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The Official Magazine of the Central States Water Environment Association, Inc.





CSWEA'S 89TH ANNUAL MEETING

MONONA TERRACE | MADISON, WI





PLUS:

- Low Cost Activated Sludge Optimization in Superior, WI
- Deep Sewer Tunnels in Victoria, MN
- Officer Nominees
- From Rainfall to Results
- Global Water Stewardship Spring Update

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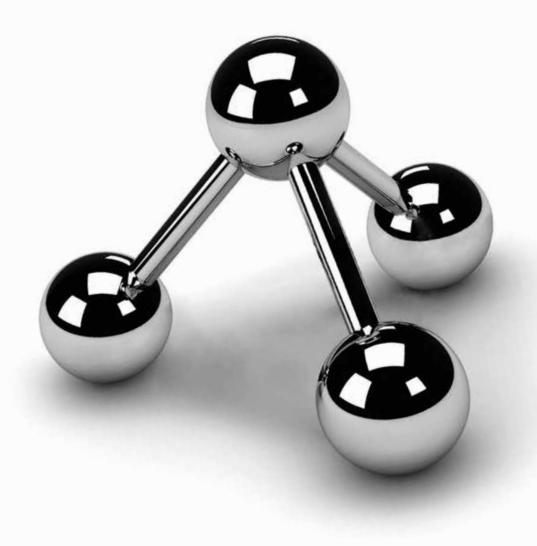
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Living the Dream and Discovering your Passion



By Keith Haas

ou spend your whole career chasing a goal with an ever-changing direction and path. You climb hurdles and ladders, dodge bullets, and avoid pitfalls and accidents. One day you awaken from the dream and begin to look back at where you have been, how you got there, whether it was worth the struggle, and then try to determine if you made a difference. Along the way you hone your skills in public speaking, volunteering, leadership, and making professional contacts and friends along the way. The finish line is getting closer and you pray that the uphill climbs are getting easier and the potholes are fewer and further between. You ask yourself, Did I do enough? Could I have done more? The race against Father Time is getting shorter and your bucket list is getting longer. You can't get back the past, but you can still change the future.

In 15 short years in the wastewater business, I somehow climbed to the top spot in CSWEA as the current President and soon to be Past President. How did I get here? I simply forced myself out of my comfort zone. I tested the water and found it to be refreshing. Not too cold and not too hot. Just about right for me. I didn't seek fame and notoriety; opportunities just happened right before my eyes and someone asked me to step it up a notch.

Organizations that we become a part of rely heavily upon a strong group of volunteers to make them successful. I have a hard time saying no to people and I enjoy helping others achieve a mission and a goal that will make our communities stronger and better places to live. As the saying goes, "You only go around once in life." It's the people that you meet, the bonds that you forge, and the memories that you make that gives us hope for a better life and community. Some might say, "Jump in and get your feet wet or simply get out of the way." The earlier in your career that you can get out of your comfort zone and make a difference, the more satisfying your career will be. If you aren't passionate about

what you are doing in the beginning, it will likely sneak up on you and catch you by surprise one day.

Your perspective on life has a lot to do with your vantage point. When you are struggling in the trenches, the hole seems to get deeper and you wonder if you will ever see the light of day. However, when you get a chance to leave the comfort of the nest and take a bird's eye view from above, the world looks a lot different from that perspective. The air is cleaner, and the sky is an open landscape unencumbered by obstacles in the trenches. From the view above, the problems are readily apparent and seem easier to overcome. The path to success seems easier too. Unfortunately, we must all spend time in the trenches in the beginning, but by spreading our wings and taking deep breaths of clean air, the world presents many more opportunities for us to soar.

From my perch at the top rung, I have been able to see our members working hard in the trenches and forging strong bonds with their fellow colleagues across rough terrain and state and federal borders. The Global Water Stewardship has been instrumental in making some of those bonds possible and giving a cause to our younger members (YPs) to get out of their comfort zones. It is rewarding to see our future leaders spread their wings at such a young age because it will make the path in life so much easier in the years to come as they work on statewide and national stages to shape the environment for our kids and grandkids to blossom in.

Don't underestimate your dreams, your passions, and your goals in life. Father Time is ticking away and your opportunities to make a difference are passing by too. If you are fortunate enough to attend this year's annual meeting in Madison, make it one of your goals to meet at least five new colleagues and friends each day. Extend a smile and a warm and friendly handshake. Strike up a conversation and find out what they are passionate about. Let's get the conversation started and begin to forge new friendships and spread our wings before life passes us by. CS

"Don't underestimate your dreams, your passions, and your goals in life. Father Time is ticking away and your opportunities to make a difference are passing by too."

WEF House of Delegates Meeting at WEFTEC

By Eric Lecuyer and Doug Henrichsen





he WEF House of Delegates (HOD) Standing Committees and Work Groups (WG) for the 2015-2016 term are shown below.

House of Delegates Activities for 2015-16 Term			
Standing Committees	Work Groups		
Budget Committee	Membership		
Nominating Committee	Value of Water		
Steering Committee	Stormwater		
WEFMAX Committee	Innovative Utility Management		
Outreach Committee			

Eric Lecuyer is serving a third term on the Budget Committee and also serves on the Value of Water WG. Doug Henrichsen is serving a second term on the Budget Committee as Chair, and also serves on the Stormwater WG. Many of the Work Group tasks are inward looking – and include how we can improve the House of Delegates, WEF, and better support the success and sustainability of Membership Associations (MAs).

The Budget Committee is in the process of developing an MA survey to obtain feedback on the relative importance of WEF items. Members of the Budget Committee met on January 28, 2016, with WEF staff, members of the Board of Trustees (BOT), and CLC Leaders, to obtain information on the WEF budget and Strategic Plan. The primary task moving forward for

the Budget Committee will be to report to the HOD on how WEF's annual budget aligns with the strategic plan, and provide feedback to both the BOTs and MAs on funding priorities.

The Value of Water WG (and Water Advocates) is working with WEF staff and the BOTs on the Strategic Plan Critical Objective to "Increase the Awareness of the Value of Water." One of the goals of this WG is to create branding that is more closely associated with wastewater (sanitation) rather than simply drinking water.

The Stormwater WG got a late start due to the original Chair stepping down. But they are moving again, and will soon reach out to MAs to identify:

- which ones have stormwater committees, and their level of awareness of WEF national stormwater initiatives;
- which ones have identified barriers to creating MA-level stormwater committees and;
- a list of other regional and national organizations that MAs might partner with on expanding stormwater programs to more members.

WEFMAX 2016

Four locations have been chosen to host WEFMAX in 2016. WEFMAX offers an opportunity for MA leaders at all levels to join together to share success stories and ideas on how MA members can be better served. These fast paced, interactive meetings are open to all members and provide for both enlightenment and networking with other leaders of the water profession from throughout North America and

beyond. The locations and dates are as follows:

- March 9-11, 2016: Orlando, FL (Host is Florida WEA)
- April 6-8, 2016: Philadelphia, PA (Host is Pennsylvania WEA)
- May 4-6, 2016: Chicago, IL (Host is Illinois WEA)
- May 18-20, 2016: Vail, CO (Host is Rocky Mountain WEA)

All members are encouraged to attend one of the WEFMAX meetings.

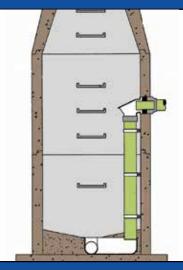
2016 WEF BUDGET INCREASE

For the third, and final year, WEF will be implementing a dues increase for Professional, Academic, and PWO members, with all renewals and new memberships beginning January 1, 2016. The 2015 and 2016 rates are shown below for comparison:

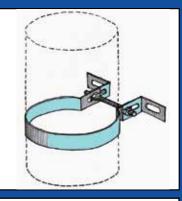
WEF 2016 Budget Increase				
Category 2015 2016				
Professional WEF Dues	\$116	\$133		
Academic	\$116	\$133		
PWO	\$62	\$71		

The dues increase is part of an overall plan developed in 2013 to allow WEF to continue investing in your professional organization to ensure you have what you need to be successful in the water sector. It is an investment for the long term that will help to keep WEF fiscally sound and able to deliver to you everything you need to stay ahead in this business. (\$\mathbb{S}\$

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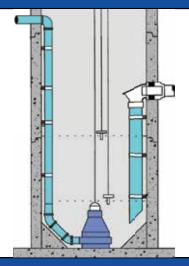


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New Year; New Opportunities



By Mohammed Haque

he New Year has started out with an amazing amount of opportunities for networking and increasing your knowledge on our water quality industry. We have already announced 18 events for 2016. There is no shortage of high-quality opportunities to increase your knowledge, network with your peers, and to collaborate on projects.



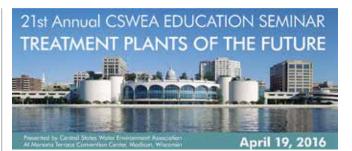




This year, we are blessed with two national conferences that are being hosted by WEF at the Milwaukee Convention Center. The world's top experts on **Odors and Air Pollutants** will hold this WEF specialty conference from **March 21-24**. Odors and Air Pollutants brings together environmental professionals – including engineers, chemists, scientists, directors, supervisors, and consultants – from around the world to provide education and resources on current odor issues, regulatory requirements, and methods for analyzing problems and finding solutions.

The WEF and WERF specialty conference on **Residuals and Biosolids** will be from **April 3-6** at the Milwaukee Conference Center also. This year's conference will provide comprehensive information on how to achieve resource recovery, with topics ranging from the latest research on recovery technologies to examples of tools and approaches that support the development of resource recovery programs. The technical program is structured to benefit all attendees, offering valuable learning opportunities to both seasoned biosolids professionals and newcomers to the field. CSWEA will be hosting a Friends of Biosolids social event at the Milwaukee Public Museum on Sunday, April 3, from 6 p.m. to 9 p.m. to kick off the event.

You can register for both WEF events at www.wef.org/conferences.



Following these two high-caliber events in Milwaukee, CSWEA's Education Seminar will be in Madison, WI, on April 19. The seminar is looking to be one of the best yet, focusing on Treatment Plants of the Future. It will feature the chief executives for the three largest facilities in Illinois, Minnesota and Wisconsin, and their presentations on what they as leaders, foresee as the strategic direction of their facilities and a future of total resource recovery. Nationally recognized keynotes will be Dr. Glenn Daigger and Dr. Bruce Rittman, providing insight on their academic insights on the future of resource recovery. Regional talents such as Dr. Daniel Zitomer, Nick Menninga and Menachem Tabanpour will provide their perspectives as well. It should be an excellent seminar, and you can register at www.cswea.org/events/.

In addition to all of these high profile regional and national events, we still have many of our state Section events that provide excellent focused educational opportunities.



In Illinois, a Section meeting is slated for early March, followed by the Government Affairs Seminar on March 22, in conjunction with the IAWA mini-conference. A lab and pre-treatment event is being scheduled for April and the

Collection Systems Seminar is currently collecting abstracts for their June 9 event.

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In Minnesota, the Innovative Conference just celebrated their success from their February 9 event. They are looking forward to their Collections Workshop on April 6 and their Conference on the Environment on November 9.



In Wisconsin, we just wrapped up the inaugural YP Event called Brew 2 Poo. It featured a Stevens Point brewery tour and a treatment plant tour and included many UW-Stevens Point students. Upcoming events include the winter

Section meeting on February 24, the Government Affairs Seminar on February 25, and the Spring Biosolids Symposium on March 22. The Collection Systems seminars are scheduled on June 9 for the Classic, and July 21 for the Northwoods event.

As you will notice in this issue of the magazine, the 89th Annual Meeting of CSWEA is looking to be a great event. We will continue on the success of our Leadership and Ethics tracks. This year, we are also adding an informal Operators track with invited speakers and a track on Stormwater. As leading experts in cleaning water, we have a lot to offer to the world of Stormwater as they have to meet MS4 compliance. This year's conference should be a great one and if you are a utility, don't forget that we have additional incentives for you through the Utility Registration rate to maximize your continuing education requirements and almighty dollar.

Lately, I have been spending time volunteering for the work of the Global Water Stewardship (GWS). GWS has been a wonderful endeavor and has generated tremendous excitement. Young and seasoned professionals, including those from other fields, have been volunteering their time and efforts to



GLOBAL WATER
STEWARDSHIP

help GWS solve sanitation problems in a couple of villages in Costa Rica.

As you will read from Amanda Heller's update in the pages that follow, we have been making progress getting the GWS projects integrated into the CSWEA/WEF 2016 student design competition. I recently went to UW-Platteville to meet with the two senior design teams that are working on the GWS Bahia Ballena project. I was impressed by these students and the number of solid questions that they had regarding the projects. They had done their homework. The three professors that have allowed our project to be used for their senior design class were also impressive. To my knowledge, the CSWEA/WEF Design Competition has never enjoyed this status before and it is great to see. The senior design teams are expected to spend in excess of 200 hours on these projects. We are looking forward to seeing them at the April 18 design competition in Madison.

Later that evening, I spoke to the Platteville Society of Environmental Engineers (PSEE). The 30-40 members that were present were very receptive to CSWEA and Global Water Stewardship. Many of them had a desire to get into the water/wastewater sector, so we expect that there will be

some great practical engineers coming out of UW-Platteville in the near future. The PSEE group is also planning on forming a team to compete at the student design competition. I'd like to personally thank **Dr. Michael Penn** from the university. He's been a great help in



spreading the word on our student design competition and the GWS projects. Inspirational professors, such as Dr. Penn, are an indispensable asset to our great profession.

A few months back, we entered GWS into a business plan competition held by the University of Notre Dame. The McCloskey Business Plan competition is open to non-profits and encourages causes that create social impact. Our social impact has massive potential. With 32% of the world's population lacking proper sanitation, the impact of what GWS looks to achieve could be monumental. Our initial pitch made it to Round 2 and then we had to get started with the hard work of putting together a 10-page business plan and financial statements. The rules require that we get current Notre Dame students involved in the work. We were fortunate to get two current students and one alum involved in the actual work.

Much thanks needs to go out to Greg Flynn and **Jenny Poth** (pictured) for their hard work. Greg is a current MBA student at Notre Dame and Jenny is an undergraduate Finance and Theology major. They both were impressed with the work that GWS was looking to do and with our mission. We, in turn, were impressed with their skills and capabilities. They both did a tremendous job of



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helping put the business plan together. The major credit goes to **Maureen Durkin**. Maureen is also an alum, and an engineer with the MWRD of Greater Chicago. She took a liking to what we were doing, understood the need and was passionate to help. She has been nothing short of amazing, putting everything together and helping us wordsmith our final business plan. The plan was entered into the Round 2 submittals on February 19 and we are waiting anxiously for the results.

As we have entered and started 2016, I feel that the opportunities around us appear to be endless. There is no shortage of things to do, ways to educate ourselves, activities to be passionate about or challenges to pursue. It's all for the taking. We just have the hard task of picking something and running with it.



Global Water Stewardship

GLOBAL WATER SPRING UPDATE



By Amanda Heller

n August 2015, Global Water Stewardship (GWS) volunteers and students took a trip to Costa Rica to meet with government officials in Piedras Blancas, as well as to collect project data and meet with community members and government officials in our next location, Bahia Ballena. Since then GWS has made many strides. The growth and support we have received over a very quick five months has been inspirational, emotional, and a sensation beyond words. The amount of work accomplished over this short time frame could fill the entire spring issue of Central States Water. Instead, a few of the highlights and key points of interest are listed below.

Funding and Sponsorship

Since August, committee members have been reaching out to vendors for equipment quotes to provide the minimal mechanical pieces to Piedras Blancas at reduced or straight equipment costs. We have received positive feedback and have provided the Costa Rican governing organizations with estimated construction and operation and maintenance costs.

Other committee members have produced letters and mailing notes to send to potential donors in order to raise GWS funds. These funds will be used for Piedras Blancas engineering, permitting fees, potential construction costs, travel for volunteers, and to begin engineering design with a Costa Rican firm for additional projects.

Sharon Alfaro, our on-the-ground GWS representative in Costa Rica, has been working hard in Piedras Blancas. She has received support from many governmental organizations, as well as local businesses that rely on a clean, healthy environment for business. All entities support the planned facility to be constructed, operated, and maintained in Piedras Blancas.

Our support in Piedras Blancas and the Gulf of Osa is growing every week.

While there has been an outpouring of CSWEA members involved with and donating to the GWS, several of the donors we have had supporting GWS are not affiliated with CSWEA. Through word-of-mouth, social media, and various presentations, our message about GWS has reached those who may have never heard about it before. It is exciting to see people outside of the wastewater industry become interested in our mission.

Currently, funding is our greatest need, however, it takes a lot for donations to be sent from organizations that have never heard of GWS. To increase donations and funding for GWS, we need to promote our cause, and spread the good word of GWS.

The 2016 budget estimate will require fundraising in excess of \$40,000, a little over three times the amount brought in during the 2015 fiscal year. This is a lofty goal. But, over the last quarter of 2015, the GWS team has made impressive strides to increase public awareness. A donation request sent out at the end of the year increased our funds by \$4,750. This included a much appreciated \$3,000 in contributions by CSWEA's state Sections. Our goal is to have enough funding to complete engineering and submit for permits by the August 2016 trip with the Student Design Competition winning team. In order to do this, we need to raise another \$13,000 by that time.

We know we would not be where we are today without the generous donations we have received throughout the past year, and we are thankful for each dollar donated. We are hopeful that our 2016 financial goals will exceed the income goals we have set in the budget, but the only way to get there is to continue exceeding our own expectations.

Project Status



Sharon Alfaro has contacted several families within Piedras Blancas to gather support for the project, and she has talked to many community

children about the problems with contaminated water. Along with increased support and education, Sharon has gathered signatures from nearly all of the homes in Piedras Blancas, signifying the community's acceptance of the changes and potential fees for operation and maintenance of the system. Sharon has been working with local agencies, scheduling presentations, attending meetings, and promoting GWS to government officials to gain their support and funding for this project.

The Costa Rican engineering firm, RQL, was sent partial funds – from those received at the end of the year - so that portions of the final design can get underway. Piedras Blancas quotes have come in, and equipment has been selected. These costs have been submitted to the Governor of Osa to approve the capital costs related to the project. Since GWS plans to fund the design work, all equipment and material cost estimates from the US must be approved by Costa Rica before the local government can purchase the equipment. If the government does not approve the cost of the project, either re-design must occur, or GWS will provide funding for the construction of the projects. This can be in the range of \$3-600,000, depending on the use of solar-powered equipment.

Student Design

The UW Platteville Winning Student Design Team from 2015 sent their final design to GWS for review, and is currently being revised to a final form for submittal to Costa Rican agencies for funding approval.

The 2016 GWS Problem Statement has been completed and sent out to the CSWEA Student Chapters as part of the CSWEA/WEF Student
Design Competition. Although this problem statement is relatively new to the competition, two universities have allowed the GWS project to be completed for class credit. Both the University of Wisconsin-Platteville and University of Illinois – Urbana/Champaign will have teams competing in the design competition, and receiving course credit to do so.

The Student Design Competition will occur on April 18 at the Monona Terrace, Madison, WI. All who are interested are encouraged to come watch and/or participate in judging the presentations.

Marketing and Public Awareness

Another area where GWS has expanded is in social media. We have members controlling Twitter and Facebook accounts, as well as developing a LinkedIn page for GWS. So far we have over 150 followers on Facebook and have had GWS tweets re-tweeted! Many of these followers are people from outside of CSWEA. I encourage all GWS and CSWEA members, as well as friends and family members, to follow GWS as we work to expand our social network even further, and become a common name in the NGO world.

Over the past several months, GWS has been creating a website to inform users of our mission, and the ongoing work we are doing to achieve it. Soon, the website will be finalized and only regular updates will be required. Please visit www. globalwaterstewardship.org to read more about the work we are doing, how to become involved, and ways to donate.

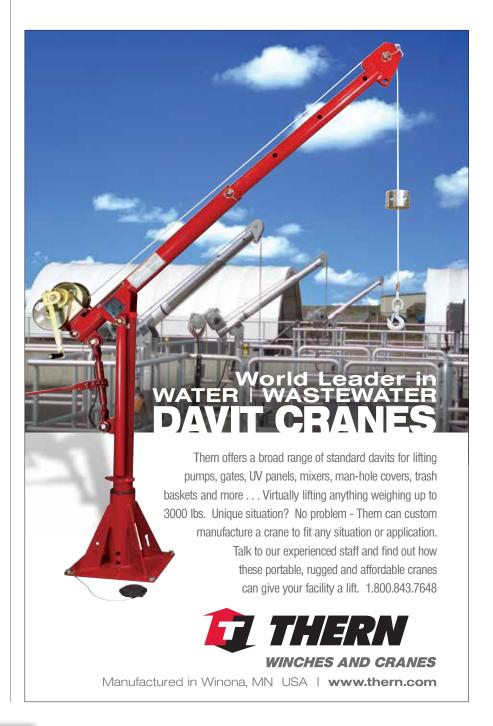
GWS had the opportunity to present at WEFTEC and had a tremendous turnout with great questions; we were even approached by several attendees interested in getting involved. The presentations and articles written for GWS have proven their value in stimulating interest in the organization. Our committees and sub-committees are gaining the support they need, and GWS has grown to nearly 50 members.

Non-Profit Organizational Status

A group of GWS members met mid-December to discuss how to establish GWS as a separate entity and qualify for 501(c)3 status with the IRS. The meeting discussed key items involved with the documentation requirements for the application, including: how many members will be on our board; how many years each term will be; how the people in the chair positions are selected; if there will ever be paid positions within the organization; and so

on and so forth. All information is going to be submitted in a final document so we can obtain status as our own charitable organization. Having this status will create greater opportunities to increase donations and funding sources.

As new members come to GWS, they come with a passion to make a difference. They are ready and willing to jump in wherever needed, and help in whatever way they can. There is no shortage of passion for what GWS is doing. Let's use that and grow GWS! CS





CSWEA Officer Nominations



DAVE ARNOTT
2nd Vice-President Nominee

Dave Arnott has been with Ruekert & Mielke, Inc. since 1999, where he works on wastewater treatment facility, sanitary lift station, and sewer planning, design and construction. He also helps wastewater treatment facilities in operations, maintenance and process troubleshooting. He especially likes the problem solving

nature of wastewater projects.

Dave received a bachelor's degree in Civil and Environmental Engineering from the University of Wisconsin-Madison, and an master's in Civil Engineering Mechanics from the University of Wisconsin-Milwaukee.

Dave has been active at the Section level of CSWEA in Wisconsin since the early 2000s. He chaired the Operations Committee, served three terms as Section Secretary/Treasurer, and was on the leadership rotation with the Vice-Chair, Chair and Past Chair positions.

Recently, Dave got involved with Global Water Stewardship (GWS). He traveled to Costa Rica in summer 2014 with GWS and had a great experience. Helping those less fortunate to have a basic necessity like sanitation is important to him. He looks forward to leveraging his knowledge and experience to help the Association.



BETH VOGTTreasurer Nominee

Beth Vogt has been an active member of CSWEA since 1996, when she served as Secretary-Treasurer of the Illinois Section and on the Annual Meeting Local Arrangements Committee. She has also served as Illinois Section Chair, Illinois Section

Trustee, Local Arrangements Chair, Annual Meeting Technical Program Committee Chair, Education Seminar Chair, and finally served as 2nd Vice-President, 1st Vice-President, President, and Past President of CSWEA.

Beth is a licensed professional engineer in the state of Illinois. She received a bachelor's degree in Civil/Environmental Engineering from the University of Wisconsin-Madison and a master's degree in Civil/Environmental Engineering from Purdue University. She worked as a consulting engineer serving municipal clients for over 18 years before accepting the position of Technical Services Director for the Fox River Water Reclamation District in Elgin, IL.



ERIC LYNNE
WEF Delegate 2016-19 Nominee

Eric Lynne has been an active member of the CSWEA Wisconsin Section since joining in 2009. He started in WEF as a student member, competing (and, humbly, not winning) the graduate-level student paper competition. As Student and Young Professional (YP) Committee Chair (2011-13) and Secretary-Treasurer

(2014-17), Eric continues to help develop new chapters and motivate student design teams.

Eric served as YP Representative to the Executive Board (2012-14). He understands that serving on the Board was a privilege not available to all members, and enthusiastically shared thoughts and comments from YP representation.

As WEF Delegate, Eric will serve as a liaison between the Association and the Federation, providing a fresh perspective to the Delegate role and continuing our Association's strong YP program.

Recently, Eric transitioned to Past-Chair (2014-15) of the Global Water Stewardship (GWS) committee, which successfully attracted new members, engaged dormant members, and inspired active members. He intends to remain involved with GWS, and looks forward to sharing our successes with other MAs in the Federation.

Eric currently works for Donohue in Sheboygan, WI, addressing water and wastewater treatment problems at municipalities throughout the Midwest.



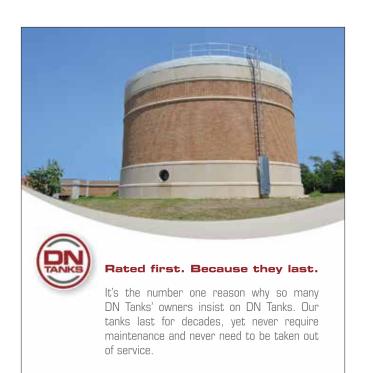
ANNA MUNSON YP Representative Nominee

Anna has been an active member of CSWEA/WEF since 2013, serving as the Vice-Chair of the Minnesota Section Young Professionals committee in 2014, and the Chair since May 2015. Anna assisted the Local Arrangements Committee in 2014 by planning the Tuesday

evening social event at the CSWEA Annual Conference. She is currently serving on the Local Arrangements Committee for the 2017 Annual Conference, to be held in St. Paul, MN.

Anna holds a master's degree from the University of Washington and a bachelor's degree from the University of Wisconsin, both in Civil Engineering. She is a design engineer for Black & Veatch in Minneapolis, providing project design and technical services to water and wastewater clients in the region. Prior to joining Black & Veatch in 2012, she worked for the Minnesota Department of Health in the Community Water Supply group and as a Nuclear Waste Compliance Engineer at Puget Sound Naval Shipyard in Bremerton, WA. She is a Registered Professional Engineering in the state of Minnesota.

Anna is looking forward to continuing the momentum Mike Holland generated with the CSWEA sections with respect to attracting new students and YPs, and engaging our current students and YPs by facilitating opportunities for learning, networking and leadership within our organization.



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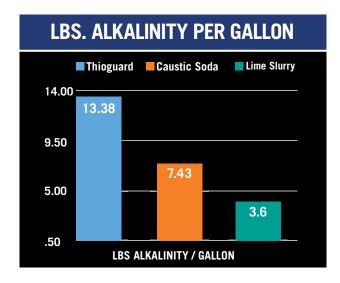


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PREVIEW: CSWEA's 89th Annual Meeting, Madison, WI, May 17-20, 2016

Discover Cassian Your Cassian

Welcome to the 89th Annual Meeting of the Central States Water Environment Association. Our theme for this year is Discover Your Passion.

ith 16 technical tracks, it is readily apparent that our profession provides a wide variety of areas to specialize in and to be passionate about. Wastewater professionals make a significant contribution to society and the environment; however, most customers simply take our contributions and passions for granted.

This year's conference is at the Monona Terrace, located on Lake Monona in vibrant downtown Madison, WI. This world-class facility, designed by Frank Lloyd Wright, provides conference attendees with beautiful lake views and comfortable amenities for the technical sessions, exhibits, and all other conference meetings and events. Downtown Madison is a destination on its own with wonderful restaurants, shopping, the State Capitol, and the city's pedestrian mall (State Street) located within easy walking distance.

Our Local Arrangements Committee has been working diligently to plan an educational and fun conference that will provide exceptional value to all water quality professionals: wastewater and stormwater management and operations staff; public works officials; regulatory staff; consultants; equipment manufacturers and representatives; and others. The annual meeting preparation requires significant efforts by many people, and Mary-Frances Klimek of the Racine Wastewater Utility chairs this year's committee. Mary-Frances is being helped by more than a dozen other CSWEA members in organizing this year's technical and social events, and in sorting out the many details that go into making the meeting a success. Our keynote speakers are Patrick Elliott of MMSD and Nadia Bogue of the Sixteenth Street Community Center in Milwaukee. They will kick off the conference with a presentation of the work that is being done on the Kinickinick (KK) River in Milwaukee. Several miles of concrete trapezoidal channel are being removed to enhance urban stormwater treatment to blend into the neighborhoods. Public education efforts for the citizens are an important component of

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the planning efforts and the ultimate success of the project. We will end our conference by honoring this year's award recipients at the Annual Awards Banquet.

The Technical Program Committee, under the leadership of Jeremy Cramer of the Fond du Lac Wastewater Treatment Plant, has developed an impressive slate of presentations that has made the CSWEA Annual Meeting one of the best technical wastewater conferences in the nation. This year's technical program will incorporate tracks specifically designed to promote WWTP operations and collection system topics, leadership, and ethics (the latter is required for PE licensure in some states). Due to the feedback and popularity of the fourth track, the Technical Program Committee has decided to offer it again to this year's attendees.

Tom Mulcahy of Mulcahy Shaw Water, Exhibits Chairperson, has worked hard to maximize networking and contact opportunities for all of our exhibitors, as well as to have some fun on the exhibit floor. The Exhibitor's Luncheon and Reception will be held on Wednesday, and there will be drawings for door prizes, announced at the larger break sessions. Our CSWEA Global Water Stewardship Silent Auction will also be held in the Exhibit Hall.

Continuing CSWEA's track record of successful networking social events, the Local Arrangements Committee organizers will host an evening of social fun on Wednesday night at a local venue featuring a live piano bar, adjacent to a local sports bar. Join us also on Tuesday morning for the Young Professionals Leadership Academy, or Tuesday afternoon for a tour of the nearby Nine Springs Madison Metropolitan Sewerage District facilities. Recreational opportunities include the golf outing on Tuesday afternoon at Yahara Hills and the Wednesday morning 5K Run/Walk along the local Lake Monona bike path. We sincerely hope that you join us for our 89th Annual Meeting – check out the conference highlights for more details. Your presence and support are greatly appreciated!

Keith Haas, CSWEA President

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Conference Highlights

Registration Hours and Location: Capital Promenade Hallway, Tuesday, May 17, 3 - 6 p.m., Wednesday, May 18, 8 a.m. - 5 p.m., Thursday, May 19, 8 a.m. - 5 p.m.

TUESDAY, MAY 17

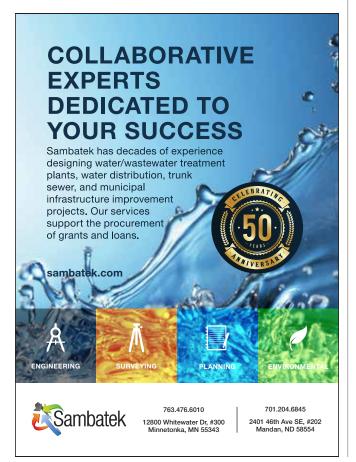
Executive Committee Meeting

Hilton Hotel - Doty Room (second floor), 8 - 11 a.m.

Leadership Academy

Monona Terrace, 8:30 - 11:45 a.m.

The leadership academy this year will be focusing more on professional development and leadership skills and will include: an introduction to CSWEA and how/why to get involved; dedicated time for interaction with other attendees; and speakers on developing leadership skills such as effective communication. Following the academy, interested attendees are welcome to attend the Golf Outing or join a plant tour of the Nine Springs Treatment Facility. The academy is open to professionals young and old alike and should be a great opportunity for networking and career building.



Golf Outing

Yahara Hills Golf Course, 12:30 – 5 p.m. 6701 Highway 12 & 18 East, Madison, WI, 53718

Yahara Hills features large bunkered greens, well-placed hazards and beautiful water features. The 2016 golf event fee includes greens fee, cart, and a box lunch along with a sleeve of balls and a chance at the many



skill prizes. Registration is from 11:30 to 12:30 with a shotgun start at 12:30. Rest assured, it will all end in plenty of time to get to the Meet and Greet Social event located at Monona Terrace. For corporate sponsorship opportunities or for outing details, contact Nick Bartolerio, Golf Outing Coordinator, by phone at 608 251-4843 or by e-mail at nick.bartolerio@strand.com.

Plant Tour

Nine Springs Treatment Facility, 1 - 3 p.m. 1610 Moorland Road, Madison, WI 53713

The Nine Springs Treatment Facility is a 42 MGD activated sludge treatment facility serving the City of Madison and the surrounding suburbs. The tour will consist of seeing the new state-of-the-art nutrient recovery system; its Platinum LEED certified plant additions; the siloxane scrubbing and mesophilic digestion systems; and include a progress update on their new interpretive public relations/museum building. The facility is a five-minute drive from the Monona Terrace Conference Center.



Meet and Greet

Monona Terrace - Rooftop Terrace, 6 - 8 p.m.

The Local Arrangement Committee organizers invite attendees to join the Tuesday evening Meet and Greet. This event is a great opportunity to meet new friends and renew old relationships. Refreshments and light hors d'oeuvres will be available. Golf awards and winners will be announced.





WEDNESDAY, MAY 18

5K Run/Walk

Lake Monona Bike Path 6:30 - 8:15 a.m.

Participants are asked to meet at the starting line for 6:30 a.m. start. Directions will be provided at registration on Tuesday and via email.



General Opening Session

Monona Terrace – Lecture Hall, Level 4, 9 – 9:10 a.m.

Conference Welcome, Keith Haas, CSWEA President

Keynote Address

Monona Terrace – Lecture Hall, Level 4, 9:10 – 10 a.m.

Patrick Elliott of MMSD and Nadia Bogue of the Sixteenth Street Community Center in Milwaukee will be the keynote speakers for the 89th Annual Meeting. Patrick and Nadia will present on their efforts to revitalize Milwaukee neighborhoods along the KK River by restoring channelized floodways into urban park enhancements, and educating the general public and neighborhood residents about storm water issues in their community.

Technical Sessions

Monona Terrace – Rooms E, F, G, KL and MN 10:15-11:45 a.m.; 1:30-4:30 p.m.

There will be four concurrent half-hour sessions A, B, C, and D from 10:15 a.m. -1:45 p.m., and F, G, H and I from 1:30-4:30 p.m. A separate track will focus on leadership and ethics topics (P.E. requirement in some states). There will also be a separate operators track focused on day-to-day operations from 10 a.m. -2 p.m., in session E.

Exhibits

Exhibit Hall Madison Ballroom, 10 a.m. - 6 p.m.

Exhibits showcasing the latest technology in wastewater, collection systems, treatment and many related items will be on display. Be sure to visit our fine exhibitors and thank them for their support of our association.

Lunch

Monona Terrace - Ballrooms, Noon - 1 p.m.

The Exhibitors Luncheon offers exhibitors and conference attendees time to meet in a relaxing and social environment. Please visit the exhibit hall where the Exhibitors Luncheon will be held

Poster Session

Monona Terrace - Hall of Ideas, 3 - 3:30 p.m.

Posters will be on display in the foyer by the Exhibit Hall. Presenters will be available at their posters at this time to discuss their posters and answer questions. Please stop and visit.

Student Paper and Design Presentations

Monona Terrace - Room G, 3:30 - 4:30 p.m.

Join our Student Design and Paper winners as they present their projects in preparation to compete at WEFTEC 2016 in New Orleans, LA.

Exhibitor Reception

Exhibit Hall Madison Ballroom, 4:30 - 6 p.m.

Light snacks and refreshments will be provided in the Exhibit Hall. Share some refreshments, visit with our exhibitors, and thank them for attending this year's CSWEA Annual Meeting.

Wednesday Night Social

The Ivory Room Piano Bar, 7:30 – 11 p.m. 16 W. Mifflin Street, Madison, WI

The Wednesday night social will be held nearby at The Ivory Room Piano Bar. Stop by and enjoy delicious appetizers and cocktails while you socialize with friends and fellow meeting attendees. To add to the fun, enjoy live piano music and entertainment. Drink tickets will be provided. The Ivory Room Piano Bar is a short walk from Monona Terrace. The adjacent Buck and Badger will offer TVs with ever-popular hockey and sporting events.

THURSDAY, MAY 19, 2016

State Section Breakfasts

Monona Terrace – Grand Terrace and rooms K and L, 7:30 – 9 a.m.

Please attend your respective Section's business meeting to be updated on the activities of the Section and its committees.

Don't miss this opportunity to get involved and find out where you can help your Section. The Breakfasts require a ticket; please remember to purchase and bring yours with you.

Exhibits/Sponsors

Monona Terrace – Ballrooms, 9 a.m. – 3 p.m.

Exhibits showcasing the latest technology in wastewater, collection systems, treatment and many related items will be on display. Be sure to visit our fine exhibitors and thank them for their support of our association.

Poster Session

Monona Terrace - Hall of Ideas, 10 - 10:30 a.m.

Technical Sessions

Monona Terrace – Rooms E, F, G and MN 9 – 11:30 a.m.; 1:45 – 4 p.m.

There will be four concurrent sessions, J, K, L and M from 9 – 11:30 a.m. and N, O, P and Q from 1:45 – 4 p.m. The fourth track will focus on utility operations/management topics.

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Lunch in Exhibitor Hall

Noon - 1 p.m.

NEW

New for 2016, We will offer box lunch for all attendees in their registration price.

Association Luncheon

Monona Terrace - Grand Terrace, Noon - 1:30 p.m.

Our newest inductees into the Golden Manhole Society and the 7S will be announced and honored. The Luncheon requires a ticket; please remember to purchase and bring yours with you.

Silent Auction

Monona Terrace – Exhibit Hall Area, Noon deadline for bids

Auction items donated by exhibitors to benefit the CSWEA Global Water Stewardship will be displayed in the Exhibit Hall. Support this amazing initiative by donating or bidding on items. For more information, contact Tom Mulcahy at tmulcahy@mulcahyshaw.com.

Bids are due by noon on Thursday but you may bid throughout the conference; check back often! Winners will be posted in the Exhibit Hall at 2:45 p.m., during the break.

CSWEA Annual Business Meeting

Monona Terrace - Room MN, 4:15 - 5 p.m.

The Association Business Meeting will include reports from the Association Committees and Sections and the annual election

of officers. We encourage everyone to attend and learn about our Association's activities.

CSWEA Annual Awards Banquet

Monona Terrace - Grand Terrace, 6 - 10 p.m.

6 - 6:30 p.m., Social Reception

Connect with friends and enjoy refreshments before the Awards Banquet. Held in the foyer outside the Ballroom.

6:30 - 8 p.m., Banquet and Awards Presentations

Enjoy dinner and honor this year's award winners for the many WEF and CSWEA Awards presented to the very best of our industry. The Banquet requires a ticket; please remember to purchase and bring yours with you.

8 - 10 p.m., Post-Banquet Social

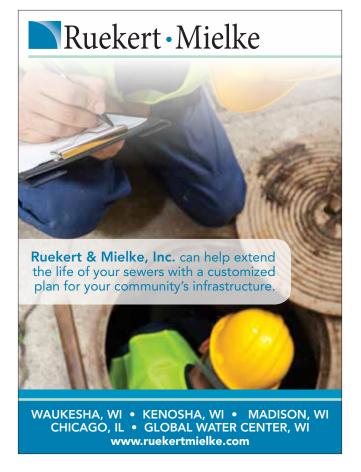
Socialize with your peers and enjoy live music (cash bar).

FRIDAY, MAY 20

Executive Committee Meeting

Hilton Hotel - 2nd floor Doty Room, 8 a.m. - noon







WEF Visitors



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Lynn Broaddus

Lynn Broaddus is a member of the 2015-16 Board of Trustees for the Water Environment Federation (WEF). Lynn is President and Founder of Broadview Collaborative, Inc., a private sector endeavor that assists clients with sustainability issues around water, energy, and food. She is the former Director of the Environment Program of the Johnson

Foundation at Wingspread, where she was charged with re-shaping the Foundation's environmental programming. In that role, she directed a number of water-related reports, including the nationally-recognized *Navigating to New Shores*, which was released at WEFTEC 2014, and the nutrient management and recovery guide she wrote in cooperation with WEF.

Prior to joining The Johnson Foundation, she served for six years as Executive Director of Milwaukee Riverkeeper® and spent 12 years working for The Nature Conservancy and a related organization, NatureServe, where she negotiated the first set of national data-sharing agreements among the nation's Natural Heritage Programs in all 50 states, and the Navajo Nation.

Earlier career experiences included energy conservation program work in the low-income neighborhoods of Lawrence, MA, and teaching biology and mathematics in rural Virginia. She is currently Board Chair of the River Network, and Vice-Chair of the Board of Visitors of the Nelson Institute for Environmental Studies at the University of Wisconsin.



Steve Dye

Since 2011, Steve Dye has served as Legislative Director for the Water Environment Federation (WEF). In his government relations role Steve represents the Federation before Congress, monitors key legislation and federal policies, develops and executes legislative strategies and proposals, and maintains WEF's

excellent reputations before public and private interests in the water sector. He also leads WEF's Water Advocates Program, a grassroots program designed to mobilize and train WEF members to advocate before federal, state, and local officials.

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Keynote Speakers

Senior Project Manager of the Milwaukee Metropolitan Sewerage District (MMSD), Patrick Elliott, and Sixteenth Street Community Center Environmental Projects Coordinator, Nadia Bogue, are leading the charge to make a difference in the highly urbanized corridor of Milwaukee known as the Kinnickinnic (KK) River watershed. Mr. Elliott and Ms. Boque will present the keynote address, sharing their first-hand experiences of engaging a diverse inner city population to become part of the solution to urban storm water runoff, and partnering with a large organization such as MMSD on urban waterway restoration.

The KK River watershed is the most urbanized watershed in the Milwaukee River Basin. Updated floodplain maps show a significant increase to flood risk for hundreds of residential and commercial structures within the watershed. MMSD has plans to reduce this flood risk, as well as remove over six miles of concrete lining from the bed of the KK River and its tributaries. This work will improve riparian buffers, restore stream banks, and provide enhancements to County Park land.

There is also an MMSD led team studying the feasibility of incorporating green infrastructure (that encourages slow infiltration of rain and runoff into vegetated practices such as rain gardens, green roofs, and bioswales) as a strategy to add resiliency to the flood management throughout the watershed.

Working in the Watercourse Section at the MMSD, Patrick manages flood management and channel naturalization projects from the planning phases through design and construction. Most of his work has focused on the KK River watershed. Patrick is

also the District's Watercourse Maintenance Manager, managing contracts which maintain 130 miles of stream channel and 350 acres of riparian land. Prior to his work as a Project Manager, he was a construction inspector for several years for the District, overseeing construction contractors on the District's conveyance and watercourse projects. Patrick received a bachelor's degree in Geography from the University of Iowa and a master's degree in Civil Engineering from the University of Wisconsin-Milwaukee.

He is a Professional Engineer (PE) and a Certified Floodplain Manager (CFM).

Nadia Bogue has been the

Environmental Projects Coordinator in the Sixteenth Street Community Health Center's Department of Environmental Health since 2010. Important lessons learned through that process include the need to coordinate public, private and non-profit partnerships to create successful projects

with a sustainable impact. Nadia holds a bachelor's degree in History and Sociology and a master's degree in Geography with an Urban Environmental focus, both from the University of Wisconsin-Milwaukee. She is also an active board member at the River Revitalization Foundation.



Patrick Elliott





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Technical Program

					OPERATORS TRACK
	LEADERSHIP / ETHICS			UTILITY MGMT/OPS TRACK	DAY-TO-DAY OPERATIONS
	Session A:	Session B:	Session C:	Session D:	Session E:
	Room MN	Room E	Room F	Room G	Room KL
	Leadership Moderator: Mark Eddington YP Moderator: Rachel Kranz	Energy, Controls, Aeration Moderator: Bulbul Ahmed YP Moderator: Allen Williams	Nutrient Management Approaches Moderator: Derek Wold YP Moderator: Brooke Mayer	Ops Energy Recovery Moderator: Tracy Hodel YP Moderator: Scott Schaefer	10AM - 2PM Moderator: Troy Larson YP Moderator: Matt Streicher
10:15-10:45	Sustainable Leadership and Decision Making Michael Mucha Madison Metropolitan Sewerage District	Innovations in Aeration Leon Downing CH2M	Design and Implementation of an Agricultural Based Adaptive Management Pilot Study in the Silver Creek Watershed Brent Brown, Jeff Smudde CH2M, NEW Water	The Path to Energy Neutrality - A Midpoint Perspective Patrick Shea, Tracy Hodel City of St. Cloud	
10:45-11:15	Brag, Worry, Wonder, Bet Giving Feedback Effectively Steve King University of Wisconsin, Madison, WI, School of Business	Innovative Membrane Aerated Biofilm Reactor Technology for Low-Energy Nutrient Removal – Pilot Demonstration Jeff Peeters, Nick Adams, Zebo Long, Martha Dagnew, John Ireland, Pierre Cote GE Water & Process Technologies, COTE Membrane Separation	Enhanced Stormwater Treatment – Coagulant Treatment for Phosphorus Removal Michael Wegner, Lauren Striegl Brown and Caldwell, City of Madison	Kenosha Energy Optimized Resource Recovery Project Curtis Czarnecki Kenosha Water Utility	Discussion focus areas: 10:00 Activated Sludge/BNR and online analyzers
11:15-11:45	R2E2 Project: Transforming a Utility Tom Sigmund NEW Water	Process Performance Optimization through Advanced Automatic Control and Online Monitoring Bulbul Ahmed Xylem Inc.	Addressing Nonpoint Nutrient Loadings through Nutrient Concentration Systems - The Next Generation of Manure Management in Dane County Randall Wirtz, Rachel Lee, Kevin Connors, Tom Hrinowich Strand Associates, Inc., Ostara Nutrient Recovery Technologies, Dane County	Glenbard CHP Project: Design Build For Energy Recovery Eider Alvarez, Christopher Buckley, Erik Lanphier Baxter and Woodman, Glenbard Wastewater Authority	11:15 Biosolids
	Session F:	Session G:	Session H:	Session I:	
	Room MN	Room E	Room F	Room G	12:30
	Ethics Moderator: Bulbul Ahmed YP Moderator: Mike Holland	Collection System Moderator: Derek Wold YP Moderator: Danielle Bertini	Phosphorus Moderator: Andy Bradshaw YP Moderator: Yiran Tong	Ops Management / CSWEA Moderator: Mark Eddington YP Moderator: Aaron Berry	Equipment Maintenance
1:30 - 2:00	Code of Ethics for Local Government Officials, Employees and Candidates: Wisconsin Statutes Section 19.59 Steve Zach Boardman Clark	A 5-year Progress Report of the Milwaukee Metropolitan Sewerage District's Private Property Infiltration/Inflow Reduction Program Julie McMullin, Andy Lukas, Jerome Flogel, Rebecca Specht Brown and Caldwell, Milwaukee Metropolitan Sewerage District	Evaluating the Options for Phosphorus Compliance Part III: the City of Fond du Lac Water Pollution Control Plant's Experience Jane Carlson, Nick Bartolerio, Jeremy Cramer, Autumn Fisher Strand Associates, Inc., City of Fond du Lac	ISI Envision Process Fosters Project Collaboration-MMSD PS 15 James Kleinschmidt, Amanda Heller, Erik Rehr, Karen Kabbes Baxter and Woodman, Madison Metropolitan Sewerage District, Kabbes Engineering	
2:00 - 2:30	State Criminal Statutes: Wisconsin Statutes Sections 946.10 to 946.18 Steve Zach Boardman Clark	Evaluating I/I Rehabiliation Methods Derek Wold, Shane Firsching, Bob Swirsky Baxter and Woodman, Downers Grove Sanitary District	Full Scale Determination of Achievable Effluent Phosphorus Concentration without Tertiary Treatment at the Appleton, WI, WWTP Jim Fisher, Chris Stempa, Chris Shaw CH2M, City of Appleton	Abandoning Energy Recovery - The Road to the RIN Market Noah Johnson SEH Inc.	
2:30-3:00	Code of Professional Conduct – Wisconsin Administrative Code A-E 8 Steve Zach Boardman Clark	Computer Aided Design Tools Reduce Project Costs and Improve Pumping Station Design: Madison, WI Pumping Station 15 Amanda Heller, James, Kleinschmidt, Erik Rehr, Marcela Politano Baxter and Woodman, Madison Metropolitan Sewerage District, IIHR-Hydroscience & Engineering	SNRP 101: Fond du Lac WWTP Lab Experiences Autumn Fisher, Jeremy Cramer, Eric Lynne City of Fond du Lac, Donohue & Associates	"Repurposing" Existing Facilities: Pros/Cons, Risks/Rewards and a Case Study to Help You Decide John Fraser, Matt Larson Carollo Engineers, Inc.	
3:00-3:30	Break/Poster Session I				
3:30-4:00	Issues When Consultants and Engineers Play Attorney Paul Kent Stafford Rosenbaum LLP	L32 Forcemain River Crossing Julie Benadum Brown and Caldwell	It is just like a town full of people: Removal of phosphorus from dairy manure Josh Gable , Hiroko Yoshida Centrisys	Using Wastewater Expertise for Humanitarian Efforts to Bring Centralized Treatment to Developing Regions of Costa Rica – An Update on the Global Water Stewardship Matt Streicher, Alex Knicker, Amanda Heller, Mohammed Haque CSWEA Global Water Stewardship	
4:00-4:30		Using Recent Technologies to Control Odors and Corrosion Cost Effectively Bill Desing CH2M	Low Level Phosphorus Technology: Two Birds, One Stone John Siczka CH2M	Student Design Competition Presentation TBD	

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IHUKS	DAY MAY 19, 2016			
	STORMWATER AND WATERSHED TRACK			UTILITY MGMT/OPS TRACK
	Session J:	Session K:	Session L:	Session M:
	Room MN	Room E	Room F	Room G
	Stormwater Moderator: Derek Wold YP Moderator: Amanda Heller	Nutrients, N Moderator: Andy Bradshaw YP Moderator: Lindsey Busch	Digestion, Biosolids, Energy Moderator: Tracy Hodel YP Moderator: Josh Gable	Ops Nutrients Moderator: Bulbul Ahmed YP Moderator: Eider Alvarez
9:00-9:30	Advanced High-Rate Wet Weather Treatment Process Paige Peters, Brooke Mayer, Patrick McNamara, Daniel Zitomer Marquette University	Deammonification for Cost-Effective Nitrogen Removal Nick Bartolerio Strand Associates, Inc.	oval Synergistic Catalytic Pyrolysis of Wastewater rio Biosolids and Bio-wastes	
9:30-10:00	Designing a Community for Zero Stormwater Discharge Brett Emmons, Camilla Correll, Carl Almer, Steve Dodge Emmons & Olivier Resources, City of Inver Grove Heights	What You Need to Know About Nitrification & Denitrification That Grab Samples Won't Tell You Robert Smith, Jon Van Dommelen Xylem, Inc., Ohio EPA	Innovative Anaerobic Wastewater Systems for Improved Bioenergy Production Lance Schideman, Ana Martin University of IL, Illinois Sustainable Technology Center	A Phosphorus Deficit? – Impacts of Substrate Composition and Nutrient Supply on a Municipal/Industrial Activated Sludge System Troy Larson , Randy Wirtz Strand Associates, Inc.,
10:00-10:30	Break/Poster Session II			
10:30-11:00	Stormwater BMPs as Part of a Public Strategy to Reduce Private Property Sanitary Sewer Inflow and Infiltration Mark Phipps , Derek Wold Baxter and Woodman	Mainstream Deammonification using the ANITA™ Mox Process Chris Thomson, Hong Zhao, Andy Szekeress Kruger Inc.	Biomethane Production from Anaerobically Digested Bioplastics Nicholas Benn, Daniel Zitomer, Anne Schauer-Gimenez, Molly Morse Marquette University, Mango Materials, Inc.	Optimization of Enhanced Biological Phosphorus Removal Process to Achieve Low Phosphorus Limits: Overview and Case Studies Sara Arabi, Mehran Andalib Environmental Operating Solutions, Inc.
11:00-11:30	Stormwater Storage Facility and Rainwater Harvesting System Paul Siegfried, Mark Phipps Baxter and Woodman	Efficient Nutrient Removal under Low Dissolved Oxygen Concentrations Don Esping Brown and Caldwell	An Innovative Low Temperature Thermal Alkaline Hydrolysis Process with Multiple Benefits and Resource Recovery Options Ajay Singh , Bill Mullin, Mike Dougherty, Tim Shea, Lystek International Inc.	Convert Activated Sludge to BPR Greg Paul, Ben Brooks Op2Myz, LLC., City of Medford
	Session N:	Session 0:	Session P:	Session Q:
	Room MN	Room E	Room F	Room G
	Stormwater Moderator: Mark Eddington YP Moderator: Jillian Kiss	Biogas, Energy Recovery & Efficiency Moderator: Tracy Hodel YP Moderator: Alyssa Sohn	UV / Foaming / Assessment and Replacement Moderator: Andy Bradshaw YP Moderator: Mark Van Weelden	Ops Biosolids / Ops Management Moderator: Autumn Fisher YP Moderator: Adam Shelton
1:45-2:15	Identifying Stormwater Quality Improvement Opportunities Using Green Infrastructure Implemented with Planned Capital Projects Mark Mittag CH2M	Converting Biogas to Energy and Vehicle Fuel Kim Murdock-Timmerman, Jan Scott Unison Solutions, Inc.	Testing for the World's Largest Wastewater UV Installation Catharine Richardson, Beata Busza Greeley and Hansen, MWRDGC Lake County Tackles Biosolids James Smith Applied Technologies, Inc.	
2:15-2:45	Biological Monitoring near Fox Metro Water Reclamation District Waste Water Treatment Plant Karen Clementi, Leonard Dane Deuchler Environmental, Inc.	Air - Oh Yeah, That Other Permit We Might Need Megan Corrado, Renee Lesjak Bashel SCS Engineers, Wisconsin Department of Natural Resources	Fitting a Square Peg into a Round Hole: Effective and Efficient UV Retrofits Lindsey Busch, Bill Sotirakos Carollo Engineers, Inc.	Cedar Rapids Water Pollution Control Facility - Successful Recovery of a Solids Management System from a Catastrophic Flood Lloyd Winchell, David Sapp, Roy Hesemann, John Ernst Brown and Caldwell, City of Cedar Rapids
2:45-3:00	Break			
3:00-3:30	Glenview Harms Road Regional Stormwater Project Christopher Buckley, Joe Johnson Baxter and Woodman, MWH Global	Effective Mixing Provides Reliable Operation & Low Maintenance — Benefits of Low Pressure Pulsed Air Mixing Ken Neu, Nina Fricano, Sidharta Arora Environmental / Health Products & Service, Milwaukee Metropolitan Sewerage District	Aquafix Inc. Discharge" Case Study Illustrating Benefits of EPA's Prioritized and In Strategy for Clean Water Act Comp	
3:30-4:00	Searching for the Goldilocks Water Quality Model Brett Emmons, Camilla Correll, Michael	Eliminate Flaring to Generate Green Energy at Wastewater Treatment Plants Rob Emrich	Electrical Condition Assessment and Replacement Planning for Wastewater Organizations	Proactive Approach Reduces Chloride Discharges-Paddock Lake Tim Popanda, James Kleinschmidt,



8:00 - 5:00

Registration – Thursday, May 19

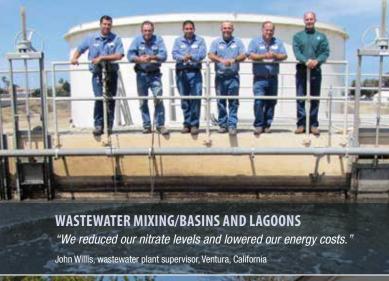
Conference at a Glance

COIIIC	lence at a Gian	
TUESDAY, MAY	17	
8:00 - 11:00	Executive Committee Meeting	Hilton Hotel, 2 nd Floor, Doty Room
8:30 -11:45	Leadership Academy	Monona Terrace
12:30 – 5:00	Golf Outing	Yahara Hills Golf Course, Madison, WI
1:00 – 3:00	Plant Tour	Nine Springs Treatment Facility, Madison, WI
6:00 – 8:00	Meet & Greet	Rooftop Terrace, Monona Terrace
WEDNESDAY, M	IAY 18	
6:30 – 8:15	5k Run/Walk	Lake Monona Bike Path
9:00 – 9:10	General Opening Session	Lecture Hall, Level Four
9:10 – 10:00	Keynote Address	Lecture Hall, Level Four
10:15 – 11:45	Technical Sessions	Hall of Ideas, Rooms E, F, G, KL, MN
10:00 – 6:00	Exhibits Open	Exhibit Hall Madison Ballroom
12:00 – 1:00	Exhibitor Box Lunch	Exhibit Hall Madison Ballroom
1:30 – 3:00	Technical Sessions	Hall of Ideas, Rooms E, F, G, KL, MN
3:00 – 3:30	Poster Session, Afternoon Break	Capital Promenade and Exhibit Hall
3:30 – 4:30	Technical Sessions	Hall of Ideas, Rooms E, F, G, KL, MN
3:30 – 4:30	Student Design/Global Water Stewardship	Meeting Room G
4:30 – 6:00	Exhibitor Reception	Exhibit Hall Madison Ballroom
5:00 – 5:30	7S Meeting	Hall of Ideas, Room E
5:00 – 5:30	YP Meeting	Hall of Ideas, Room G
5:30 – 6:00	Golden Manhole Society	Hall of Ideas, Room F
7:30 – 11:00	Social Gathering	The Ivory Room Piano Bar, 116 W. Mifflin Street, Madison, WI
THURSDAY, MA	Y 19	
7:30 – 9:00	State Section Breakfasts	Meeting rooms K, L and Grand Terrace
9:00 – 3:00	Exhibits Open	Exhibit Hall Madison Ballroom
9:00 – 11:30	Technical Sessions	Hall of Ideas, Rooms E, F, G, MN
10:00 – 10:30	Poster Session, Morning Break	Exhibit Hall Madison Ballroom
12:00	Silent Auction Bids Due	Exhibit Hall Madison Ballroom
12:00 – 1:00	Exhibitor Box Lunch	Exhibit Hall Madison Ballroom
12:00 -1:30	Association Luncheon	Grand Terrace
1:45 – 2:45	Technical Sessions	Hall of Ideas, Rooms E, F, G, MN
2:45 – 3:00	Afternoon Break	Exhibit Hall Madison Ballroom
2:45	Silent Auction Bids Posted	Exhibit Hall
3:00 – 4:00	Technical Sessions	Hall of Ideas, Rooms E, F, G, MN
4:15 – 5:00	Annual Business Meeting	Room MN
6:00 – 6:30	Social Reception	Grand Terrace
6:30 – 8:00	Banquet and Awards	Grand Terrace
8:00 – 10:00	Social with Live Music	Grand Terrace
FRIDAY, MAY 20		
8:00 – 12:00	Executive Committee Meeting	Hilton Hotel, 2 nd Floor, Doty Room
3:00 – 6:00	Registration – Tuesday, May 17	Capital Promenade Hallway
8:00 – 5:00	Registration – Wednesday, May 18	Capital Promenade Hallway
0.00 - 5.00	registration – weathesday, May 10	Cupilar Forneriale Flailway

Capital Promenade Hallway











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Based on the success in 2015, CSWEA will continue to offer flat rate utility pricing for the Annual Meeting. The pricing allows utilities to pay a flat fee for registration with the cost determined by their treatment plant design size. For that price, a utility may send as many people as they want to the annual meeting. The utility would still have to purchase event and meal tickets separately for each individual. The only included meals would be the continental breakfasts, coffee/snacks, and box lunches.

Five tiers have been set up for the Utility registrations.

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MICRO UTILITY (<1 MGD or Collection Only) @ \$150

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COST COMPARISON (OLD vs. NEW) - using simple pricing

An Example of the cost savings is below.

Old Pricing Structure

Sample pricing for a 7 MGD Treatment Plant old Prices with six attendees:

Attendee	Reg Type	Reg Cost	Events	Meals	Subtotal
District Manager	Full	\$325	\$110	\$120	\$555
Asst Manager	Full	\$325	\$95	\$105	\$525
Chief Operator	Full	\$325		\$45	\$370
Maint Manager	Wed Only	\$190		\$45	\$235
Operator 1	Thu Only	\$175			\$175
Operator 2	Wed Only	\$190			\$190
TOTAL		\$1,530	\$205	\$315	\$2,050

NEW UTILITY PRICING With 2 more Operators and 1 Trustee Attending

Attendee	Registration Type	Registration Cost	Event	Meals	Subtotal
Utility Regn	5-10 MGD	\$500			\$500
District Manager	Full		\$110	\$120	\$230
Asst Manager	Full		\$95	\$105	\$200
Chief Operator	Full			\$45	\$45
Maint Manager	Thu Only			\$45	\$45
Operator 1	Thu Only				
Operator 2	Wed Only				
Operator 3	Thu Only				
Operator 4	Wed Only				
Trustee	Thu Only			\$120	\$120
TOTAL	-	\$500	\$205	\$435	\$1,140

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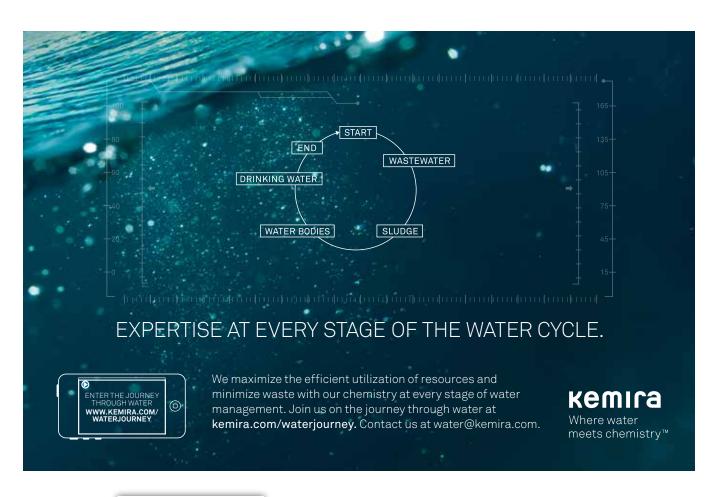
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Stewardship and Socializing

Silent Auction

Monona Terrace – Exhibit Hall Area, Noon deadline for bids Auction items donated by exhibitors to benefit the CSWEA Global Water Stewardship (GWS) will be displayed in the Exhibit Hall Registration area. Support this amazing initiative by donating or bidding on items. For more information, contact Tom Mulcahy at tmulcahy@mulcahyshaw.com.

Bids are due by noon on Thursday; winners will be posted in the Exhibit Hall at 2:45 p.m., during the break.

About the GWS

"Global Water Stewardship resolves sanitation issues in the developing world by educating people and engineering sustainable centralized solutions that keep waterways clean and communities healthy." Donate at: http://www.cswea.org/globalwater.



Wednesday Night Social

The Ivory Room Piano Bar, 7:30 – 11 p.m. 16 W. Mifflin Street, Madison, WI

The Wednesday night social will be held nearby at The Ivory Room Piano Bar. Stop by and enjoy delicious appetizers and cocktails while you socialize with friends and fellow meeting attendees. To add to the fun, enjoy live piano music and entertainment. Drink tickets will be



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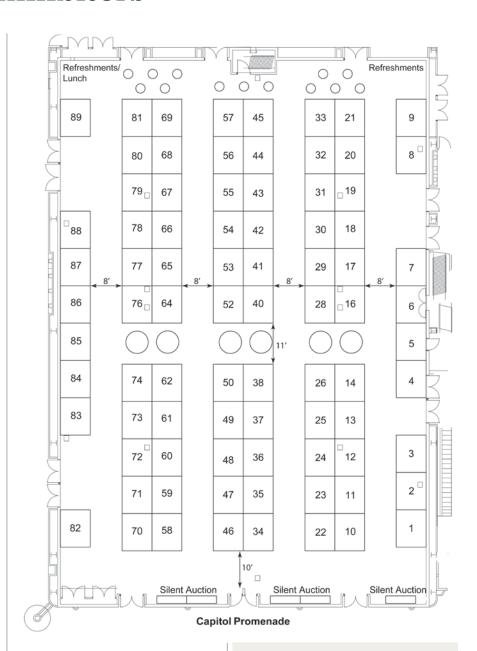
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he City of Superior, WI, is located on the southwest shore of Lake Superior, at the northwest tip of Wisconsin. The City's Environmental Services Division (ESD) is tasked with managing and operating the wastewater collection and treatment systems that serve the city and a satellite system. These facilities include a 150-mile collection system, 16 lift stations, and four wastewater treatment facilities – three combined sewer treatment plants (CSTPs) and the Main wastewater treatment plant (Main WWTP). The ESD operates these facilities with the goal that the CSTPs primarily serve as wet weather storage for flows to later be sent to the Main WWTP for full treatment.

The Main WWTP was rated for an average day flow of 7.6 million gallons per day (MGD), with liquid treatment consisting of fine screening, grit removal, raw

wastewater pumping, primary clarification, conventional (non-nitrifying) activated sludge and disinfection. Total flows average around 4.7 MGD with peak flows during wet weather events (storms, snowmelts) capable of exceeding 200 MGD.

The Main WWTP influent flow averages approximately four MGD, but has been challenged to sustain effective capacity for extended periods of peak flow, primarily due to process variability in the activated sludge system. Through the years plant staff have learned to work with this variable capacity by relying on one of the CSTPs for treatment of flows in excess of the effective capacity of the Main WWTP's activated sludge process at the time of, and following, each high flow event.

In 2010 the City hired Donohue & Associates to perform a hydraulic and treatment capacity evaluation of the Main WWTP, using calibrated hydraulic and process (Biowin) modeling as

well as review of operational records. The evaluation confirmed the plant's activated sludge system was the main factor limiting treatment capacity, and identified a number of improvements that could be used to maximize its capacity. The improvements ranged from relatively low cost items to optimize the existing infrastructure, to a full process expansion with a price tag of more than \$40 million.

KEY CAPACITY BOTTLENECKS

The capacity optimization evaluations identified the following as key bottlenecks that were contributing to activated sludge capacity constraints:

 Unequal flow split of aeration tank effluent/mixed liquor (ML) to the plant's four rectangular final clarifiers. The ML would make a 180-degree turn into a final clarifier inlet channel and then split off into the four clarifiers through gate valves along

FIGURE 1: RAS Pumping Improvements

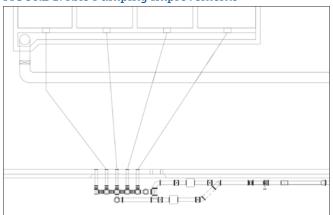
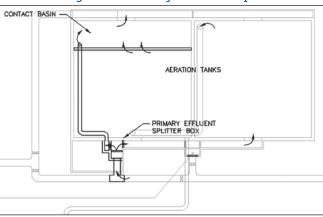


FIGURE 2: High Flow Primary Effluent Step Feed



the length of this channel. Plant staff would attempt to balance the flow to the clarifiers by throttling/adjusting the gates but the hydraulics and flow splits constantly change as plant flows change — so this method of clarifier flow control was challenging.

- Inability to control return activated sludge (RAS) removal from the four final clarifiers - the plant had only two RAS pumps, pulling RAS from four final clarifiers at the same time, and a single RAS flowmeter. As a result, plant staff didn't have the ability to effectively control or measure RAS withdrawal from any of the clarifiers. Plant staff tried to rebalance solids withdrawal from each clarifier by throttling plug valves from each clarifier RAS line on the suction side of the pumps - but this was largely ineffective since efforts to balance the solids withdrawal would inevitably be followed by another unbalanced condition.
- Highly variable ML settleability and its effect on the solids loading capacity of the final clarifiers – sludge volume indexes (SVIs) could range from below

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100 ml/g to above 300 ml/g due to presence or absence of frequent filamentous organisms and/or slime bulking. This variability greatly affected the plant flows that the final clarifiers could treat.

OPTIMIZATION AND IMPLEMENTATION

A number of low cost improvements were identified for implementation, to try and address these capacity bottlenecks, including:

• RAS Pumping Improvements — installing automated actuators on the suction valve from each final clarifier to its paired RAS pump and modifying the RAS pump discharge lines to install a second RAS flowmeter — so the discharge of each RAS pump could be measured. These improvements are illustrated in Figure 1.

With these improvements plant staff can now better control RAS removal from individual clarifiers through timer controls on the suction withdrawal valves – alternating between final clarifiers; and with an RAS flow meter dedicated to each RAS pump staff are also better able to quantify RAS withdrawal from all the finals.

• SRT Control and Microscopic Analysis

– RAS pumping improvements allowed the mode of operation of the activated sludge system to transition from poundsunder-aeration to constant SRT. Donohue provided Excel-based spreadsheets to track the activated sludge process based on a target solids retention time (SRT)/ sludge age. The change to SRT control stabilized the activated sludge biomass and performance. Microscopic analysis was implemented to monitor mixed liquor characteristics.

• RAS Chlorination Improvements

 RAS chlorination facilities were assembled by City staff and a dosing calculator was provided to the City.
 Preventive dosing of chlorine is provided continuously to inhibit excessive filament growth. A higher dose of chlorine may be fed to combat SVI degradation when microscopic analysis reveals an increased presence of filamentous organisms.



FIGURE 3: Final Clarifier Splitter Box



FIGURE 4: Final Clarifiers after Flow Splitter Addition





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The combination of SRT control and RAS chlorination to prevent filament outbreaks resulted in significant improvements in sludge settleability and effective capacity.

High-Flow Step Feed – a new high-flow step feed splitter box was installed on the primary effluent line to the aeration basins. Under normal conditions all PE flow travels to Aeration Basin 1, with Aeration Basin 1 feeding Aeration Basin 2, which in turn feeds the final clarifiers. The new step feed provision includes an adjustable gate which directs some PE to a new contact zone at the effluent end of Aeration Basin 2, just upstream of the final clarifiers, as shown in Figure 2.

Plant staff can now set a flow rate above which primary effluent is split off in step feed mode to the Aeration Basin 2 contact zone. This allows the plant to carry higher MLSS concentrations in Aeration Basin 1 and the first portion of Aeration Basin 2, as needed for SRT solids inventory control, but to dilute the MLSS concentration upstream of the final clarifiers to minimize the solids loadings on the finals.

- Final Clarifier Flow Splitter replacing the aeration effluent/ML feed channel to the final clarifiers with a new flow splitter box using equal sized/ elevation weirs to ensure equal flow distribution to each final clarifier under all flow conditions. The splitter box, shown in Figure 3, was designed with two extra weirs for future clarifiers.
- Flocculating Inlet Modification -Upon startup of the new facilities, plant staff noticed a significant difference in the inlet appearance of Clarifier 4, as compared to the other three, typical of Figure 4, which shows much less inlet turbulence and mixed liquor at the surface of Clarifier 4 (farthest to the right in the figure), in terms of how far it extended into the clarifier. This gave rise to suspicion among plant staff that hydraulic differences in delivery of flow to the clarifiers (Clarifiers 1-3 were hard piped while Clarifier 4 was piped to discharge into the now empty existing ML channel – see Figure 5) was contributing to differences in settling performance between the clarifiers.

Plant staff performed threedimensional modeling (see Figure 6) of the inlet arrangements for the three "hard-piped" inlets and the small section of inlet channel at Clarifier 4. Observation and simulation show significantly dissipated hydraulic energy and helped to re-flocculate the inlet solids – resulting in reduced inlet turbulence and more rapid solids settling at Clarifier 4's entrance, as compared to the other three.

The existing inlet channels into tanks 1-3 were modified to create a flocculation and energy dissipation chamber before discharging into the tank. The results speak for themselves – the energy dissipation and enhanced flocculation of the flocculating inlet modifications (FIMs) have improved an already good situation even more – as evidenced by Figure 7, which shows the results with three of the four clarifier inlets configured this way (the three on the right side of the picture). The visual evidence when comparing Figures 5 and 7 is clear.

This improvement shows the benefit of recognizing, evaluating, and implementing opportunities for ongoing plant optimization.

RESULTS

Construction and implementation of the optimization projects nearly doubled the sustainable effective capacity at the Main WWTP. Several collection system improvements implemented by ESD have taken advantage of this increased capacity. The net results of these low cost improvements include:

- A significant reduction of water-inbasement incidents attributable to wet weather surcharge of sanitary or combined sewers.
- Tremendous reduction in sanitary sewer overflows (SSOs). The City historically averaged 10 wet weather SSOs in recent years, and experienced a 50% reduction in SSOs in 2014 and a 100% reduction (no SSOs at all) in 2015.
- Attaining ESD's goal of maximizing treatment at the Main WWTP and minimizing CSTP discharge volumes (when the storage at the CSTPs is full and CSTP treatment/discharge must be implemented).
- Zero combined sewer overflows (CSOs) since 2012.

BOTTOMLINE - COST SAVINGS

Initial estimates to expand the plant's capacity to achieve full nitrification with state-of-the-art new clarifiers were over

FIGURE 5: Final Clarifier Inlets - Original Configuration after Splitter Box

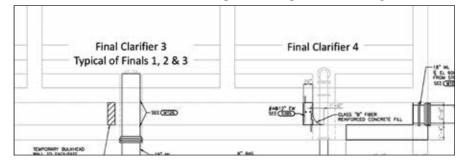


FIGURE 6: 3-D Modeling of Final Clarifier FIMs

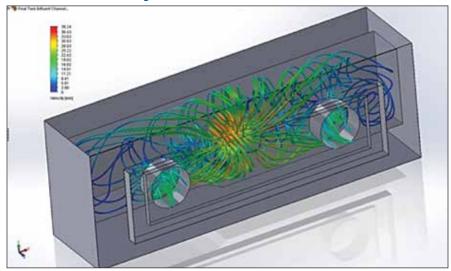


FIGURE 7: Final Clarifiers with 3 of 4 FIMs Complete



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\$40 million, with new clarifiers alone representing \$10 million of that. The improvements discussed above have cost the City approximately \$1 million, broken out as:

- RAS Pumping Improvements -\$234,000
- SRT Control and Microscopic Analysis - No Cost
- RAS Chlorination Improvements -\$5,000 (performed by ESD staff)
- Final Clarifier & High Flow Step Feed Splitter Box Improvements - \$760,000
- Final Clarifier Flocculating Inlet Modifications (FIMs) - \$15,000 (performed by ESD staff)

The resulting savings have allowed ESD the ability to direct more resources to the root of its wet weather challenges, collection system improvements, while maximizing the return on the dollars it has spent on full treatment capacity.

FUTURE OPPORTUNITIES

With the improvements in service, the City has been able to take advantage of the increased effective capacity. In April 2014, the Main WWTP was able to effectively treat the highest volume of water on record, which was 15% higher than the previous record. In November and December of 2015, the City was able to break the record for the most amount of water treated through the Main WWTP in those months. As the City gains more experience with optimizing the new infrastructure, the intention is to continue to challenge the system and identify additional improvements, and to continue efforts to reduce the risks of sanitary sewer overflows and water-in-basement incidents.

On occasion the Main WWTP is challenged by low food to microorganism (F:M) ratios in the complete mix aeration basins, which can contribute to ML settleability challenges. As such future short term improvements will focus on modifications to biologically control settleability through such things as converting Aeration Basin 1 from a complete mix to a plug flow configuration, possibly later followed by addition of selector zones upstream of the aeration basins. Through such continued low cost modifications, the Superior ESD will continue its proud, proven and cost/ value effective stewardship of the City's water environment. CS



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Deep Sewer Tunnels Eliminate Pump Stations in Victoria, MN

Storage also allows deferring capital upgrade of a third pump station for MCES

JULIE BENADUM, P.E. AND CHUCK LEWIS, P.E. - BROWN AND CALDWELL, ST. PAUL, MN

he Metropolitan Council
Environmental Services'
(MCES) Victoria Interceptor
Tunnels Project was designed
by Brown and Caldwell (BC) to
increase dry weather flow capacity and to
temporarily store peak wet weather flows
in oversized pipes. This strategy alleviates
pressure on downstream pumping stations
and interceptors, allowing major capital
projects to be deferred. In addition, two
aging pump stations were eliminated by this
network of deep tunnels, saving operating
and maintenance costs for MCES.

About Metropolitan Council Environmental Services

MCES serves approximately 2.7 million people in 108 communities, which represents about 95% of the seven-county Twin Cities Metropolitan Area. The collection system consists of over 600 miles of regional interceptors and more than 60 lift stations. The facilities were built over a span of more than 100 years, from the oldest sewers in Minneapolis and Saint Paul, to interceptors and lift stations currently under construction.

Project Drivers

The Baycliff (L-23) and Schutz Lake (L-22) pump stations in Victoria, MN, had been in operation since the early 1970s and were approaching the end of their useful life. They were also inadequate for future projected growth and were both located along environmentally sensitive lakefront property. Pump Station L-22 was located on the shores of Schutz Lake, near residential homes, and had experienced multiple mechanical failures. The rapidly growing area had already pushed the station's flows beyond its firm capacity.

Above: Two tunnel branches meet at a city park. The downstream branch was constructed a year ahead of the two 3,500 foot long tunnels

Station L-23 had also experienced three equipment failures in five years, some requiring emergency repair. This station was also nearing its capacity in the short term. Other factors that drove the need for this project included:

- Addressing odor complaints
- Reducing operation and maintenance costs
- Improving available response time in the event of an emergency situation

The Victoria interceptor sewer tunnels provide the ultimate capacity needed for the service area and eliminate the risk associated with these mechanical failures and spills by eliminating the two pumping stations entirely.

Project Features

Facility planning efforts recommended the construction of deep tunnels by weighing feasibility, constructability, operation and maintenance expectations, life-cycle cost, environmental impact, constructability. Two six-foot-diameter pipelines installed by tunneling were constructed; one from each pump station location and each approximately 3,500 linear feet long. They come together in a junction structure that marks the beginning of a third, shorter tunnel of the same diameter.

A further requirement of the tunnel system is to prevent surcharge of the downstream interceptor and Lake Virginia Pumping Station (L-21) by utilizing the combined storage capacity of the tunnels. L-21 had already seen peak flow rates above its firm capacity. Accordingly, BC developed a hydraulic model of the system to determine the final size of the tunnels which would provide adequate facilities for ultimate build-out of the service area and allow storage of up to one million gallons. This would provide more than one hour of emergency response time for MCES personnel, should the need arise.

Upstream forcemains, flat pipe and stored sewage in tunnels such as these all contribute to the generation of offensive and corrosive hydrogen sulfide gas, which accelerates corrosion. To combat this, corrosion-resistant reinforced polymer mortar pipe was selected for the carrier pipes. In addition, a treatment system would be necessary to remove and treat the foul odors.

Recent history of tunneling projects for MCES included painful experiences

of emergency retrieval shafts after encountering large boulders, damage to tunneled pipe, dewatering difficulties – all adding up to hefty change orders and delays. Soils laid down by retreating glaciers thousands of years ago can be unpredictable, containing boulders and nested cobbles (12 inches or smaller) randomly, that make tunneling difficult. To reduce risk during tunneling operations, the design team determined that a two-pass tunnel would be best.

In this approach, the tunnel boring machine (TBM) is advanced to excavate the first pass and an initial support system of liner plates or ring beams and lagging is installed. Once the full length of the tunnel is excavated, the carrier pipe is slipped inside the initial support and grouted in place. Larger obstacles can be removed from the face of the TBM with the two-pass system. Therefore, the potential need for an expensive rescue shaft to remove a boulder is reduced.



Initial support system being lowered into the 102' deep shaft for structure 83









72" Diameter Hobas was used for the final carrier pipe

Brown and Caldwell also designed a "Control Structure" with a manually operated slide gate and interchangeable orifice plates to regulate the flow to downstream facilities. This structure was designed to avoid surcharge to upstream facilities as well, as upstream lakeshore residents could quickly get flooded since they are directly connected to the upstream interceptor. This was accomplished by:

- Matching the upstream crown of the tunnels to the existing incoming interceptors
- Constructing a dividing wall within the structure which would effectively perform as a weir, allowing the flow to overtop the wall when available storage is reached

A hexagon-shaped junction structure, located in the South Lake Virginia Shores

Park, combines the flows from the two upstream legs of the tunnels and merges into a third leg. The most efficient location for the odor control system is at that junction. The dual-bed carbon scrubber facility is designed for easy access for operation and maintenance without impacting nearby residents and park activities. The building blends architecturally with the park site and adjacent residential structures with high quality finishes and completely encloses the carbon tank. Parking facilities are shared by both MCES maintenance and park users. Public restrooms were also incorporated into the building to serve park users.

The Victoria tunnel system was designed to be under constant negative pressure to contain odors for treatment. In addition, the carbon system was

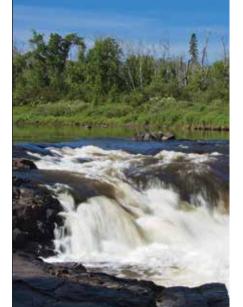
constructed with a hydrogen sulfide sensor in the outlet to continuously monitor for carbon breakthrough. The fan and grease/mist eliminator were installed in an acoustically-treated room for noise containment. The entire system is designed to be energy efficient in support of MCES's energy reduction initiatives.

The bidding documents included a Geotechnical Baseline Report (GBR) that specified the expected quantity of boulders for the purpose of bidding. A unique aspect of the Bid Form utilized information from the GBR to generate quantities of three different sized boulders as bid items. The contractors were to provide unit prices for each and would be compensated for boulders encountered. With this innovative approach to bidding, MCES would fairly compensate the contractor, while the contractor could assess and price risk, which eventually minimized the need for change orders.

The bid form also addressed the possible need for a rescue shaft and provided up to 300 total vertical feet of vertical shaft construction as an allowance. This provided the flexibility needed during construction if certain well-defined criteria were met. In the end, the decision to use the two-pass tunneling approach may have saved both construction time and the high cost of recovery shafts and the project was constructed for \$2 million less than the original bid price and within schedule.

Project Team

Brown and Caldwell teamed with local tunneling design firm CNA Consulting Engineers to design the 7,500 feet of tunnels. BCG Consulting, ProSource and HTPO, all local firms, respectively provided structural, land acquisition and surveying assistance.



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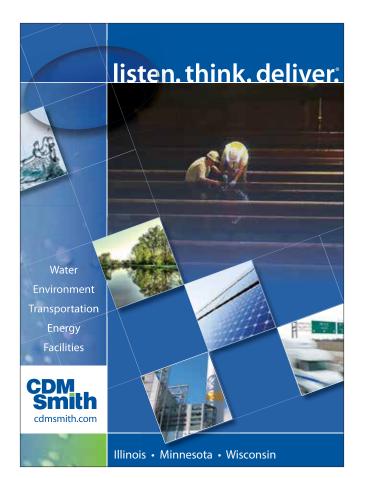
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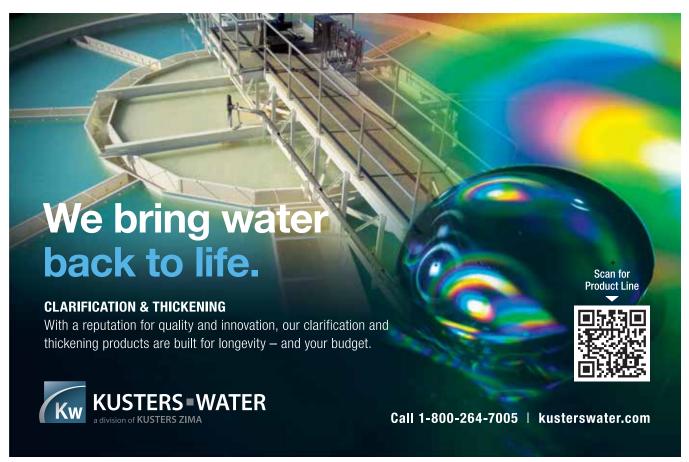
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ELIZABETH THELEN

Director of Entrepreneurship & Talent and "BREW Master", The Water Council, with input from Dennis Webb, President, Sage Water



At the End of the Day

I often catch myself using the phrase "At the end of the day..." with start-ups. I too have started a business, grown a business, and purchased a business, all with varying successes and always difficult to admit, a few failures. So, I somewhat get it, as my businesses were not technology based.

When I say start-ups, in this context, I am referring to water technology innovators who, "at the end of the day," want to launch a technology business. There are many start-ups in our BREW (Business. Research. Entrepreneurship. In Wisconsin.) accelerator family and portfolio.

At the end of the day, an idea can only innovate when it makes it to market. There are many people and parts needed to turn an idea into an innovation. Starting with a great idea or revolutionary technology, which is an essential step to begin a great journey.



For starters, you will need a dedicated team to bring that idea to fruition. This team needs to consider all business areas required to be successful. These include, but are not limited to: bookkeeping/accounting, legal, product design, product sourcing, maintenance, talent management, marketing, branding, sales and customer support. Using lean start-up methodologies, it is also helpful to know your Investment Readiness Level (IRL) and your Technology Readiness Level (TRL).

To better understand this process, I will use American Micro Detection Systems (AMDS) as a case study. AMDS is launching a new product called the REX, which is beyond the idea phase. The REX is an instrument that complements, and in many situations replaces, existing methods of analyzing dissolved metals in water in the parts per million and parts per billion-range. Specifically, AMDS has developed the Real-Time Elemental XRF, REX; the instrument is based on the science of X-ray fluorescence. This system works without consumable standards that are required with current ICP instruments.

At the end of the day, the innovation needs to launch. One of the first things to understand is your customer segments and markets. The AMDS team has been talking with numerous potential customers throughout the world. They designed and built a functioning prototype, which can then be showcased, demonstrated and marketed to potential clients. The REX is currently at an eight or nine range TRL/IRL.

Although the REX was created in Livermore, CA, a great deal of excitement is being created at the Global Water Center (GWC) in Milwaukee, WI. AMDS is considered part of the BREW accelerator family. Dennis Webb, President, Sage Water, also located in the GWC, is working with AMDS founders Dr. Robert Keville and Dr. Daniel Dietrich, previously employed by Livermore Federal Laboratories in Livermore, CA, to consider new applications on a daily basis. While at Livermore, they were inspired by scientific discoveries being made at the Federal Laboratory. A continuously growing list of potential application sites, including Flint, MI, and Sebring, OH, have precipitated an acute need for the REX system. At the end of the day, a new technology needs to launch; it needs to be ready for substantial use and offer a complete end-to-end experience for the customer. A product or service needs to be designed, built, delivered, and deployed. The leader or team needs to have this goal in mind and not only work through the rigorous customer development process, but also through the demonstration and validation processes.

The opportunity for the REX system is now. It is ready for demonstration, qualification, international certification, and the end result of launching sales. The AMDS REX unit is also compliant to ISO 17025. In its current form, the REX unit can detect dissolved metals in drinking water. AMDS is specifying the REX to be used for analyzing mine water, fracking water and other industrial pretreated water in the US, Canada, Africa, Mexico, and Brazil. AMDS is in discussions with the Instituto Mexicano de Tecnologia del Agua (IMTA) to create a national standard, which will be highly recognized and adopted in Latin America. Potential growth areas for future development phases include water analysis in Aquaponics, instrumented buoys in use on the Great Lakes, and possibly assisting cities around the Great Lakes and the rest of the US.

As for innovations and start-ups, many make it this far and then crash. You must know your customer, be able to call on them and discover their needs, and close the deal! This deal may also be with investors, bankers, and other funders.

At the end of the day, a new technology needs to meet



customer needs, be economically manufactured, and, ultimately, be purchased. An order needs to take place. The start-up needs to understand the impact of the innovation within their market – what changes will happen, what the unintended consequences are, and how to make the buyer comfortable.

The start-up needs to know their market, make calls, write a quote or proposal, close the deal, and deliver.

The opportunity for AMDS is to make a sale with one of its potential buyers in order to move the REX forward in an organized manner and to address the needs of the customers worldwide in a cost effective manner. One of the challenges the REX system faces is it may first appear as a threat to people working in conventional laboratory environments. The instrument can work in-situ; lab samples only need to be taken and transported back to the laboratory when an issue is detected and further analysis is required. This is a challenge with many new innovations, they change the way of doing business, they disrupt the status quo and someone must pave the way to innovate. Someone on the start-up team needs to understand if the buyer is an opinion leader or a laggard. Or, is it a legacy market?

At the end of the day and throughout the process, the team needs to talk with potential customers, build their product/ service to meet their needs, and make a sale. The team must do the work, not simply think about it, talk about it, or analyze it. The idea can only start to innovate when it is used by the customer. The team "gets to," not "has to," talk with the customer. The team can reframe these conversations to learning, growing, problem solving, and creating opportunity.

Dennis Webb and the AMDS team will be talking with some of their potential customers in the first quarter of 2016. I am sure they will close the deal.

At the end of the day, BREWing and bringing new innovations to market is difficult, exhilarating, and creates opportunity in water.

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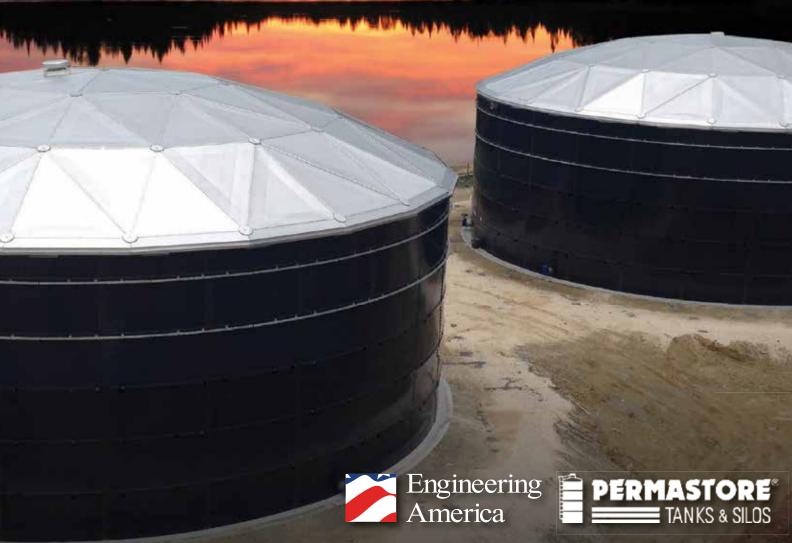
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From Rainfall to Results

Water Environment Federation report details new vision for meeting the challenges of stormwater management, resulting opportunities

By Heather Harris and Chris French





Stormwater is currently the only growing source of water pollution in many watersheds across the country, and it is a rising challenge for communities around the world. In 1970, 85% of U.S. water quality impairments were associated with point-source pollution. The remaining 15% came from nonpoint sources such as agriculture and urban stormwater. Today, after significant advancements in wastewater treatment, these values have flipped – 85% of impairments now stem from nonpoint and urban stormwater discharges. The U.S. Environmental Protection Agency's (EPA) first administrator, William Ruckelshaus, alluded to these facts in a 2010 Wall Street Journal opinion article in which he called stormwater runoff "the water quality issue of the day."

Rainfall to results: The future of stormwater, a comprehensive report by the Water Environment Federation (WEF; Alexandria, Va.) Stormwater Institute, presents a vision for the future in which all stormwater is transformed from a pollutant source to a resource.

The report is a product of a meeting of stormwater professionals convened by WEF in July at The Johnson Foundation at Wingspread (Racine, Wisc.). The report was released at WEFTEC 2015 in Chicago to coincide with the launch of the WEF Stormwater Institute, a new center of excellence and innovation created to address stormwater challenges.

Vision for the future of stormwater

In the vision presented in the report, stormwater is managed through an optimized mix of green, gray, and natural infrastructure, and pollutant source control is pursued as a complement to infrastructure solutions. Stormwater infrastructure is fully funded and managed by a dedicated utility with a comprehensive asset management program; and stormwater management is adaptive based on new science, experiences, technical innovations, and responsive regulations. Stormwater management is part of doing business and part of community resiliency and quality of life. As such, the community values and understands the many benefits of stormwater infrastructure.

The report identifies six key objectives and a set of concrete actions intended to achieve this vision and improve the future of stormwater in the United States.

1. Work at a watershed scale

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All communities will have integrated, watershed-scale assessments of their water resources needs and challenges

to better align stormwater management efforts with larger watershed priorities. This means long-range planning across jurisdictions within watersheds. Planning and decision-making will account for the many benefits of stormwater controls, which go beyond water quality improvements to increased property values, expanded public education, improved air quality, and more.

2. Transform stormwater governance

The second objective is to transform stormwater governance so that regulations are integrated and adaptive. Regulations will stimulate stormwater control innovation and improve performance by focusing on program outcomes. By exploring ways to emphasize stormwater program outcomes in permits and design and maintenance requirements, the sector can develop permitting frameworks that, for the first time, embrace the long-term nature and potential cost efficiencies of solving stormwater challenges.

3. Support innovation and best practices

Evaluating stormwater programs can provide a wealth of information. By sharing these experiences, the sector can ensure up-to-date best practices are available, advance the necessary tools and methods to support ongoing improvements in stormwater management, and increase the ability to analyze and value stormwater management on a multi-benefit basis.

4. Manage assets and resources

The next objective is to achieve stormwater systems that are maintained through robust asset management programs and supported by innovative information technology. Inadequate attention to operations and maintenance, and a lack of effective planning for repair and replacement are the biggest current weaknesses of stormwater management. Key to improving maintenance and developing a robust asset management program is developing a well-trained, multidisciplinary workforce. Also important is integrating O&M into project planning so that projects are properly designed and installed for easier operations, repair, and timely replacement.

5. Close the funding gap

Many of the opportunities to improve the stormwater sector invariably require financial resources. Communities can start by better understanding their funding needs and

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looking to reduce the costs of stormwater management. However, sustainable stormwater management requires a dedicated funding source. Education and understanding by elected officials are important, as they play a significant role in supporting the investments needed to meet stormwater objectives. Additionally, there are opportunities to access untapped sources of capital and innovative financing mechanisms.

6. Engage the community

The stormwater sector must improve its ability to engage various audiences and encourage information sharing between public officials. With increased communication and collaboration, communities can better value the role of stormwater management in providing clean and safe water, reducing flood risks, and making neighborhoods more resilient to the effects of climate change.

Better ways to address stormwater challenges

The actions and objectives outlined in *Rainfall to results*: The future of stormwater are meant to help communities tackle stormwater issues caused by urbanization, aging infrastructure, and climate change while overcoming regulatory hurdles. Beyond achieving a healthier water environment, stormwater management presents an opportunity to make communities more vibrant, livable, and resilient.

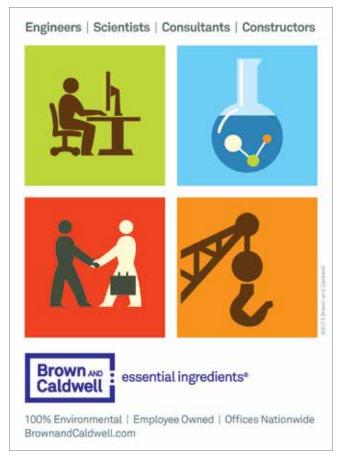
This report marks the beginning of an ongoing dialogue. It is a call to action for communities, companies, governments, and organizations to work together to move from rainfall to results.

To read more about current challenges and future opportunities in stormwater, download Rainfall to results: The future of stormwater at http://wefstormwaterinstitute.org/rainfall-to-results/.

Heather Harris is the chair of both the Stormwater Committee of the Water Environment Federation (WEF; Alexandria, Va.) and the Water Environment Association of Texas Stormwater Committee. She serves as the Central Texas operations lead for the Austin office of CH2M (Englewood, Colo.), where her focus includes stormwater management and stream restoration. Chris French is WEF's director of stormwater programs and is guiding WEF's newly launched Stormwater Institute through member, stakeholder, and practitioner engagement. Chris can be reached at CFrench@wef.org

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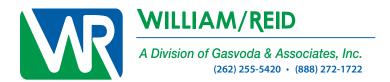


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The 2015 Legislative Year in Review

Last year brought victories for WEF and water agencies

By Steve Dye, WEF Government Affairs



The final months of 2015 were busy for the Water Environment Federation (WEF; Alexandria, Va.) government affairs efforts in Congress. Several major funding priorities for WEF and water were accomplished, and several significant policy goals were enacted into law.

Final FY16 Omnibus Appropriations Bill Restores Funding

In mid-December, the U.S. Congress reached a final agreement for the fiscal year (FY) 2016 budget for the federal government, the Consolidated Appropriations Act of 2016. The bill provides \$1.067 trillion in base funding, which includes \$73.7 billion for overseas contingency operations, \$7.1 billion in disaster aid, \$1.5 billion for program integrity, and \$700 million in emergency funding. Read the Consolidated Appropriations Act of 2016 at https://rules.house.gov/bill/114/hr-2029-sa.

Funding to all federal agencies is included in the bill, and it retains or increases the funding amounts for the agencies from FY 2015. The bill holds the U.S. Environmental Protection (EPA) at the FY 2015 enacted level of \$8.139 billion. The Clean Water State Revolving Fund is funded at \$1.394 billion and the Drinking Water State Revolving Fund is funded at \$863 million, restoring severe cuts proposed in 2015 in the draft House and Senate committee bills. The bill did not include funding for Water Infrastructure Finance and Innovation Act (WIFIA) loans and loan guarantees, but it did include language directing EPA to continue to use administrative monies to establish the program.

The bill was free of many of the policy riders that had been hotly debated in Congress, including any restrictions on EPA in proceeding with the implementation of the Clean Water Rule and the Clean Power Rule.

In 2016, WEF will be advocating before Congress and the Administration for full funding of the SRF programs, as well as funding for the WIFIA program to provide low interest loans for infrastructure projects.

Rider That Banned CSO and Wet Weather Bypassing Excluded

Also, in the FY16 Omnibus bill, a major effort to strip an unfunded mandate was successful. The Senate version of the appropriations bill that funds EPA included a rider that would have forbidden wet weather bypassing and combined sewer overflows (CSOs) in the Great Lakes watershed.

The compromise language in the final bill will require some additional reporting for CSO events only, but it makes no changes to the *Clean Water Act* requirements or additional fines.

The Senate's FY16 appropriations bill contained a policy rider (Sec. 428 of S. 1645) requiring all combined sewer overflows (CSO) in the Great Lakes watershed to be eliminated, including overflows discharged in compliance with a CSO Long-Term Control Plan (LTCP) or consent decrees. The rider would have also required water resource recovery facilities (WRRFs) to eliminate discharges of blended effluent that otherwise meet standards established in WRRF's National Pollution Discharge Elimination System (NPDES) permit during peak wet weather events.

A recently completed survey of Great Lakes WRRFs estimated the cost-of-compliance to the policy rider exceeded \$72 billion in the region. A coalition of cities, counties, and associations is aggressively lobbying Congress in opposition to this policy rider because it has the potential to be extremely costly, requiring massive infrastructure expansion, ratepayer increases, and reopening of consent decrees and/or LTCPs. More than 45 letters were sent to Congress from public agencies and organizations opposed to the policy rider, including WEF; the Water Environment Associations of Indiana, Michigan, New England, New York, and Ohio; and WEF members at agencies throughout the Great Lakes region.

WIFIA Fix and Better Highway Stormwater Management

The highway reauthorization bill, known as the Fixing American Surface Transportation Act (FAST Act) that was enacted into law in December, included a fix to the WIFIA program that WEF helped create, and a storm water management provision that WEF helped draft.

The fix removed a restriction on the use of tax-exempt financing on WIFIA-financed projects. WEF and other water associations have been advocating for the provision since the program was enacted in 2014. The WIFIA program required that WIFIA can finance only up to 49% of a total project cost, and the remaining 51% could not come from a tax-exempt source, such as tax-exempt municipal bonds or private activity bonds. This was limited by Congress in 2014 to keep the cost of creating WIFIA budgets neutral, with the intent of fixing it later. The restriction on tax-exempt

financing was removed by the provision in the FAST Act that WEF and other water associations strongly advocated.

Also included in the FAST Act was a stormwater management provision that WEF helped draft that directs metropolitan, nonmetropolitan, and statewide transportation planning agencies to "improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation," among the list of items to be included when agencies are planning surface transportation projects that use federal funding.

Rep. Donna Edwards (D-Md.), who was a member of the conference committee negotiating the final bill, included the provision. Language similar to the provision was originally developed by Sen. Ben Cardin (D-Md.) with WEF staff assistance and was introduced as the Highway Stormwater Management Act as stand-alone legislation in 2014 and 2015 (S. 518). On behalf of WEF, Dr. Dan Medina of Atkins Global (Epsom, U.K.) and Jim Gibson of Sanitation District #1 in Fort Wright, Ky., participated in a hearing in May 2014 before the Senate Water & Wildlife Subcommittee chaired by Sen. Cardin. During the hearing, the WEF members testified on the importance of better stormwater runoff management during the surface transportation planning process. Sen. Cardin introduced his legislation shortly after the hearing.

The provision that Rep. Edwards included in the bill is a significant step toward better stormwater management included early in the planning process of surface transportation bills. Currently, planning agencies that use federal dollars for projects are given eight criteria to consider during the planning process, such as increased safety, economic growth, and intermodal connectivity. The Edwards provision amends U.S. Code 23, Section 134(h)(1) and 135(D)(1), and will urge planning agencies to "reduce and mitigate stormwater impacts of surface transportation." Planning agencies are not required to include these criteria in projects, but projects that meet more criteria will score higher.

In 2016, WEF will be working closely with EPA to help complete the formation of the WIFIA program and establish another federally backed source of low-interest financing. WEF will also be working with the Federal Highway Administration to incorporate the stormwater management provisions into the project planning process so that stormwater management costs are built into the federally funded highway projects and are not left to local agencies to address after a project is completed.

Save the Date: WaterWeek 2016

WEF invites everyone to attend the National Water Policy Forum, Fly-In, and Expo (April 11-13) in Washington, D.C. Save the date and plan on joining your colleagues from around the nation to participate in the two-and-a-half-day meeting, which will feature congressional speakers, policy briefings, visits to Capitol Hill, and roundtable dialogues with key policymakers and experts on important regulatory and policy matters. The Forum, Fly-In, and Expo are hosted by WEF, the National Association of Clean Water Agencies, the Water Environment Research Foundation (WERF), and the WateReuse Association. It will take place during

WaterWeek 2016 (April 10-15). Registration and more details about the event will be coming shortly. The WEF Government Affairs Committee will also hold a full committee meeting on the morning of April 11 for committee members. We hope to see you there.

Since 2011 **Steve Dye** has served as Legislative Director for the Water Environment Federation (WEF). In his government relations role Steve represents the Federation before Congress, monitors key legislation and federal policies, develops and executes legislative strategies and proposals, and maintains WEF's excellent reputations before public and private interests in the water sector. He also leads WEF's Water Advocates Program, a grassroots program designed to mobilize and train WEF members to advocate before federal, state, and local officials.

The information provided in this article is designed to be educational. It is not intended to provide any type of professional advice including without limitation legal, accounting, or engineering. Your use of the information provided here is voluntary and should be based on your own evaluation and analysis of its accuracy, appropriateness for your use, and any potential risks of using the information. The Water Environment Federation (WEF), author and the publisher of this article assume no liability of any kind with respect to the accuracy or completeness of the contents and specifically disclaim any implied warranties of merchantability or fitness of use for a particular purpose. Any references included are provided for informational purposes only and do not constitute endorsement of any sources.

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By The Yard

By Lana Tullis

he pound, the gallon, the dozen or the hour. Most goods or services are associated with a clear, standard unit of measurement. These fixed metrics provide a means for evaluaton.

Responsibilities associated with Central States service roles are also clearly defined; 12-month term, three or more business meetings, four "Message from the Chair" articles, and so on.

Nine months in, with 750 words remaining in a 3,000-word allocation and I wonder; "What is the best metric to gauge the success of our efforts to support the missions outlined by Central States and the Water

Environment Federation (WEF)?"

WEF and Member Associations like CSWEA are working to drive innovation in the water sector, enrich the expertise of global water professionals, and increase awareness of the value of water. Unlike the clearly defined volunteer responsibilities, progress toward these common goals can be more difficult to measure. The efforts of our committees and other volunteers cannot simply be classified as success or failure, but rather, the resulting contribution to a growing organization.

Our events, attendees, exhibitors, awards and opportunities over the past year are each like a short length of string. Each success, new member, or award recipient, contributes to the overall measurement for the 2015-16 term. The accomplishments of each term may seem inconsequential on their own, but when tied together and wound around efforts and accomplishments from prior terms, a ball begins to form and grow in size with the potential to do great things (think sweaters in Minnesota).

Our section co-hosts numerous events each year including the Conference on the Environment (COE), the Innovative Operations Conference and the Collection Workshop. Attendance at the COE grew by 20% last fall, with hopes for an even larger attendance on November 9, 2016, when we return to the Minneapolis Convention Center. The Innovative Conference on February 9, 2016, was also a success, with regulatory and technical sessions plus the ever-popular "Innovative Quickies." We also look forward to seeing you on April 6, 2016, for the Collection Workshop in Faribault, MN.

Successful events start with quality speakers and topics of interest, but they end with you: the attendees and exhibitors. We strive to offer attendees a broader range of experiences and exhibitors exposure to a growing number of attendees



with each passing year. Thank you for your contributions as a speaker, attendee or exhibitor! It takes all three (plus a few more) to create a successful event.

Numerous awards have been announced, including the Minnesota nomination for the Industrial Environmental Achievement to Liberty Paper, Inc. (LPI) and the City of Becker, MN; the Collection System Award to Pete Owen and the Operations Award to Larry Rogacki. Financial support was awarded to students

from North Dakota State University for their success in the Student Environmental Challenge, a contribution was made to the Minnesota Wastewater Operations Association (MWOA) annual scholarship, and support was provided for Minnesota delegate(s) attending the WEF Fly-In as part of Water Week in Washington, DC. Water Week provides an opportunity to share our Minnesota perspective; collaborate on solutions; meet with Members of Congress and federal regulators; and to advocate for national policies related to clean water and a healthy, sustainable environment.

Other opportunities within, and created by, Central States are abundant. Opportunities to learn, lead, collaborate and educate the public regarding all things water. From volunteering at the Metro Area Children's Water Festival on September 28, 2016, to serving on a committee or presenting at one of many technical sessions. I appreciate the encouraging words that led me toward more active involvement. This term, and the past few years, have provided opportunities with many rewarding relationships and experiences. It's been a lot of fun, too!

Where will you find your opportunity? Being part of a current committee (Collection System, Industrial Wastes, Membership, Operations/Safety/Laboratory, Public Education and Students/Young Professionals)? Perhaps you are more drawn to developing opportunities, such as expanding our knowledge base and service to Stormwater and Water Resource issues, or brainstorming ways to provide support for CSWEA's Global Water Stewardship?

In-coming Chair and Vice-Chair Chris Harrington and Tim Wedin exude passion for water and the environment, provide many years of experience with the organization, and present welcoming attitudes. Please join them in 2016-17. Find your opportunity at the Minnesota Exchange (MNX) on April 28, 2016 in St, Cloud, MN. Your effort could add miles to our potential to do great things! CS



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Wisconsin: World-Class Learning Opportunities Happen Here

By Daniel Zitomer

pring 2016 is an exciting time for the Wisconsin section. We're honored to be hosting experts from across the country at three information-packed events: the WEF Odors and Air Pollutants
Conference, the WEF Biosolids and Residuals
Conference and the CSWEA Education Seminar.
A short description of each event is below.
I encourage you to extend your knowledge by attending one or more of these great events. In addition, I encourage you to mentor a young professional and bring someone along!

The WEF Odors and Air Pollutants conference will bring together environmental professionals from around the world and will provide education and resources on current odor issues, regulatory requirements, and methods for analyzing problems and finding solutions. The conference is scheduled for March 21 to 24 in Milwaukee, WI. Speakers will discuss practical issues including: sewer odor and corrosion control, biofilters for odor control, and how to integrate multiple odor control methods for total utility solutions.

The WEF Biosolids and Residuals Conference will be April 3 to 6 in Milwaukee, WI. This is North America's



longest running and most successful solids management conference. It provides an exclusive opportunity to network with researchers, thought leaders, and practitioners, and explore biosolids management. This year's conference will provide comprehensive information on how to achieve resource recovery, with topics ranging from the latest research on recovery technologies, to examples of tools and approaches that support the development of resource recovery programs.

The CSWEA Education Seminar will be on April 19 at Monona Terrace in Madison, WI. The theme will be: Treatment Plants of the Future! Speakers include Glenn Daigger (University of Michigan), Bruce Rittmann (University of Arizona) and others, including the executive directors/general managers of Chicago, Milwaukee, Madison and the Twin Cities wastewater utilities.

It is remarkable that we have three world-class events all occurring this spring in Wisconsin. What a great opportunity to hone our technical skills and protect our water resources. So mark your calendars, plan to attend and bring someone along! CS



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Cooperation, Collaboration

by Erik Lanphier

t is hard to believe that my time as your Illinois Section Chair is coming to a close. I wanted to take a few moments of your time to reflect on cooperation and collaboration and how these two words will always be a staple in the success of mankind. It never ceases to amaze me how volunteer organizations are initiated by a brilliant idea, either from one person or multitudes of people talking about something that is needed to make humanity better. The process of embracing a single idea and turning it into an organization of selfless

people creating a better way of life takes cooperation. When egos are checked at the door and opinions are viewed as opportunities for growth cooperation and collaboration will lead to success.

What is taking place with the people who are working on the Global Water Stewardship (GWS) is exactly what is needed to create something from nothing. CSWEA launched the GWS in

2013 to help solve water treatment issues around the world. The first two projects the stewardship is working to complete are in Costa Rica. Both of these efforts seek to provide two remote villages with sanitary sewer infrastructure. This will help alleviate pollution on their streets and in their rivers and streams. The success of these projects is bound by Trust and cooperation.

Mohammed Haque spoke of this in a one-page document which articulated the incorporation of so many different people into the development of what

the GWS is planning to deliver. The long-term solution begins with utilizing a design challenge to incorporate the brilliant young minds of graduate students from three or more major universities, with mentorship from CSWEA industry professionals, to help produce innovative solutions. The Costa Rican engineer will finalize the winning design and submit it for permitting.

GWS continues in the tradition of cooperation and collaboration with work that involves the Ministry of Water (AyA), local municipal leaders (ASADA) and local non-governmental organizations (NGOs). The list of organizations continues to grow and also includes the following; Initiative of Stanford University (INOGO) CRUSA, Área de Conservación Osa – Sinac, US Peace Corps., Fumigadora Alto, Geoporter, Case Western University – Ohio, Coldwell Banker Dominical Realty and University of Wisconsin – Platteville. GWS is a great example of what I am trying to convey.

On a more regional level, the work at the DuPage River Salt Creek Workgroup, or Illinois Association of Wastewater Agencies, or the fairly new creation of the Water Technology Alliance, all demonstrate the creation of solutions by committee.

Another collaborative effort began at the 2015 CSWEA annual meeting when an ad hoc group gathered to discuss meeting with USEPA Region 5, to begin a dialogue on agency priorities and issues of concern to the Central States membership. It is with great intention that this could become a regular event and Central States may become the facilitator of agency dialogue for our region with hopes to foster solutions to issues that are not bound by borders.

I sincerely want to thank all of the students and professionals in our local, national and global industry that work together to solve issues that directly affect humanity. On one of those beautiful Midwestern days in May or June when you are daydreaming about "living the dream" remember this quote by Dr. Wayne Dyer (May10, 1940 – August 29, 2015); "If you change the way you look at things the things you look at change."

Have a great spring and an amazing summer. CS

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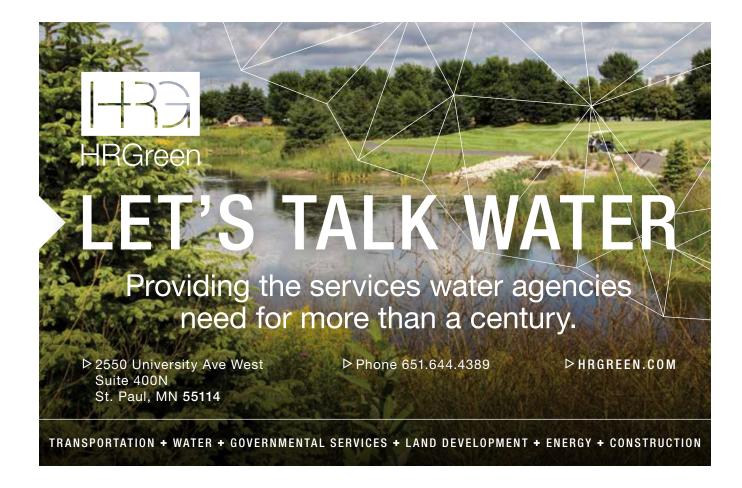


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CSWEA Welcomes Our New Members

pdated on February 29, 2016

November 2015

James Kroehler, City of Le Sueur Ian Peterson Kevin Ripp, Aquafix

December 2015

Eric Fisher, IPS America
Robert Hines, Veolia
Sam Hocevar, Strand
Michelle Hollander, CH2M
William Jones
Joe Lewis, Houston Engineering
Laura Kimes, Fresh Coast Capital
Jessica Nanes, Milwaukee MSD
Cari Roper, Milwaukee MSD
Morgan Salo
Cody Schoepke, City of Fond du Lac
Dan Stephany, City of Monona
Curt Weber, UW-Whitewater

January 2016

Sidharta Arora, Veolia
Dean Hacker
Michael Harder,
Metropolitan Airports Commission
Saeid Khodaei, IIT
Yuna Kim
Lee Kimbell, Marquette University
Randy Lindquist, West Central
Wisconsin Biosolids Facility
Richard Mayer, CDM Smith

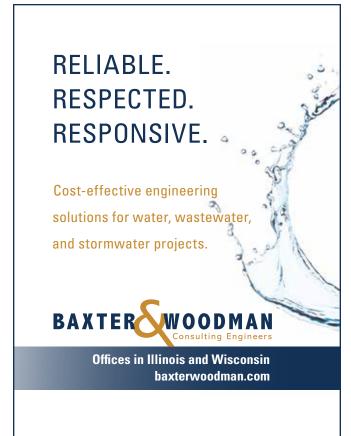
Richard Mayer, CDM Smith
Cyrus McMains, RHMG
Daniel Mikso, MWRD
Theera Ratarasam, Wisconsin DNR
Daniel Schaefer, SHE
Jon Strand, CBS²
Cindy Tiemann, Fiedler's
Mathew Weiss, UW-Milwaukee

February 2016

Elaine Batchev Luke Sandstorm, City of Roseville, MN Nicholas Benn, Marquette University Ryan Kotta, Bolton-Menk Ross Kusnierz, Advanced Chemical Systems

Todd Monson William Sheridan, Honeywell Process Solutions

John N Szyszkiewicz, Veolia Jennifer Wright, Milwaukee MSD





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MARCH

WEF – Odors and Air Pollutants 2016

March 21-24, 2016 Milwaukee Convention Center, Milwaukee, WI

WI Section Spring Biosolids Symposium

March 22, 2016 Holiday Inn, Stevens Point, WI

IL Section Government Affairs Seminar (w/ IAWA)

March 22-24, 2016 Pres. Abraham Lincoln Hotel Springfield, IL

WEF - Residuals and Biosolids 2016

April 3-6, 2016 Milwaukee Convention Center Milwaukee, WI



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- FIRE HYDRANT ASSESSMENT
- SANITARY & STORM SEWER STRUCTURE LOCATION, INVENTORY & DOCUMENTATION

WATER QUALITY



- CROSS CONNECTION CONTROL SURVEYS & INVENTORY
- BACKFLOW ONLINE / WEB-BASED
 MANAGEMENT SYSTEMS

APRIL

MN Section Collection Workshop (w/ MWOA)

April 6, 2016 Faribault Public Works, Faribault, MN

CSWEA WaterWeek 2016 / WEF Fly-In

April 11-13, 2016 Washington, DC

CSWEA Student Design Competition

April 18, 2016

Monona Terrace, Madison, WI

CSWEA Education Seminar: Treatment Plants of the Future

April 19, 2016 Monona Terrace, Madison, WI

MN Section Exchange

April 28, 2016 St. Cloud WWTF

MAY

CSWEA 89th Annual Meeting

May 17-20, 2016 Monona Terrace, Madison, WI

JUNE

WI Section Classic Collection System Seminar

June 9, 2016 Watertown, WI

IL Section Collection System Conference

June 9, 2016 Aurora University, Aurora, IL

WI Section Pretreatment Seminar

June 28, 2016 University of Wisconsin Oshkosh Alumni Welcome and Conference Center

JULY

WI Section Northwoods Collection System Seminar

July 21, 2016 Marshfield, WI

NOVEMBER

MN Section 31st Conference on the Environment

November 9, 2016 Minneapolis Convention Center Minneapolis, MN

Odors and Air Pollutants 2016

March 21–24, 2016 | Milwaukee, Wlwww.wef.org/OdorsAir

Odors and Air Pollutants 2016 will bring together environmental professionals from around the world to provide education and resources on current odor issues, regulatory requirements, and methods for analyzing problems and finding solutions.

Technical program session topics include the following:

- Odor Dispersion Modeling
- Corrosion
- Odor Management, Monitoring, and Performance
- Biological Odor Control
- Collection System Odor Control



Residuals and Biosolids 2016

Biosolids as a Resource

April 3-6, 2016 | Milwaukee, WI

www.wef.org/ResidualsBiosolids

Residuals and Biosolids 2016 will provide comprehensive information on how to achieve resource recovery, with topics ranging from the latest research on recovery technologies to tools and approaches that support the development of resource recovery programs.

"I hadn't attended this conference for many years and was amazed at the expansion of technology that has occurred. I brought back a lot of information that could result in a reduction in my agency's operating costs and ideas for future facilities."

-Carol Mordorski

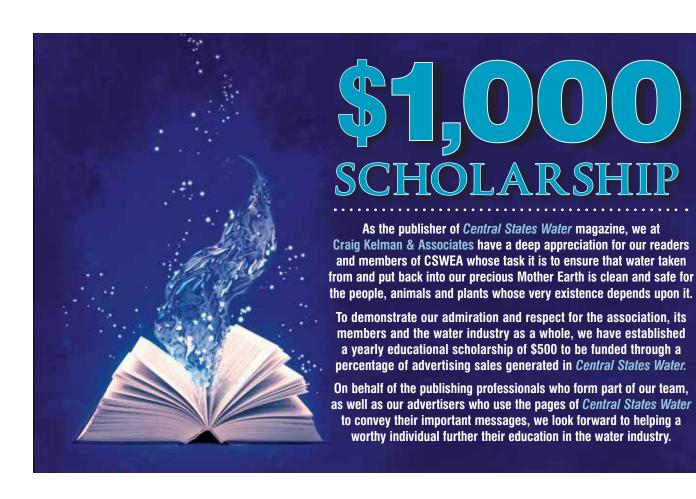






This conference is organized by the Water Environment Federation (WEF), in cooperation with the Central States Water Environment Association (CSWEA) and the Water Environment Research Foundation (WERF).





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Sensus	21	763-856-0110	www.sanitaire.com
			www.sensus.com
Short Elliott Hendrickson (SEH)	65	651-490-2030 704-844-1100	www.sehinc.com www.smithandloveless.com
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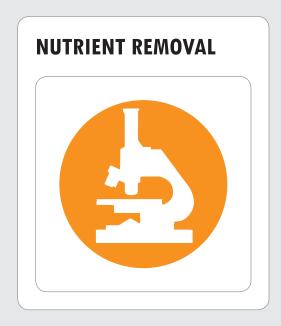
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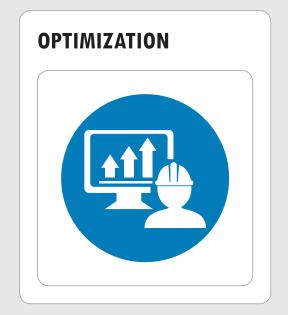
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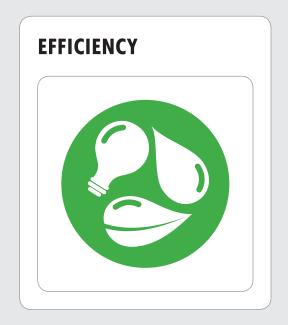
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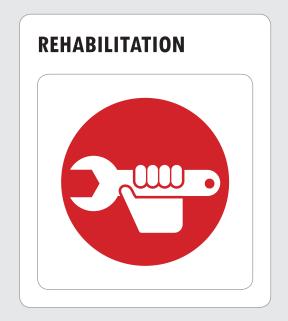
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