



NewsWaves



A joint publication of MSAWWA & MWEA
Fall 2016

Straight From The Chair

By: Collette Anderson, MSAWWA Chair

Hello and happy Fall! What a wonderful time of year it is in the beautiful state we are so lucky to call home. I am honored to be your Board Chair this year and would like to express much thanks to our Past Chair, Slim Miller, for his hard work throughout his years on the board. I also want to welcome John Alston back to the board as our Junior Trustee. John is the



Public Works Water and Sewer Superintendent for the City of Bozeman and has been heavily involved in AWWA for many years. This is John's second time on the MSAWWA board. He has also been our National Delegate and Vice President for AWWA. John brings a great amount of experience and enthusiasm to our membership and our board and we are excited to have him back.

This past May we had another successful joint conference. A huge thank you to the City of Bozeman for your commitment to putting on a great conference, and thank you to all those who participated, including our attendees, presenters and of course the vendors who make our conference possible. We are looking forward to another great conference April 18-20, 2017 in Great Falls. Be sure to visit our website at www.montanawater.org for more information!

We are excited to be offering small systems operator training for a third year with an EPA training grant through AWWA. The training is free to attendees and has been a huge success in the past. This year we completed two training courses and had over 40 attendees at each. Barb Coffman of the Montana Environmental Training Center played a pivotal role in facilitating and organizing the training and we thank her for that. The training is taught by volunteer instructors with materials provided by the EPA and makes it possible for us to continue to expand the resources our Montana Section provides for small systems and their operators around the state. The 2017 training will be held in Sidney on September 14th. Check our website for details that will be available soon! (cont. on page 9)

MWEA President's Message

By: Starr Sullivan, MWEA President

Greetings All—

What an honor and pleasure it is to be a member of the board working with so many professional, talented and motivated people. It has been an exciting time to be on the board as its members have accomplished so much in last few years that I've been on the board. Two that especially stand out are the



Grants for Teachers and the Operator's Scholarship Programs. One of my favorite things to do as a Board member is give away money to deserving people to do good things.

I would like to welcome the two newest board members, Rika Lashley and Rodney Lance to the board. Rika is a PE for the engineering firm of Morrison Maierle in Helena. Rodney is the Operations Manager for Veolia N. A. in Great Falls. Rodney has taken over for Dana Audet as the MWEA Executive Secretary. Dana stepped down after 18 years as the MWEA Executive Secretary. Thank you Dana for those years you served.

As the nature of wastewater treatment and storm water discharges continues to move to more complex systems, it is vitally important that engineers, operators, regulatory people and municipalities come together to understand changes in technology and regulation. Of course there is no better place to do this than the annual MSAWWA/MWEA conference in the spring.

On that note, I have been a member of a WEF member association for over thirty five years. Being a member has improved my professionalism, increased my technical knowledge, given me a true understanding of issues in the industry and expanded my professional networks, just to name a few of the benefits. It was worth vastly more than my time and expense and I would encourage you to join as well. ~Starr



***“Working Together To Protect Montana’s Water Resources”
Highlights from the 2016 Conference***

The 2016 annual MSAWWA-MWEA Joint Conference was held in Bozeman on April 27th and 28th and provided an excellent opportunity for networking and a wide variety of sessions and topics eligible for continuing education credits. The Preconference was hosted by MSAWWA on April 26th with approximately 60 people attending the “Water Conservation” themed sessions. Total Conference attendance was approximately 245 including speakers. In addition, there were 57 vendors on site that provided valuable information to all who took advantage of the opportunity. Numerous awards were presented during the banquet on Wednesday evening, as well as at the luncheons on Wednesday and Thursday. The awards presented for MSAWWA and for MWEA at the 2016 Conference were as follows:

WEF Arthur Sidney Bedell Award—Dan Harmon, HDR Engineering

MWEA Small Systems Award—City of Glasgow

MWEA Stockholm Junior Water Prize—Brenna DeMarios, Missoula

MWEA 5S Award—Mark Fitzwater, Helena WWTP & John Alston, City of Bozeman

MSAWWA-MWEA Lifetime Achievement Award—Bill Bahr, MT DEQ & Bill Enright, Interstate Engineering

MSAWWA-MWEA Donald Willems Scholarship—McKenzie Joseph, Montana State University

AWWA George Warren Fuller Award—Carl Anderson, Morrison-Maierle

Dignitaries representing both AWWA and WEF were in attendance at the conference. This year, AWWA sent two representatives to the conference—AWWA President Gene Koontz and AWWA CEO David LaFrance. Representing WEF at the conference was Board of Trustees member Thomas Kunetz.

Gene Koontz has been with Gannett Fleming Inc. for 39 years. He currently serves as Senior Vice President and member of the Board of Directors, overseeing the firm’s water and natural resources markets. Gene has been a member of AWWA since 1982 and has been a very active volunteer and leader in the Pennsylvania Section. He has held many previous positions including Section Chair, Director, Chair of the Water Quality, Program and Strategic Planning Committees and member of the Water Utility Council. For the Association, Gene has served as Vice President, on the Finance, Pension and Governing Documents Committees, and as liaison to the Canadian Affairs and Young Professionals Committees.

David LaFrance has a long history of participation in AWWA, beginning in 1995 when he first became a member and volunteered on the Rates and Charges Committee. He was named CEO in March, 2010.

Prior to joining AWWA, David spent 16 years at Denver Water, eventually becoming the Director of Finance. While at Denver Water he reported directly to the GM and worked closely with the Board of Water Commissioners on all aspects of rate setting, strategic planning, capital financing, and legal challenges. Prior to joining Denver Water, David was Project Manager and rate Consultant for CH2M Hill and a Natural Resource Economist for the Corps of Engineers.

As a water utility executive, David has successfully engaged Boards, City Councils and customers, worked with the media, and developed and implemented strategic plans.

Thomas Kunetz is a member of the 2015-2016 Board of Trustees for the Water Environment Federation (WEF), an international organization of water quality professionals headquartered in Alexandria, Va.

Tom is the Assistant Director of Engineering for the Metropolitan Water Reclamation District of Greater Chicago, leading the district’s efforts on key strategic engineering initiatives, including energy neutrality. He has 30 years of experience in the field of environmental engineering, in both the public and private sectors, focusing on design of wastewater treatment facilities, improving the water environment, and protection of public health.

Thank you to these three individuals for attending the 2016 Joint Conference!

~2016 Conference Photos~



Mary Ann Dickinson, President/CEO of Alliance For Water Efficiency was guest speaker at the 2016 Pre-conference titled "Water Conservation".



Brian Heaston and others with the City of Bozeman lead the AWWA Water Utility Audit Roundtable Discussion at the 2016 Preconference



Exhibitors are set up and ready for the Tuesday evening Ice Breaker.



Bill Bahr presents the MWEA Small Systems Award to the City of Glasgow. Congratulations!



2015-2016 MWEA President Amy Deitchler presents long-time Sec/Treasurer Dana Audet with a service award. Dana served on the board for over 18 years. Thank you Dana for your dedication and contributions!



2016 Joint Conference Opening General Session.

Are You Ordering Books from AWWA?

If so, please place your order through Robin Matthews-Barnes, MSAWWA Executive Secretary. MSAWWA receives credit for your order. The cost is the same to you, but MSAWWA gets a bonus!

NewsWaves is a publication of the Montana Section of the American Water Works Association and the Montana Water Environment Association and is published twice yearly. It is available for viewing or printing on our website at: www.montanawater.org.

We welcome contributions to **NewsWaves**. For more information, contact:

Robin Matthews-Barnes
PO Box 582

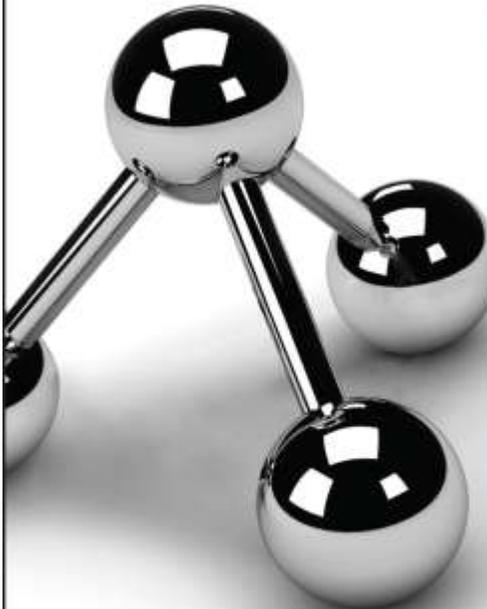
Seeley Lake, MT 59868

Phone: 406-546-5496

E-mail: Info@montanawater.org

Calling All Student Writers!! Write About Anything Water and Receive \$100

MSAWWA and MWEA produce **NewsWaves** twice yearly for the water and wastewater industries including professionals from Montana cities and towns, engineering firms, and equipment suppliers. We certainly would like to hear from the education community as well. For each newsletter we encourage submission of student papers of 1000 words or less. If the submitted article gets published in the newsletter, the student will receive \$100 along with a 1 year membership to AWWA or WEF. The next newsletter will be published this coming winter/spring. Articles must be received by February 15, 2017 to be considered. For more information, please contact Robin Matthews-Barnes at 406-546-5496 or by email at: Info@montanawater.org



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Do You Have Something To Say?

If you have ideas, announcements, articles, or stories you would like to submit for consideration for publication in the next issue of *NewsWaves*, please email Robin Matthews-Barnes at info@montanawater.org. The next issue will be published in March 2017, so keep it in mind!

Have you checked out the MSAWWA-MWEA joint website lately?

www.montanawater.org

If not, please do so! Let us know what you think—we are open to comments and suggestions for additional content. Contact Robin Barnes at info@montanawater.org



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~Joint Scholarship Fund Raffle~

Thank you to **Morrison-Maierle, DOWL, Great West Engineering, and Interstate Engineering** for their generous donations for this year's raffle to help fund the Donald G. Willems Joint Scholarship.

1st prize was a \$500 gift certificate to Chico Hot Springs Resort. 2nd prize was a \$125 gift certificate to Cabelas and 3rd prize was a \$125 gift certificate to Scheels.

1st prize winner was Warren Newell with Peak2Peak Sales, 2nd prize winner was Sean Russell, and 3rd prize winner was Scott Schaefer.

The raffle raised over \$1000 for the scholarship fund. Thank you to all who purchased tickets to support the opportunity to help the students who benefit from the scholarship awards. Thank you also to Coralynn Revis (Chair) and all who serve on the scholarship committee.



American Water Works Association

Mission of Montana Section AWWA—

The Montana Section of American Water Works Association is dedicated to the promotion of public health and welfare in the provision of drinking water of unquestionable quality and sufficient quantity. Montana Section of AWWA will provide the forum and opportunity through which its membership can exchange information, learn of new issues and technologies, educate the public, and enhance the professionalism of workers in all areas of the water industry.

Mission of the Montana Water Environment Association

The Montana Water Environment Association (MWEA) is a non-profit organization dedicated to the preservation and enhancement of Montana's water environment. The Association is committed to advancing science and education, disseminating technical information, increasing public understanding and promoting sound public policy in the water quality and water resources field.

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Mr. Al Towler and Mr. Bill Enright, both recently retired, enjoy the Wednesday evening banquet. Mr. Enright received the Joint Lifetime Achievement Award that night.



Environment Association

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MONTANA WATER ENVIRONMENT ASSOCIATION OPERATOR SCHOLARSHIPS

The Montana Water Environment Association (MWEA) has allocated funds to certified operators looking for assistance in paying for continuing education and/or training event costs. Applicants must complete a scholarship application one month ahead of the training session they plan to attend, and awards of up to \$500 can be realized by each applicant. When approved in advance, the award money can be used to pay for the actual training as well as other miscellaneous costs associated with attending. Applicants must be a Montana certified operator or operator in training. Applications are available through the Montana Environmental Training Center (METC) or can be obtained by emailing MWEA Secretary/Treasurer, Rodney Lance at rodney.lance@veolia.com

Thank you Morrison-Maierle!

For once again providing the prize for the early bird drawing at the conference. Morrison-Maierle has been donating a beautiful Big Sky Carvers wooden duck as the prize for one person who is drawn from the pool of those registering for the conference before the "early bird" deadline. Amanda Hoar with the City of Rapid City Water Reclamation Dept. was the recipient of the duck this year. Congrats Amanda! (shown below with Amy Deitchler, MWEA President)



Straight From The Chair continued....

Another exciting thing happening with our section is the activity with our Students and Young Professionals Committee (SYP), which is a joint committee with the MWEA. Keely Barry, with AE2S has taken over as the committee chair and is generating a lot of interest with students around the state. Both Carroll College and Montana Tech have expressed interest in starting a student chapter. The rivalry may extend beyond the football field to see who gets it going first! I was excited to have the opportunity to join Keely and Matt Mudd, with Great West Engineering, at Montana Tech where we presented some information about MSAWWA and MWEA and the engineering field as a whole. As part of that presentation, Great West Engineering was willing to sponsor student memberships for those interested. This resulted in 14 new MSAWWA student memberships and 7 MWEA student memberships. So, a big welcome to our newest student members, and thank you Great West Engineering!

MSAWWA's membership continues to grow (up more than 4% in 2016) and it's wonderful to see the commitment across the state to preserve and enhance our most valuable water resources. Our membership is comprised of people in all areas of the industry from regulators to operators, engineers and suppliers, young students and professionals to those who have been doing this for what might seem like forever! What an amazing opportunity it is to be part of this network of people who all share the same goal. Thank you to all of you belonging to MSAWWA for your involvement and your commitment to our organization and to the water industry. I look forward to serving as your Chair and aim to continue my own involvement in the committees on which I serve. I encourage you to submit your abstracts and take part in our technical program at our 2017 Joint Conference and I look forward to seeing you all in Great Falls! ~Collette

Brown Bag Session at Montana Tech

On November 14th, Montana Tech students were given the opportunity to learn more about the MWEA, MSAWWA and the Joint SYP committee professional organizations as well as hear about some interesting water resource projects throughout Montana. MSAWWA provided pizza to the students for the informational "lunch and learn" format. The presentation was given by MWEA/MSAWWA members Keeley Barry of AE2S as well as Collette Anderson and Matt Mudd of Great West Engineering. All three presenters are also Montana Tech Alumni. Great West Engineering sponsored student memberships for 21 students—14 for AWWA and 7 for WEF. Several students showed interest in possibly incorporating a local chapter and SYP committee on campus. It also didn't hurt fueling a local rivalry by mentioning to the Tech students that Carroll was already in the process of starting an AWWA/SYP student chapter!



Message from MSAWWA's National Director ~Logan McInnis~

Dear AWWA Members,

Well, its hard to believe but I'm already in the last year of my term on the AWWA Board. I guess they keep you around just long enough to figure out what's going on and then they send you packing! Its been a truly wonderful experience for me and I am grateful for the opportunity you all gave me to represent our section.

AWWA continues to accomplish great things. Most importantly, our membership has grown and continued to stay above the 50,000 threshold that is the goal of the association. As an aside, our Montana section membership has also grown almost 4% this year to 262. Growing and retaining membership doesn't happen by accident and the Association and our Montana section have both worked hard to be where we're at.

AWWA continues to make progress on several key initiatives, including the opening of our first overseas office in India, creation of the "One AWWA Operator Scholarship", growing the Community Engineering Corps program, continued progress on implementing the Water Infrastructure Finance and Innovation Act (WIFIA) program, and successfully completing several training grant opportunities through EPA.

Several of these programs have directly impacted our Montana section. With funding provided by AWWA, we have completed several free CEC training courses targeted to small systems. Many of our members and other small systems have benefitted from these opportunities that have been spread around the state. We are in the planning stages for another one in Sidney in September.

Our Montana section has also offered two \$500 "One AWWA Operator Scholarships", but unfortunately to-date we have not received any applications. Information and an application form for this scholarship can be found at <http://www.montanawater.org/awards-scholarships/scholarships-available/> . The scholarship can be used for many different purposes, including paying for costs to attend Water School or even to help an operator attend our annual conference who couldn't otherwise afford to come.

Lastly, the Montana section is working towards establishing its first Community Engineering Corps project on one of Montana's reservations. If you're interested, you can find more information on the CECorps at <http://www.communityengineeringcorps.org/>. Drop me an email at logan@mtnwater.com if you're interested in participating.

In closing, both the Association and the Montana section are in really great shape. We are growing, providing greater benefits to our members, and spreading out our footprint to help others around our world and our state have better access to safe water. That's something we should all feel really proud to be a part of. I thank you all again for the opportunity to represent our Section on the AWWA Board and I assure you that Greg Lukasik, our incoming Section Director, will be a phenomenal representative for the next 3 years.

Sincerely,

Logan McInnis



Montana Section
American Water Works Association

Message from MWEA's National Delegate ~Amy Deitchler~



I recently attended WEFTEC in New Orleans on behalf of MWEA as a new member of the House of Delegates. There were more than 20,000 attendees in the Big Easy for the conference. It ranked in the top five largest conferences for the 89 years WEFTEC has been held. The conference center in New Orleans is approximately 11 blocks long and held over 1,006 vendors. The vendors were showing off their latest equipment and newest innovations. The exhibitor hall was remarkable, and I recommend anyone attend given a chance. This year's general session featured a keynote address from Joe Whitworth, President of The Freshwater Trust, focusing on protecting and restoring freshwater ecosystems through science, technology, and incentive-based solutions. A portion of the opening general session can be viewed here: <https://www.youtube.com/watch?v=JHW55wQfJul>

In addition to the amazing conference, the House of Delegates were given the opportunity to participate in the service project. The service project is organized by WEF's Students & Young Professionals Committee benefiting the host City each year. This year the service project was held on the grounds of City Hall. Construction included a bioswale and rain garden to help slow and filter storm water runoff from a parking garage structure and building roof. It was exciting to see the energy and passion of the SY&P had for the project. The SY&P put the entire House of Delegates to work getting the project finished. I encourage all of you to help support and strengthen our SY&P committee.

In the fall, the MWEA Board met in Helena. I am excited to announce that the board voted to give this year's charitable donation to the Montana Watershed Education Network. The Montana Watershed Education Network is a non-profit organization dedicated to providing river ecology knowledge and field science experiences to children and young adults throughout western Montana. Our donation will help provide financial support for CS Porter Middle School to take field trips to the Bitterroot River to study the local biology. The board plans on using future charitable donations to support different organizations throughout Montana. If you have any recommendations for charitable organizations, please contact one of the board members.

I wanted to remind everyone of exciting MWEA programs, including the Operator's Training Scholarship and the Grants for Teachers programs. The Operator's Training scholarship is awarded to Montana operators to attend continuing education or training events. The Grants for Teachers program was established to support water science education, involvement, and restoration for Montana students' grades K-12. Please get the word out for both of these programs to operators and teachers. The applications can be found here: <http://www.montanawater.org/awards-scholarships/scholarships-available/>.

I am excited to serve as your National Delegate to WEF over the next few years. Please contact me if you have any questions, concerns, or want to know how to get involved. We have a lot of exciting committees and programs that can always use more support!!

Thank you,
Amy Deitchler



Environment Association

~2016 Conference Photos~



John Alston, far right and Mark Fitzwater are inducted into the MWEA Select Society of Sanitary Sludge Shovelers (5S) and are presented with their pins by Dana Audet, MWEA Exec. Secretary.



Carl Anderson with Morrison-Maierle is awarded the George Warren Fuller Award by Gene Koontz, current AWWA President. Congratulations to Carl for receiving this prestigious award!



Bill Bahr with MT DEQ is presented the Joint Lifetime Achievement Award. Paul Lavigne, also with MT DEQ prepared the citation and presented the plaque. Thank you Bill for your many years of contribution and enjoy your retirement!



Bill Enright with Interstate Engineering was also presented with the Joint Lifetime Achievement Award. Chris Clark, also with Interstate Engineering nominated Bill and presented the plaque. A much deserved award for someone who has contributed to the organizations for many years. Best wishes to you Bill in your retirement!



At left, Dan Harmon with HDR Engineering is presented with the Arthur Sidney Bedell Award by Tom Kunez, a member of the WEF Board of Trustees. This award acknowledges extraordinary personal service to WEF and a Member Association. MWEA began honoring members with this award in 1950, and it is the oldest of the awards given by MWEA on behalf of WEF. Congrats Dad and thank you for your service.

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Rick Warner



Barry Liner

MA Newsletter Article from WEF Headquarters October 2016

Headline: A Legitimate Reason to Have a Beer
**Deck: Microbrews give communities a taste of
high-purity potable reuse**

By Rick Warner and Barry Liner

Beer is a product that everybody likes to talk about. The explosion of microbreweries around the United States gave Clean Water Services (Portland, Ore.) an idea for a program to start conversations about the reusable nature of all water. The utility began partnering with Oregon home brewers in 2014 to brew beer from reclaimed water to demonstrate that water should be judged by its quality, not its history.

Sustainable Beer Smackdown

The utility produced a batch of high-purity water that far exceeds safe drinking water standards and provided it to local home brewers. The beers, using the Pure Water Brew brand, were featured at WEFTEC 2014 and WEFTEC 2015 as part of the Sustainable Beer Smackdown. Each successive year, the Smackdown has gained new contenders. In September 2016, at the WEFTEC 2016 Innovation Pavilion, Hillsborough County in Florida introduced its New Water Brew, joining Clean Water Services and the Activated Sludge beers from the Milwaukee Metropolitan Sewerage District and The Water Council (Milwaukee, Wis.). In addition, CDM Smith (Boston), in partnership with the Water Replenishment District of Southern California, served up an Indian pale ale called the FAT Californian, named after the full advanced treatment (FAT) model of treatment for potable reuse applications.

This year, the Reuse Beer Smackdown dovetailed nicely with the release of the WEF Water Reuse Roadmap, a collaborative effort by WateReuse (Alexandria, Va.), Water Environment & Reuse Foundation (WE&RF; Alexandria, Va.), and the National Water Research Institute (NWRI; Fountain Valley, Calif.). Such efforts serve to engage industry professionals, public leaders, and imbibers everywhere in this conversation about clean water, not only for its role in health, but also in supporting big and small businesses.

The importance of legitimacy in reuse

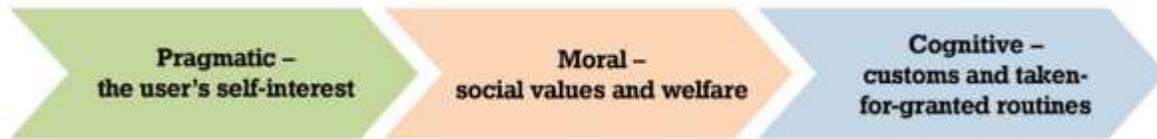
While the beer events are fun and engaging, the most important aspect of these efforts is the focus on creating an authentic conversation with the larger community about water quality. These conversations are the cornerstones of a sociological concept known as “legitimacy.”

Legitimacy is more important as communities consider reuse projects, particularly potable water reuse. Reuse projects have often been met with public opposition, despite having proven that the technology and water quality meet or exceed drinking water standards. Oftentimes, technical professionals such as engineers and scientists believe the public will accept new technologies when it is provided with information through marketing and public education. Such outreach efforts need to be authentic to achieve public support.

Three levels of legitimacy need to be addressed to have a successful project. (continued next page)

- The Pragmatic level focuses on the user’s self-interest, seeking to answer questions such as “How do I benefit personally?” and “How am I involved in the decision-making process?”
- The Moral level deals with social values and welfare, addressing questions like “How is quality and process safety guaranteed?” and “Is the organization trustworthy?”
- The final level, Cognitive, deals with customs and routines that are taken for granted. “Does the technology fit with my daily life?” and “Is the technology essential, with no feasible alternatives?” are examples of the inquiries that community members need answered.

Three Levels of Legitimacy



Orange County and Nevada strive for legitimacy

One example of how legitimacy can produce successful results is the Orange County Groundwater Replenishment System in California. Through its dedication to the outreach efforts, utility managers were recognized as trustworthy and competent experts in the community. (Learn more in the publications listed in “Further Reading”). Taking the lessons that Orange County learned to heart, a northern Nevada utility values legitimacy as part of a feasibility study that may someday lead to Nevada’s first potable reuse project.

Essentially, the feasibility study must show that every aspect of the treatment train is robust and redundant. The utility takes full ownership from the home lateral to the final compliance testing, ensuring the public it should have the full confidence in the water utility. This also includes looking carefully at pretreatment ordinances, collection systems, resource recovery treatment processes, and the most advanced water purification processes.

One cornerstone of the feasibility study is a demonstration-scale project. Not only will this project show that treatment technologies are able to perform and meet stringent regulations, but community leaders and the general public also will be able to visit and see water purification processes in action. The public will be able to meet with the utility’s operations and laboratory staff, and these events will showcase the agencies’ technical skills and dedication to quality and also give the utility an opportunity to interact and share ideas with customers.



Photo caption: Local beers created by utilities and microbreweries were showcased at WEFTEC 2016.

Photo credit: Water Environment Federation

(continued next page)

(continued from page 15)

Building trust and confidence with each community is vital. The Northern Nevada Regional Effluent Management Team driving this feasibility effort includes representatives from the City of Reno, Truckee Meadows Water Reclamation Facility, Truckee Meadows Water Authority, the City of Sparks, Washoe County, and the Northern Nevada Water Planning Commission. It is an exciting time to be in the water business, and the Northern Nevada Effluent Management Team demonstrates that utility leaders take the trust the public has afforded them very seriously.

Rick Warner is a senior engineer at Washoe County, Nev., and President of the Water Environment Federation (Alexandria, Va.). **Barry Liner** is director of the Water Science & Engineering Center at WEF.

Further Reading

Binz, C., S. Harris-Lovett, M. Kiparsky, D. L. Sedlak, and B. Truffer (2016). "The thorny road to technology legitimation—Institutional work for potable water reuse in California." *Technological Forecasting and Social Change* 103: 249–263.

Harris-Lovett, S.R., C. Binz, D.L. Sedlak, M. Kiparsky, and B. Truffer (2015). "Beyond user acceptance: A legitimacy framework for potable water reuse in California." *Environmental Science & Technology* 49(13): 7552–7561.

Jordi, Andres (2015). "Legitimacy—The key to successful implementation." *Eawag Aquatic Research News*, October 2015. https://www.eawag.ch/fileadmin/Domain1/News/User_Acceptance_englisch.pdf

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Water For People

Thank You to **Great West Engineering, R.L. Winston Rod Co., and Montana Fly Goods** for again donating the fly rod and reel for the Water For People raffle that took place at the conference. Retail value of the prize was \$1,100.00. Over \$3100 was raised for Water For People at the conference this year including contributions from Mountain Water Company, and from the silent auction items and Thursday lunch auction item donated by Spencer Stone with Curb Box Specialists. Congratulations to Matt Smith on winning the rod and reel. Thank you to Carrie Gardner and John Camden (Co-Chairs) and the other members of the Water For People committee for all of your efforts, and thank you to those who supported the cause by purchasing tickets or auction items.

WHAT'S THE VALUE OF WATER?

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Past George Warren Fuller Awardees (standing) gather around Carl Anderson of Morrison-Maierle as he is revealed to be the 2016 recipient of the highest honor that AWWA bestows. Congratulations to Carl for an honor well deserved.



SMALL SYSTEM OPERATOR TRAINING:

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Free training coming in 2017!

The Montana Section AWWA in partnership with the Montana Environmental Training Center will again be offering a free small system training workshop in 2017. The 8 hour workshop will be held in Sidney, MT with CEUs available. The workshop is titled "Training and Technical Assistance to Improve Water Quality and Enable Small Public Water Systems to Maintain Compliance with the Safe Water Drinking Act". The workshop is made available through EPA Grant funding awarded to RCAP, and a subagreement with AWWA.

The content will include updated and revised topics from the 2016 workshop such as Coliform Sample Collection, DBP Treatment Strategies, Disinfection Byproducts, Disinfection Overview, Distribution System Infrastructure, Distribution Water Quality, Flushing, Main Breaks and Cross Connections, Regulatory Review, Arsenic Rule Compliance, Nitrate Rule Compliance, Radionuclides Rule Compliance, and Source Water Assessment and Protection, . The workshop will be held in Sidney on Thursday, September 14, 2017. Please feel free to contact Robin Barnes, MSAWWA Exec. Secretary/MWEA Exec. Director at info@montanawater.org for more information. More information will also be posted on the joint website at www.montanawater.org as it becomes available.



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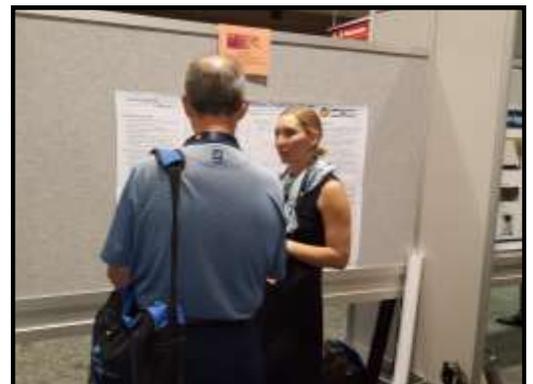
Water and Wastewater Treatment, Transfer, and Control Equipment

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that participated at the 2016 Joint Conference
~Your support of the Annual Joint Conference is vital
to its success and is sincerely appreciated~***

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Jodie Binger, Bartlett & West, was the winner of the first SYP “Fresh Ideas” poster competition at the 2016 Conference (pictured left with Joint SYP Committee Chair Dave Carlson). Jodie was awarded with an expense paid trip to ACE16 where she presented her poster at the national level (photo at left). The Joint SYP Committee plans to hold another poster competition at the upcoming 2017 Joint Conference next spring.



STUDENT & YOUNG PROFESSIONALS (S&YP) COMMITTEE

for the Montana Section of AWWA & Montana WEA



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2017 MSAWWA-MWEA Joint Conference

When: April 18-20, 2017

Where: Best Western Heritage Inn - Great Falls, MT

COMPETE! S&YP POSTER COMPETITION

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FOR MORE INFORMATION

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Keeley.Barry@ae2s.com



OPTIMIZATION AND UTILIZATION OF NEW AND EXISTING INFRASTRUCTURE TO FUTURE ENHANCE PRODUCTION OF HIGH QUALITY DRINKING WATER

Jim Rearden, Public Works Director, City of Great Falls
 Courtney Lyerly, Project Engineer, City of Great Falls
 Wayne Lovelis, Water Treatment Manager, City of Great Falls
 Greg Dye, Project Manager, Black & Veatch Corporation

In their approach to replace and improve capital facilities at their water treatment plant (WTP), the City of Great Falls (City) has long taken the cost-effective strategy of optimizing, as much as feasible, the existing infrastructure to produce high quality finished water. Continuing with this strategy, the City has undertaken a \$55,000,000 project to upgrade the facilities at the WTP. The project has been broken down into several phases to accommodate financial constraints with the first phase addressing the more crucial needs of the WTP. The first phase is a \$25,000,000 construction project aimed at regulatory compliance, adding essential reliability and redundancy, improving operator safety, and improving finished water quality.

Water withdrawn from the Missouri River is treated to produce finished water for municipal uses by the City of Great Falls. The existing WTP is a conventional treatment facility with rapid mix, flocculation, two-stage sedimentation, filtration, disinfection, and a clearwell for high service pumping. Chlorine is the primary disinfectant and is added at the rapid mix. Chloramines are used as the residual disinfectant with the ammonia added post-filtration.

Upgrades included in the first phase will address the following issues and deficiencies:

Regulatory Compliance

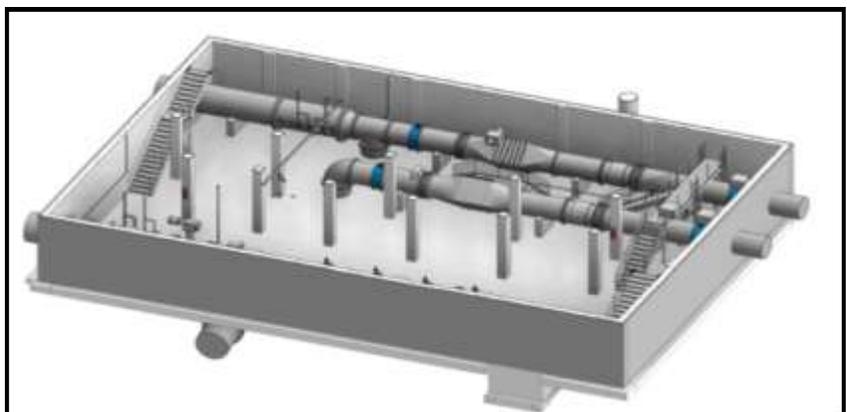
Upgrades to the WTP are required to address the Montana Department of Environmental Quality’s placement of the raw water source for the WTP in Bin 2 under the Long Term 2 Enhanced Surface Water Treatment Rule. The upgrades are to provide 2.0 log inactivation of *Cryptosporidium* oocysts. To comply with this requirement, the City selected ultraviolet-light disinfection (UV disinfection) as the means for inactivating *Cryptosporidium*. In addition, UV disinfection will also be used for the inactivation of *Giardia lamblia*. The UV disinfection reactors will be located post-filtration for maximum efficacy and installed in a new building, the Chemical Feed and UV Disinfection Building.

With less than nine inches of headloss, the UV reactors will be retrofit into the treatment process in between the existing filters and high service pumps. The reactors feature low-pressure high-output lamp technology and are configured in a duty/standby arrangement. Future expansion of the hydraulic capacity of the reactors will be accomplished by adding another row of lamps to each of the reactors.

Adding Essential Reliability and Redundancy

Improvements in reliability and redundancy in the existing WTP will be made by replacing the existing medium-voltage switchgear and adding facilities to provide standby power.

3-D image of the lower level of the new Chemical Feed and UV Disinfection Building showing the two UV reactors. Inactivation of *Cryptosporidium* oocysts and *Giardia lamblia* will be achieved by ultra-violet light.



Continued next page

Medium-voltage switchgear comprises an integral part of the existing electrical system at the WTP. The existing switchgear is nearly 70 years old and critical components are failing. Due to the age of the switchgear, replacement parts are no longer commercially available and therefore must be custom fabricated. Also, there is only one section of switchgear with no provisions for isolating a portion of the gear to allow for maintenance and repair without shutting off the power supply to the entire WTP.

New switchgear arranged in a main-tie-main configuration will be installed to eliminate the challenges associated with custom fabrication of replacement parts and to allow for a section of the gear to be taken out of service for scheduled maintenance and isolation of faulted equipment with minimal impact on operations.



The existing switchgear is shown above. New medium-voltage switchgear installed in a main-tie-main configuration will replace the existing switchgear to improve reliability and redundancy in the electrical system.

flammable and is less irritating to the eyes and skin. New storage and feed facilities for LAS will be housed in the new, building code compliant, Chemical Feed and UV Disinfection Building.

Medium-voltage Switchgear

As mentioned previously, the existing medium-voltage switchgear will be replaced due to the ongoing failure of critical components and the lack of available parts. For the replacement, the latest developments in arc-resistant technology will be incorporated into the switchgear. An arcing fault inside a switchgear assembly produces a variety of physical phenomena including sudden pressure increases and extreme localized overheating. Arc-resistant switchgear is designed to protect operating and maintenance personnel from dangerous arcing faults by redirecting the arc energy out the top of the switchgear and through the roof of the room containing the switchgear.

The existing anhydrous ammonia storage facilities are shown in the photograph. A new liquid ammonium sulfate storage and feed system will eliminate safety concerns associated with storing and handling compressed anhydrous ammonia.

Addition of Standby Power Generation

Water treatment plants are important facilities for public health so providing facilities for standby power generation is warranted. There are no existing standby power facilities and ultimately the plan is to provide sufficient standby power capacity to treat and distribute finished water to the City. The first phase of the WTP upgrade will include standby power for powering actuators on access gates to the WTP site, ventilation of chemical rooms, chlorine scrubbers, and facilities for treatment of waste backwash water.

Improving Operator Safety

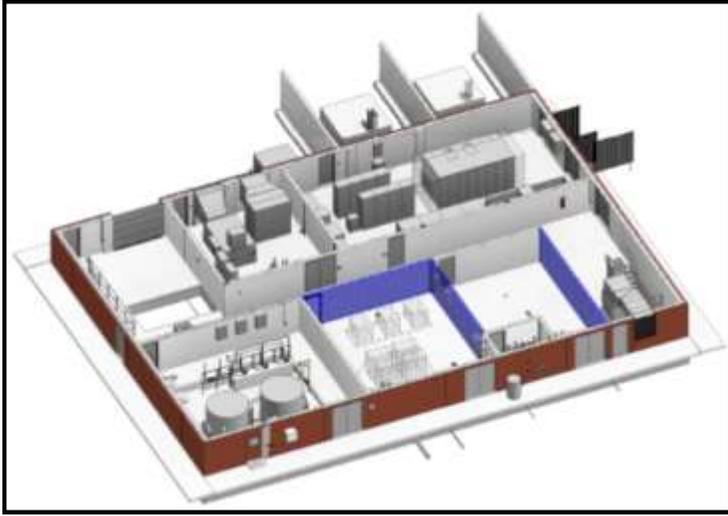
Two significant upgrades included in the first phase directed at improving operator safety are the replacement of the existing anhydrous ammonia storage facilities and replacement of the medium-voltage switchgear.

Anhydrous Ammonia Storage Facilities

The existing anhydrous ammonia storage and feed facilities cannot meet maximum day demands and do not meet current building codes. Anhydrous ammonia is an irritant and flammable compressed gas. Ammonia can cause severe eye, skin and respiratory tract burns and it poses an immediate fire and explosion hazard. To address these concerns, liquid ammonium sulfate (LAS) was selected as the new source of ammonia as it is not



Continued on page 24



3-D image of the upper level of the new Chemical Feed and UV Disinfection Building showing the facilities for the liquid ammonium sulfate storage and feed (lower left) and arc-resistant switchgear (upper right).

Improving Finished Water Quality

Finished water quality will be improved by reducing disinfection by-products (DBPs) and water age.

Reducing Disinfection By-Products

Currently, primary and residual disinfection of the treated water is achieved through the use of chlorine and chloramines, respectively. In the existing WTP, all of the chlorine for both primary and residual disinfection is added at rapid mix, and gaseous anhydrous ammonia is added to the process flow post filtration. Gaseous anhydrous ammonia is discharged directly

through single-port pipes into two of three pipelines conveying filtered water. The third filtered water pipeline, which has the highest flow capacity of the three, does not receive ammonia directly. Hydraulic turbulence is relied upon for dispersing the gaseous ammonia into the chlorinated water and mixing the chloraminated water from the two filtered water pipelines with the chlorinated water in the third filtered water pipeline.

Two-stage chlorination will be used in the upgraded WTP. As the first stage, chlorine will be used as a disinfectant, including that for virus inactivation, and will continue to be added to the rapid mix. The second stage of chlorine addition will be to provide supplemental chlorine for use as a residual disinfectant. The first phase of the WTP upgrade includes the flexibility to inject supplemental chlorine either post UV disinfection or post clearwell.

LAS for the chloramination process will be added immediately downstream of the point of supplemental chlorine addition. It will be mixed with carrier water and the solution will then be injected through a multi-port pipe diffuser to mix the ammonia into the chlorinated water. A mechanical in-line mixer will thoroughly blend the solutions of chlorine and ammonia with the process water.

Another upgrade for improving finished water quality is the use of UV disinfection to inactivate *Cryptosporidium* and *Giardia lamblia*. Using UV to inactivate *Giardia lamblia* has the added benefit of reducing the amount of chlorine required at the rapid mix.

DBPs will be reduced as a result of decreasing the amount of chlorine added at rapid mix through a two-stage chlorine addition strategy, adding ammonia immediately downstream of the supplemental chlorine addition point, improving the diffusion and mixing of ammonia, and using UV rather than chlorine for inactivation of *Giardia lamblia*. In a later phase of the project, the point of application of chlorine for primary disinfection will be moved further downstream in the treatment process which will also help to reduce DBPs.

Reducing Water Age

An existing cylindrical-shaped tank serves as a clearwell for the WTP. A single pipe conveys chloraminated water in and out of the tank and there is no baffling or induced mixing within the tank. As a result of the single inlet/outlet pipe and tank configuration, there is little circulation within the tank. Given this deficiency, and the fact that the tank contains chloraminated water, water quality problems related to long water age frequently arise.

Included in the first phase of upgrades is the replacement of the existing tank with a new tank with multiple cells, each with dedicated and separate inlet pipes, outlet pipes, and baffling. These features will work to improve circulation and reduce water age, which will improve water quality.

An architectural rendering of the new clearwell is shown above. The new clearwell will replace an existing clearwell with limited functionality and process capability



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***Come and take advantage of the educational and networking
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***April 18th—Preconference hosted by MWEA: “Stormwater Alert: Are You
Ready For What’s Next?”***

April 19th & 20th—Conference “Working Together To Protect Montana’s Water Resources”

Location: Best Western Heritage Inn in Great Falls

Registration information will be emailed to members and will also be available on the website soon:

www.montanawater.org

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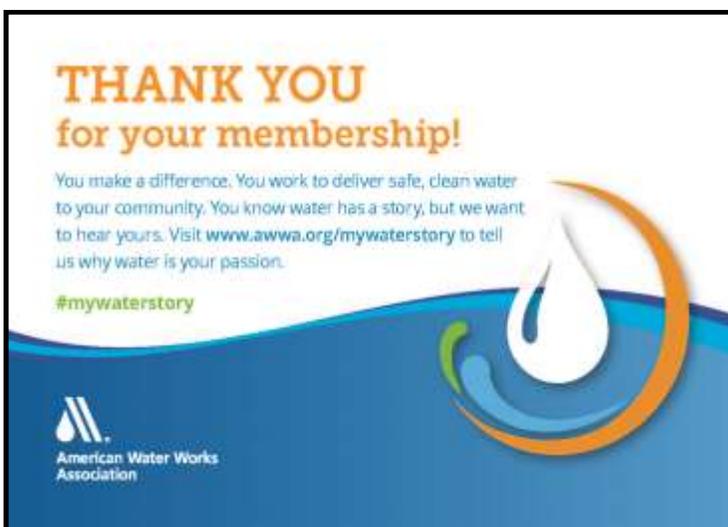
Congratulations!

Steve Ruhd with Morrison-Maierle, Mike Jacobson who has recently retired from the City of Great Falls, and John Camden with Montana Rural Water Systems received their **Silver Water Drop Award** this year! The Silver Water Drop Award recognizes individuals who have been members of AWWA for 30 years.



Donald G. Willems Scholarship

Please remind any students you know that are pursuing degrees in the water or wastewater fields to submit an application for the 2017 Willems Scholarship. March 15, 2017 is the deadline and application information and materials are available on the website—click on the “Awards & Scholarships” tab for an application form, OR click here: <http://www.montanawater.org/awards-scholarships/scholarships-available/> Up to (2) \$1000 scholarships can be awarded each year. This is a joint MSAWWA-MWEA Scholarship. Please pass the word!



Spencer Stone with Curb Box Specialists (above with MWEA President Amy Deitchler) is drawn to receive a free booth space for the 2017 Joint Conference. Spencer has been a long time supporter of the conference and it is exciting that he was drawn for the free booth! Thank you Spencer for your continued contributions to the Joint Conference!



Congratulations Chico Hot Springs Water System!

AWWA President Gene Koontz, AWWA CEO David LaFrance, and MSAWWA National Director Elect Greg Lukasik (photo at left) served as judges for the Montana Section's 3rd Annual Best Tap Water Taste Test. Chico Hot Springs Resort won the contest and competed at the national competition at ACE16.

Congrats to Chico Hot Springs!

2016—2017 Committee Chairs

Below is a list of the members of MSAWWA and MWEA that volunteered to chair each committee at the 2016 Joint Conference. Volunteers are always welcome, so if you wish to help your association and serve on a committee you may still sign up by contacting the chair of that committee or Robin Matthews-Barnes at Info@montanawater.org or (406) 546-5496.

Joint Committee Chairs

Cross Connection Control

- Barb Coffman (406) 265-3763
barbara.coffman@msun.edu

Exhibitors

- none at this time

Host City

- Mike Jacobson (406) 750-0746
mwjacobson@yahoo.com
- Wayne Lovelis (406) 727-1325
wlovelis@greatfallsmtnet.net

Information Management

- Dave Carlson (406) 268-0626
david.carlson@ae2s.com

Lifetime Achievement

- Paul LaVigne (406) 444-5321
plavigne@mt.gov

Program

- Amy Deitchler (406) 465-6160
adeitchler@greatwesteng.com

Public Education & Information

- Rika Lashley (406) 495-3448
rlashley@m-m.net

Scholarship

- Greg Lukasik (406) 652-5000
glukasik@greatwesteng.com

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- Keeley Barry (406) 268-0626
keely.barry@ae2s.com

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tcampbell@mt.gov

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ncormier@m-m.net

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scott.buecker@ae2s.com

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- Jeremy Perlinski (406) 495-3447
jperlinski@m-m.net

Long Range Planning

- Not active at this time

Membership

- Mike Jacobson (406) 750-0746
mwjacobson@yahoo.com

Pretreatment

- LeAnn Wiegand (406) 495-3584
lwiegand@m-m.net

Stockholm Jr. Water Prize

- Kristi Kline (406) 945-2043
kfarm@mtintouch.net

Stormwater

- Lance Lehigh (406) 219-2633
lance.lehigh@ae2s.com

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ctanderson@greatwesteng.com

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ctanderson@greatwesteng.com

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nate.weisenburger@ae2s.com

Membership

- Logan McInnis (406) 370-8285
logan@mtwater.com

Water For People

- Carrie Gardner (406) 495-6176
cgardner@greatwesteng.com
- John Camden (406) 459-0782
jcamden50@bresnan.net

A SPECIAL THANK YOU.....

To all of the volunteers who helped to make the 2016 Joint Conference successful. It takes many helping hands to make it all come together, and all of the help is greatly appreciated. A special thank you to the Host City Committee, the Program Committee, and MSAWWA Education Committee and the registration desk helpers:

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Doug Whitney
Karen Sanchez
Tyrel Clark

Thank you also to **Barb Coffman** for your help during the week of the conference—your time and experience are greatly appreciated!



Congratulations to McKenzie Joseph!

Recipient of the 2016

Donald G. Willems Scholarship

McKenzie is the recipient of the \$1000 MSAWWA/MWEA Joint Scholarship given in honor of Donald G. Willems. McKenzie is a student at Montana State and is pursuing a degree in Chemical Engineering. Congratulations to McKenzie and best wishes in her future endeavors!



Stockholm Junior Water Prize Awardee

For the third consecutive year, Brenna DeMarios from Missoula Sentinel High School was the recipient of the award for her project titled:

“Use of a Tertiary Algae System to Remove Pharmaceuticals from Wastewater”. She presented her project at the National SJWP competition in Herdon, VA in June. Congrats to Brenna!