he has resided in his entire life. Jeff serves as a Ramsey County Commissioner, a Devils Lake School Board member, he is also a member of the North Dakota Outlet Advisory Committee, and the North Dakota Aquatic Nuisance Invasive Species Task Force. Jeff and his wife, Shari, have one son, Spencer, and they reside on the family farm in rural Devils Lake, ND.



Randy Gjestvang is a Civil Engineer, P.E.; with the ND State Water Commission since 1981. Since 1984, he has been located in the Red River office, with at least half of his time spent on items of for the Red River Joint Water Resource District (RRJWRD). Randy is a member of the Basin Technical and Scientific Advisory Committee (BTSAC); co-chair of the Technical Committee that oversees the Red River Watershed Feasibility Study; member of several committees for the Red River Basin Commission (RRBC) for the Long Term Flood Studies (LTFS), the Comprehensive Watershed Management Plan (CWMP) that is being prepared jointly with the Corps of Engineers, and for various other issues. Acted as co-coordinator (with a Minnesota representative) for the Red River Retention Authority (RRRA), for about 1 ½ years, until they hired their current executive director. The RRRA, with an agreement with the Natural Resource Conservation Service, are pursuing watershed protection studies within the watershed. He has been a member of the International Red River Board (IRRB) since 2001, Hydrology Committee of the IRRB, and co-chair of the IRRB subcommittee called the Lower Pembina River Flood Task Team that was established in 2008. He was also a member of the Pembina River Basin Task Team that was appointed by Governor Dalrymple in 2013. Over the years, he has been an active participant with the Pembina River Basin Advisory Board.



Gordon Goldsborough is a member of the Department of Biological Sciences at the University of Manitoba where he studies the impacts of human activities and invasive species on wetlands and lakes. Much of his research has focused on coastal wetlands of Manitoba's large lakes, especially Delta Marsh and Netley-Libau Marsh. He is also Chair of the Manitoba Water Council, the senior advisory body to the Minister of Sustainable Development.

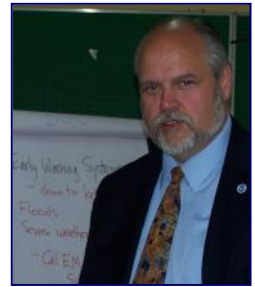


SPEAKER BIOGRAPHIES

Bethlehem Gronneberg is a seasoned software engineer, an inspirational speaker, an author, and a social entrepreneur with a vision to exponentially expand the inclusion of diverse voices in the technology workforce. By providing opportunities and exposure to technical skills, entrepreneurial mindset and practical confidence-building experiences for teen girls, Bethlehem strives to be an authentic global agent of change that fosters young women's affinity to the world of computational design thinking. Referred to as the "unlikely STEMinst" by the HuffingtonPost article, Gronneberg is the Founder and Chief Executive Officer of uCodeGirl, a social purpose non-profit designed to inspire, engage and equip teen girls so that they can confidently choose to forge a pathway to technology careers and engineer their world. After 20+ years in the software industry as Software Engineer, Sr. Software Engineer and Software Engineering Manager and a master's degree in Software Engineering from North Dakota State University (NDSU), **Bethlehem** has shifted her career focus to be an advocate for women in technology. Bethlehem is the recipient of the prestigious 2016 Bush Foundation Leadership Fellow. As a Bush Fellow, she is challenged to think big and to think different. Bethlehem is committed to bringing the real-world experience of software development to classrooms as an adjunct instructor of Computer Science at Concordia College. Bethlehem currently serves on the Executive Board of Prairie Public Broadcasting Services and as the advisory council of the Innovative Education Task Force of North Dakota, the advisory council for Ministry of Science and Higher Education in Ethiopia. In the past, she has served on various councils and boards including Fargo chapter of Women in Technology. Bethlehem was recently named the 2018 YWCA Woman of the Year in Science and Technology and the 2018 Exceptional Women of Excellence by the Women Economic Forum, a global conference for women leaders and entrepreneurs.



Greg Gust is the NOAA/NWS Warning Coordination Meteorologist serving the Red River (southern) and Devils Lake Basins from his office in Grand Forks ND since 1998. Greg and the staff [@NWSGrandForks](#) provide environmental information and Decision Support Services for high impact incidents across these U.S. northern plains, and specialize in direct support to Emergency Management officials, Media outlets, Multi-Agency Coordination Centers, and public decision makers. You will find him/them in the thick of activities before, during, and after the BIG storms... and BIG floods!



Zach Herrmann, PE, is a project engineer and principal with Houston Engineering, Inc. (HEI) specializing in assisting water resource districts and watershed districts to identify, establish strategies for, and implement water management solutions throughout the Red River Basin. Zach has considerable experience in hydrologic and hydraulic modeling of the Red River Basin using HEC-HMS and HEC-RAS. He served a key technical role in several modeling efforts in the Red River Basin including development of standardized hydrologic models and the Halstad Upstream Retention Study. Currently, he is working with several water boards to develop small watershed plans following NRCS PL-566 requirements. Zach's role in these efforts includes project coordination and outreach, engineering and technical considerations, and quantifying environmental impacts of proposed alternatives.



SPEAKER BIOGRAPHIES



John Jaschke is the Executive Director of the Minnesota Board of Water and Soil Resources (BWSR). He was formerly the Dakota County (MN) Water Resources Manager and the Administrator of the Vermillion River Watershed. His prior positions were as Land and Water Section

Administrator and Wetlands Program Manager at the Minnesota Board of Water and Soil Resources (BWSR), and Area Hydrologist with the Minnesota Department of Natural Resources (DNR) in Duluth and New Ulm. He has B.S. degrees in Geology and Geophysics from the University of Minnesota and a M.A. in Public Administration from Minnesota State University - Mankato. He grew up on a dairy farm in central Minnesota (Morrison County) with 10 younger siblings and now lives in St. Paul.

Curt Johannsen is entering his second year as the RRBC Chair of the Board of Directors. He has been on the board of directors for 7 years and was treasurer and vice-chair prior to his chairmanship. He has been Mayor of the City

of Hendrum, MN since 2009 and prior to that served on the City Council for two years. He has been a board manager on the Wild Rice Watershed District since 2011 and presently holds the office of the secretary. He most recently was appointed by Minnesota Governor Mark Dayton to sit on the Fargo-Moorhead Area Flood Diversion Task Force. He was raised on a farm near Tolstoy, South Dakota where some of his family still reside and farm. He has three siblings and 5 nieces and nephews. He is currently furthering his education pursuing a major in agronomy with a minor in environmental sciences. He currently farms in the Hendrum area.



Drew Kessler, PhD, is a senior scientist and project manager with Houston Engineering Inc. (HEI). He has more than 14 years of experience working on issues related to watershed planning, water quality modeling, and fluvial

geomorphology. Prior to joining HEI, Drew was a scientist in the Department of Soil, Water, and Climate and the University of Minnesota.



Asher Kingery, a Project Specialist, has been with the International Water Institute since June 2010. His time is split between water quality monitoring,

educational programming, and program development. Asher grew up very familiar with the Red River Basin as both of his parents were involved in watershed planning and riparian restoration. He helped stabilize eroding river banks, planted tens of thousands of trees, and during high school while working for his family's business in northeast North Dakota. After attending Bemidji State University and majoring in Environmental Studies, Asher wanted to combine outdoor experiences with science education. Since joining the IWI, he helped introduce River Explorers to allow students a better understanding of rivers, and spearheaded the establishment of the North Dakota River Watch Program. Asher believes that all students and educators need opportunities to explore outside and he will continue to keep outdoor experiences a part of growing up in the Red River Basin.



SPEAKER BIOGRAPHIES

Kurt Lysne, PE, CFM, is a certified floodplain manager and a registered professional engineer in North Dakota and Minnesota. He has been em-



ployed with Moore Engineering since 2006 and was named water resources group leader in Moore Engineering's West Fargo office in 2016. In this role, he leads a team of nearly 20 engineers and technicians through the region's most complex water challenges. Lysne earned his bachelor's degree in civil engineering from North Dakota State University. He was named North Dakota's 2015 Young Engineer of the Year by the North Dakota Society of Professional Engineers (NDSPE) and was placed on Prairie Business magazine's 40 Under 40 list in 2016. In 2018, he received the ACEC Young Professional of the Year Award from the American Council of Engineering Companies, one of five recipients in the nation. Lysne is a member of the FM Engineers Club, the North Dakota Society of Professional Engineers, the National Society of Professional Engineers, the Minnesota Association of Floodplain Managers and the Association of Dam Safety Officials.

Andrea McLean has been active in the area of watershed planning, programs, and policy in Manitoba for over 10 years. Currently, Ms. McLean is the Acting Manager for Watershed Planning and Programs with Sustainable Development, a section which provides provincial support to



Manitoba's watershed-based policy framework including watershed planning processes, water policy, and the incentive-based Conservation District Program. Andrea has a M. Sc. in Entomology specializing in aquatic entomology and started her career as Manager of the Turtle Mountain Conservation District later moving into various provincial roles within the program. More recently Andrea was tasked with leading the development of regulations under the Water Rights Act which govern drainage and water retention in Manitoba.

Matt Metzger has served as a project manager and civil engineer with Barr Engineering for 12 years. Matt's diverse water re-



sources background includes flood risk reduction, green infrastructure and sustainability engineering. Matt has led and served on teams performing project formulations, alternatives screening, concept design and detailed design for projects ranging in size from small-scale retrofits to \$1 billion+ flood risk reduction projects. In the Red River Basin, Matt has been a key member of consultant engineering teams for the design and implementation of flood resiliency projects for Fargo-Moorhead, FM Diversion, Grafton, Oxbow-Hickson-Bakke, Oslo and Alvarado. Matt also assists clients in the private and public sectors to examine project tradeoffs using customized decision support tools, cost estimates, sustainability assessments and triple-bottom-line cost benefit analysis (TBL-CBA). Matt earned his Masters of Engineering (M.E.) degree in Sustainable Systems Engineering at the University of Wisconsin-Madison and his B.S. in Civil Engineering from North Dakota State University. He is a registered Professional Engineer in MN and ND and is credentialed as an ISI Envision™ Sustainability Professional..

MARK YOUR CALENDAR

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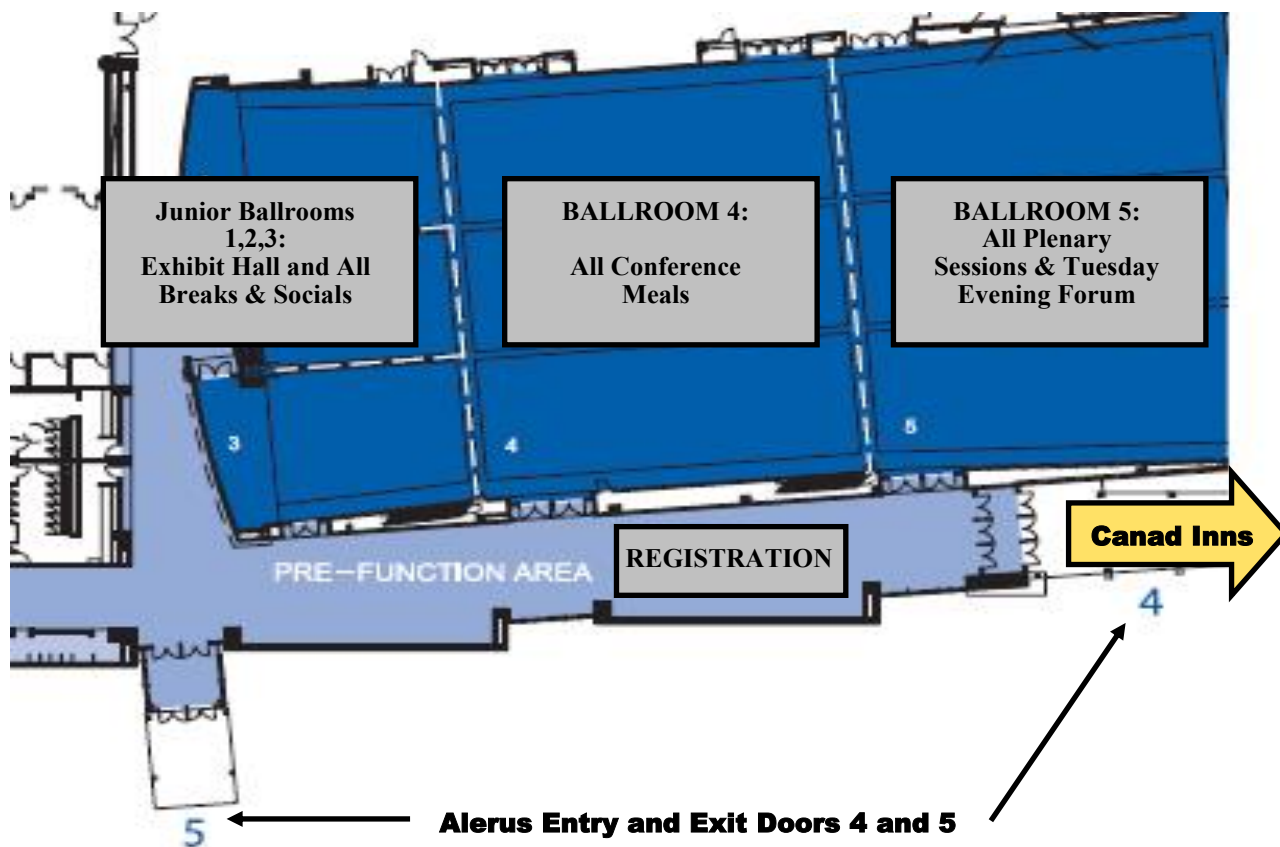
37th Annual Conference

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January 14-16, 2020

~

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Fargo, ND**



LEADING THE WAY IN WATER LAW

Tami Norgard leads the team of attorneys at Vogel Law Firm practicing in the areas of environmental law, water law and land use management. Our attorneys counsel clients on corporate and regulatory issues, and litigate in the areas of water law, drainage, flooding and environmental concerns. Other services include:

- NEPA and MEPA EA and EIS consultation and litigation
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Tuesday, January 15

1:00 National Anthems: University of North Dakota Choir Department, Singer

Welcome: Curt Johannsen, RRBC Chair

Conference At A Glance: Ted Preister, RRBC Executive Director

Greetings From Grand Forks: City of Grand Forks, North Dakota

1:30 Keynote Speaker: Paul Douglas

“A Rapidly Changing Climate: Threat - and Opportunity”

Paul Douglas is Minnesota's first American Meteorology Society (AMS) Certified Broadcast Meteorologist, with a 40-year on-air career in television, radio, print and online. More information can be found on page 8 of the program.

2:30 Break and Exhibits

Please take this time to visit with our sponsors and exhibitors. All breaks are your time to network and learn while enjoying snacks and beverages.

3:00 Weather Has No Boundaries: The Varying Perspectives

Current and Future Climate Impacts to Red River Basin Wildlife: Mike Murphy

Living in the Anthropocene: The Need for Mitigation and Adaptation: Gerald

Van Amburg, Concordia College

NASA Red River Basin Satellite Project: Ronny Schroeder, University of New Hampshire;

Should We Build Small Dams, Or “Leave it to Beaver”: Randy Dow, Pembina Valley Conservation District

Red River Basin Conditions and Updates for Spring: Greg Gust, National Weather Service

5:00 Social and Exhibits

Please join us for a networking social that includes a wonderful spread of hors d'oeuvres and an opportunity to meet others from throughout the Red River Basin.

7:00 Evening Forum: “We Are Water”

Presentations by:

“We Are Water” Traveling Exhibit: Linda Kingery, UMN Extension

River of Dreams: Asher Kingery and Andy Ulven, International Water Institute

The Future STEMs from Our Youth: Creating Pathways to Science, Technology, Engineering, and Math Careers: Hannah Rollin and Bethlehem Gronneberg, UCODEGIRL

Wednesday, January 16

7:30 Networking Breakfast: Hot Breakfast Buffet

8:15 Strengthening Our Resilience to Flood Damages:
Combating Rising Flood Costs: The Role of Natural Infrastructure and Flood Resiliency Standards: **Natalia Moudrak**, Intact Centre on Climate Adaptation
200 Year Flood Protection Levels: **Christian Propp**, Manitoba Infrastructure
Long Term Flood Solutions Update: **Matt Metzger**, Barr Engineering; **April Walker**, A. Walker Consulting; **Terry Zien**, USACE
Integrating FDR into One Watershed, One Plan: **Zach Herrmann**, **Drew Kessler**, **Rachel Olm**, Houston Engineering

10:15 Break and Exhibits

Please take this time to visit with our sponsors and exhibitors. All breaks are your time to network and learn while enjoying snacks and beverages.

10:45 Lightning Talk Success Stories: The Lightning Talk session allows Basin partner organizations and residents to highlight specific success stories in a 5-10 minute presentation. The topics all related to the goal areas in the RRBC Natural Resources Framework Plan (NRFP)

- **Searching for Evidence of Pre-Settlement Floods Along the US Reach of the Red River of the North:** **Joseph Zeleznik**, North Dakota State Engineering
- **Wolverton Creek Restoration & Sediment Reduction Project:** **Erik Jones**, Houston Engineering, Inc.
- **Sheyenne River Riparian Corridor Management Study:** **Mandar Nangare**, Barr Engineering
- **Small Town Flood Protection, The Ada Levees:** **Kurt Lysne**, Moore Engineering
- **Penner Water Retention Project:** **Jodi Goerzen**, Seine-Rat River Conservation District
- **Road Slide Repair:** **Andy Brandt**, RM of Tache

12:00 Networking Lunch

1:00 It All Starts Here: Local Projects in the Basin:
Fargo-Moorhead Diversion Update: **Jason Benson**, Cass County
Treherne Dam Project: **Hank Venema**, Strategic Communications
Hydraulic Modeling and Alternative Analysis to Identify FDR Solutions Along the Red River Near Oslo, MN: **Bret Zimmerman**, Houston Engineering
Levy Recertification Challenges: **Kurt Lysne**, Moore Engineering



Wednesday, January 16

2:30 Break and Exhibits

Please take this time to visit with our sponsors and exhibitors. All breaks are your time to network and learn while enjoying snacks and beverages.

3:00 Keeping It Clean with Multi-Purpose Efforts

Water Quality Strategic Plan: Ted Preister, RRBC

ND Integrated Drainage Project: Chad Engels, Moore Engineering

ND Local Watershed Projects: Mike Ell, ND Department of Health

MN Buffers - Status and Alternative Practices: John Jaschke, MN Board of Soil & Water Resources

Proposed Regulations under the Water Rights Act: A streamlined and balanced approach to drainage and water retention in Manitoba. Andrea McLean, Manitoba Sustainable Development

USGS WQ Monitoring Results through International Joint Commission IWI: Rochelle Nustad, USGS

5:30 Social and Exhibits

6:30 Banquet/Awards

- ~ Leadership Award
- ~ Celebrating Successes
- ~ Silent Auction

Thank You to Our Conference Planning Committee Members

Please take the time to thank the Conference Planning Committee members for their efforts in helping plan the 36th Annual Conference.

Jake Gust - Co-chair
Jon Evert - Co-chair
Steve Best
Bruce Henley
Curt Johannsen
Linda Kingery

Dan Olson
Joelle Saltel-Allard
Rob Sip
Gavin Van der Linde
Hetty Walker

Thursday, January 17

7:30 Networking Breakfast - Hot breakfast buffet

8:00 RRBC Annual Organization Meeting

Board Chair Report
Executive Director Report
Financial/Audit Report
Elections - Citizen At-Large

9:00 Working Together For the Health of Lake Winnipeg: Netley Marsh Restoration Pilot Project: Gordon Goldsborough, University of Manitoba

9:30 Water Supply in The Red River Basin:

Red River Valley Water Supply Project Update: Duane, DeKrey, Garrison Diversion Conservancy District

Manitoba Drought Management Strategy on the Pembina Valley Water Cooperative Regional Water System: Greg Archibald, Pembina Valley Water Cooperative

10:30 Final Networking Break and Exhibits

11:00 Hot Topic Lightning Talks: The Hot Topic Lightning Talk Session is similar to the Success Stories session. It will allow presenters 10-15 minutes to update attendees on specific project, programs and efforts that are ongoing and relevant to the conference audience.

Regional Conservation Partnership Program: Keith Weston, Red River Retention Authority

Devils Lake Update: Jeff Frith, Devils Lake Joint Board

Manitoba LiDAR/One Basin, One Governance: Steve Strang, Red River Basin Commission

Lower Pembina River Basin Advisory Board: Randy Gjestvang, ND State Water Commission;

12:00 Closing Lunch

**Grand Prize Drawing
Conference Concludes**

International Red River Board Public Meeting begins immediately after closing comments.

Grand Prize Drawing - Must be present to win!

To register, please complete the conference evaluation and return to the registration desk to receive a ticket.

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SPEAKER BIOGRAPHIES

Natalia Moudrak, in her current role at the Intact Centre, Natalia advances the development of guidelines and standards for building climate-resilient communities in Canada. She advocates for the preservation of natural infrastructure as a key climate adaptation solution. Prior to joining the Intact Centre, Natalia worked at PricewaterhouseCoopers Canada in Sustainability Consulting and Risk Assurance Advisory. She holds a B.A in Economics and a Masters in Urban Planning from the University of Waterloo. Natalia is a recipient of the 2018 Canada's Clean50 Emerging Leader award. She is a Vice Chair on the CSA Group Standard for flood-resilient new community design and represents Canada as a subject matter expert on stormwater management at the ISO international standards development committee.



Mike Murphy was a Refuge Manager at the Hamden Slough Wildlife Refuge for 17 years. He was with the US Fish and Wildlife service for 30 years. Mike was responsible for upland and wetland restorations, building public support, and developing recreational opportunities. He retired in April, 2007 and continues to give talks on a number of environmental and conservation issues.



Mandar Nangare has over a decade of experience in water resources engineering, specifically on projects involving surface water and stormwater. His background includes compiling gridded and lumped hydrologic models for small to multi-square-mile watersheds using WMS and DDMSW, conducting hydraulic analysis of simple to complex watercourses using HEC-RAS (steady and unsteady), 2D/Quasi-2D modeling using SMS and FLO-2D, and performing scour analysis of structures and watercourses. He has also developed and reviewed Federal Emergency Management Agency mapping products and map revision requests.



Rochelle Nustad is a hydrologist with the U.S. Geological Survey Dakota Water Science Center. Rochelle has nearly 20 years of experience in hydrologic investigations including numerical modeling of water quality and quantity, sediment and nutrient loading, and water-quality monitoring, and has coauthored or authored numerous reports. She has a Master of Science Degree in Environmental Engineering from North Dakota State University and a Bachelor of Science degree in Environmental Studies from Bemidji State University. Rochelle is interested in water-quality issues in the Red River Basin and serves as a member of the water-quality committee of the International Red River Board. She is currently working on a basin wide integrated water-quality trend analysis for the Red River Basin in cooperation with the International Joint Commission, North Dakota Department of Health and Minnesota Pollution Control Agency.



SPEAKER BIOGRAPHIES

Rachel Olm, MS, is a scientist with Houston Engineering, Inc. (HEI) experienced in watershed planning, strategies to implement non-point source reduction, watershed restoration and protection strategies (WRAPS), and total maximum daily loads (TMDLs). She also provides support for the completion of environmental review documents. Before joining HEI, she was instrumental in developing the One Watershed, One Plan (1W1P) framework within the Minnesota Board of Water and Soil Resources (BWSR). This background knowledge has proven influential when facilitating complex One Watershed, One Plan projects for HEI clients, which involve synthesizing a lot of diverse input from participants. Rachel has a personal knack for presenting technical information in a user-friendly way and guiding meeting discussions.



Ted Preister has been the Executive Director of the Red River Basin Commission since December of 2017. Prior to that he was an intelligence officer in the U. S. Army for over 20 years. His final position in the Army was as the Professor of Military Science at North Dakota State University. He prepared for his retirement by earning an Masters of Natural Resource Management during his time at NDSU. He also holds a Masters of Adult and Continuing Education from Kansas State University and a Bachelors of Science in Chemical Engineering from the Colorado School of Mines. Ted strives to embody three values which mesh very effectively with the mission of the RRBC: Service, Integrity and Leadership. **Preister** is passionate about effective management of the Red River so that the best of all it has to offer is available to all the residents of the Basin and those future generations who will depend on the river.



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SPEAKER BIOGRAPHIES

Chris Propp is manager of the Hydrologic Operations Section within Manitoba Infrastructure's Hydrologic Forecasting & Water Management Branch. His section is responsible for delivery of hydrology services and studies related to infrastructure design and flood protection; management of Manitoba Infrastructure's Hydrometric Program; and operation of major flood control infrastructure including the Red River Floodway, the Fairford River Water Control Structure, and the Portage Diversion. Chris graduated from the University of Manitoba Civil Engineering Program in 2006 and has worked for 13 years in the field of Water Management.



Hannah Rollin, EIT, is a water resources civil engineer with Houston Engineering, Inc. (HEI). She graduated from the University of Minnesota with a bachelor's degree in bioproducts and biosystems engineering with an emphasis in environmental and ecological engineering. She has worked on a variety of projects including hydrologic and hydraulic modeling to analyze flood storage options, rural drainage system improvements throughout the Red River Valley, and urban BMP design. She has participated in several outreach events for youth such as "Spark, Slime, and Speed" which introduces kids to the world of engineering through interactive experiments. Additionally, she has been a part of "Expanding your Horizons" at NDSU, and "Dream It, Be It", two programs that are giving young women the tools they need to achieve their educational and career goals in science, technology, engineering and math (STEM).



Hannah's latest outreach endeavor is joining the uCodeGirl Mentorship program designed to connect young women with female professionals in STEM to facilitate one-on-one mentoring relationships and build a support system for the girls to pursue their academic and career aspirations.

Ronny Schroeder received the B.Sc. degree in geography from the Friedrich Schiller University Jena, Germany, the M.Sc. degree in geography with emphasis in climatology and remote sensing from the



same university and the Max Planck Institute for Biogeochemistry, Jena, Germany, and the Dr. rer. nat. degree from the University of Hohenheim, Stuttgart, Germany. Currently, he is a Postdoctoral Scientist with the University of New Hampshire, Durham, NH. He was a Visiting Independent Advisor and Research Associate with the Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California and the Environmental CrossRoads Initiative and the CREST Institute, City College of New York, City University of New York, New York. His research interest focuses on the synergy of passive and active microwave remote sensing data to monitor Earth's water and carbon cycles. Recently his focus has shifted toward transforming research to real-world operations that directly benefit society. Dr. Schroeder has been a member of the American Geophysical Union since 2007.

SPEAKER BIOGRAPHIES

Steve Strang has passion for family, friends and the environment. He is employed at the Red River Basin Commission as the Manitoba Director, where he focuses on water management and water quality issues facing the Red River Basin both in the US and Manitoba. He holds a certificate in Financial Management and as well, he has been awarded the Queen Jubilee metal in 2013 for Region Partnership and in 2014 was awarded "the Friend of Planning" award by the Manitoba Professional Planners Institute.

Steve has worked for the Province of Manitoba from 2011 to 2017 as a Flood Protection Officer as well he also served as a councillor for the RM of St. Clements from 2002 to 2004 and then the Mayor from 2004- 2014. During his term, Steve successfully took on many environmental issues that faced his community and their watershed.

"Steve believes the environmental legacy we leave our communities will be judged by future generations."

Andy Ulven joined the International Water Institute in 2014 as a Monitoring and Education Specialist. He is involved with the Watershed Pollutant Load Monitoring Network, River Watch and River



Explorers programs, and steers development of the River of Dreams program. Andy received his BA in Geography from the University of Minnesota, Twin Cities in 2012 and recently obtained his MS in Land Resources and Environmental Sciences through Montana State University in Bozeman, MT. His professional interests center around characterizing watersheds through research, water quality assessments, and use of maps to increase understanding among youth and adults. Andy is a proud former River Watch student from Hawley, MN, currently residing in Detroit Lakes, MN.

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SPEAKER BIOGRAPHIES

Gerald L. Van Amburg is a professor emeritus in the Biology Department at Concordia College in Moorhead, Minnesota. He is a member of the MN Board of Water and Soil Resources, appointed 2011, 2015 and currently Chair. He is also a member of the MN Environmental Quality Board. Along with being a manager for the Buffalo-Red River Watershed District, in Minnesota (1986 to present) he was also elected to the Board of Directors, Minnesota Association of Watershed Districts, in 1989 and served as President in 1993 - 1994. He was a Minnesota Wetland Heritage Advisory Committee member, appointed by the Governor (1991 – 2003). He was the past president of the Board of Directors for River Keepers in Fargo/Moorhead. Van Amburg also served as a member of the local water planning advisory committee in Clay County, Minnesota the Red River Basin Mediation Work Group from 1997 to the present. He Co-established the Red River Basin Institute, which is now known as the International Water Institute..



Dr. Henry David (Hank) Venema is a sustainable development scientist, practitioner and system designer based in Winnipeg, Canada. Hank is committed to delivering the highest quality environmental systems and environmental technology investment opportunities to communities in Western Canadian. Hank's professional background spans renewable energy, water resources management, agriculture, operations research, public health, and environmental economics. His main professional interests are climate resilience investment using hydrologic design and natural infrastructure, and climate mitigation investment based on renewable energy and negative emissions technology. Hank has extensive experience at home and abroad, having worked for and with the Inter-governmental Panel on Climate Change, The World Bank, The World Health Organization, the Organization for Economic Cooperation and Development, United Nations Environment Program, the Global Water Systems Project, and The Energy and Resources Institute. In Canada, Hank was Chief Scientist and Vice President for Science and Innovation at the International Institute for Sustainable Development (IISD), leading several of IISD's signature Canadian programs including the Water Innovation Centre, saving and reviving the Experimental Lakes Area (ELA) research station, and helping establish the Prairie Climate Centre. Hank has over a decade of experience consulting to the Province of Manitoba and the Government of Canada on wind power development, Lake Winnipeg Basin management, water quality trading, ecosystem services, bioeconomy development, and indigenous-led ecosystem management.



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SPEAKER BIOGRAPHIES

April E. Walker P.E., C.F.M. is a graduate of North Dakota State University. She currently resides in West Fargo ND and is the owner of A. Walker Consulting. She began her career as a highway



designer for the state of California but moved to Fargo in 2002 where she worked for the City of Fargo as a Traffic Engineer, the Storm Sewer Utility Engineer, and ultimately as the City Engineer. As a City employee she gained experience dealing with floodplain management, emergency flood fighting, flood risk reduction, and mitigation issues. During her tenure April helped to develop and began the implementation of a flood protection plan that has resulted in the construction of over 20 miles of permanent Levees and Floodwalls within the City. In her new role as a consultant April is seeking to bring the skills she has acquired to benefit a broader population. April also serves as an Adjunct Professor for NDSU, she is a member of the City of West Fargo's Planning Commission and serves on the Board of Directors for the FM Area Foundation.

Keith Weston is the Executive Director of the Red River Retention Authority located at the Red River Watershed Center in Fargo, ND. He assumed this position in March 2017. In his position with the Red River Retention Authority he serves fourteen water resource districts that make-up the Red River Joint Water Resource District in North Dakota and the seven watershed districts which make-up the Red River Water Management Board in Minnesota.



Mr. Weston is a native of Sarles, ND; growing up on a small grain farm. He is a 1981 graduate of NDSU with a degree in Agronomy. Mr. Weston represents the Red River Retention Authority while working with numerous local, state and Federal authorities as well as many units of government and water resource partners in addressing retention and flood damage reduction efforts in the Red River Basin. Mr. Weston brings with him a broad range of water resource planning and management experience in the Red River Basin and across North Dakota and Minnesota. Throughout his 37+ year career with NRCS, and nearly two years with the Retention Authority he has participated in numerous river basin, watershed, and floodplain management studies. He was a key author in drafting environmental assessments for NRCS P.L. 566 Small Watershed flood control projects within the basin. Keith has been involved with the Red River Basin Commission's Natural Resources Framework Plan (NRFP) and implementing the Long-Term Flood Solutions goals for the Red River Basin. Today his efforts are focused on the Red River Retention Initiative goal of reducing main stem flows by 20% through retention strategies.

Terry Zien is a Civil Engineer, worked at a consulting firm for 3 years (1985-1988), worked at the St. Paul District of USACE since May 1988 (29+ years) in Design, Hydrology, Hydraulics, and Programs and Project Management. He is currently the Senior Program Manager for Flood



Plain Management Services, FRM, and the Silver Jackets Coordinator for MN, WI, and co-coordinator for ND. He is an adjunct employee to Emergency Management as needed for flood reconnaissance, State EOC liaison, and the St. Paul District Temporary Housing team. He has a BS degree in Geology, U of MN, 1983, and a MS degree in Civil Engineering (Hydrology and Hydraulics/St. Anthony Falls Hydraulic Lab), U of MN, 1985. Mr. Zien is a Licensed Professional Engineer in MN since 1991 and has been a Certified Floodplain Manager (CFM) since May 2012.

SPEAKER BIOGRAPHIES

Bret Zimmerman, PE, is a design engineer with Houston Engineering, Inc. (HEI) experienced with urban and rural storm-water modeling. He has been involved in numerous



hydraulic and hydrologic modeling efforts throughout the Red River Basin. He has worked on small-scale projects—such as designing drainage ditches—however, majority of his experience has been working on large-scale, watershed-wide, modeling projects to determine sources of flooding and design flood damage reduction alternatives. He is a registered professional engineer in North Dakota and Minnesota.

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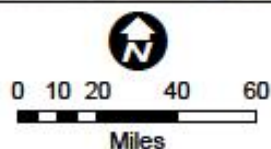
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San Francisco: ArcGIS 10.0, 2011-04-14 10:35:53.574000 File: I:\C:\Users\Paul\Desktop\Map\North Basin\Map\Map A-1 General Location Map.mxd User: TJA



Map A-1
GENERAL LOCATION MAP
Red River of the North Basin
Red River Basin Long Term
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Bejou
Breckenridge
Callaway
Climax
Dilworth
Fisher
Foxhome
Frazee
Georgetown
Halstad
Hawley
Hendrum
Herman
Karlstad
Kennedy
Lake Bronson
Nashua
Newfolden
New York Mills
Oklee
Perham
Red Lake Falls
Stephen
Thief River Falls

North Dakota

Barnes County
Benson County
Cass County
Eddy County
Foster County
Grand Forks County
Griggs County
Nelson County
Pembina County
Pierce County
Ramsey County
Ransom County
Richland County
Rolette County
Sargent County
Sheridan County
Steele County
Traill County
Walsh County
Wells County
Benson County WRD
Eddy County WRD
Foster County WRD
Grand Forks County WRD
Nelson County WRD
Pierce County WRD
Ramsey County WRD
Ransom County WRD
Richland County WRD
Rolette County WRD
Sargent County WRD
Sheridan County WRD
Steele County WRD
Towner County WRD
Traill County WRD
Walsh County WRD
Devils Lake Joint WRD
Red River Joint WRD
Upper Sheyenne River Basin Joint WRD
Arthur
Binford
Casselton
Clifford
Cooperstown
Fargo
Harwood
Hillsboro
Hope
Horace
Hunter
Finley
Kindred
Lakota
Larimore
Lisbon
Mapleton
Mayville
Milnor

Mountain

Neché
Nome
North River
Northwood
Thompson
Tower City
Valley City

Manitoba

RM of Alexander
RM of Bifrost
RM of Brokenhead
RM of Cartier
RM of East St. Paul
RM of Gimli
RM of Hanover
RM of Lac du Bonnet
RM of Lorne
RM of Louise
RM of Macdonald
RM of Montcalm
RM of Morris
RM of Pembina
RM of Piney
RM of Reynolds
RM of Rhineland
RM of Ritchot
RM of Rosser
RM of St. Andrews
RM of St. Clements
RM of St. Laurent
RM of South Norfolk
RM of Springfield
RM of Tache
RM of Victoria Beach
RM of West St. Paul
RM of Woodlands
City of Selkirk
City of Winkler
Town of Altona
Town of Beausejour
Town of Carman
Town of Emerson
Town of Morden
Town of Morris
Town of Pilot Mound
Town of Plum Coulee
Town of Treherne
Town of Winnipeg Beach
Village of Crystal City
Village of St. Pierre-Jolys
East Interlake Conservation District
La Salle Redboine Conservation District
North East Agassiz Water Management Association
Pembina Valley Water Cooperative
Pembina Valley Conservation District
Seine-Rat River Conservation District
Whitemud Watershed Conservation District

RED RIVER BASIN
COMMISSION



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