

Ohio Water Environment Association | Volume 88:2 | Issue 2 2015



Choosing a Contract Lab



Blueprint Columbus Collection System Model page 60



NEORSD'S Approach to Managing Wet Weather Flows page 70



Water Environment Association Preserving & Enhancing Ohio's Water Environment

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City of Warren WPCF page 54

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What's Inside

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The *Buckeye Bulletin (BB)* is the official publication of the Ohio Water Environment Association, Inc., a not-for-profit corporation founded in 1926, dedicated to the improvement of water quality in Ohio and the continuing education of water professionals. It is one of the top five member associations of the Water Environment Federation.

The ideas, opinions, concepts, and procedures expressed in this publication are those of the individual authors and not necessarily those of the Ohio Water Environment Association, its officers, general membership, or staff.

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Check out OWEA's website, *ohiowea.org*, for a complete listing of OWEA approved training.

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FEATURES

Kocarek Korner	8-9
WEFTEC 2015	13
Ohio EPA Update	26-27
2015 Technical Conference and Exhibition	33-47
Thank You 2015 OWEA Sponsors	35
Choosing a Contract Lab	48-50
Plant Profile - City of Warren WPCF	54-56
Blueprint Columbus Collection System Model	60-62
NEORSD's Approach to Managing Wet Weather Flows	70-73
Turning a Pollutant into a Resourse	78-80

DEPARTMENTS

OWEA Officials	4
OWEA News	5
Calendar of Events	5
President's Message	6-7
WEF Delegates' Report	10-12
Section Reports	14-15
Committee Reports and Updates	16-20
Roll Call	22
Passings	22
Welcome New OWEA Members	23
Utility Partnership Program	23
2015 Sponsor Program	32
Advertiser Index	86

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Get Involved - Join a Committee Today

The Ohio Water Environment Association has 25 committees which focus on various aspects of the water quality field and association operations.

Contact OWEA at **info@ohiowea.org** or the chair of a committee that interests you for more information.

OWEA NEWS

2015 WEFMAX in Virginia

WEF sponsors an annual program offering Member Association (MA) leaders the opportunity to exchange information with other MA's and WEF staff. This program is called WEFMAX, with four locations offered each year, with state/regional MAs hosting the event in their location.

In April, OWEA's Past President Dan Sullivan and OWEA's Executive Assistant Amy Davis attended WEFMAX 2015 in Virginia Beach, Virginia. Dan presented "*Member Association Financial Stability*" which covered Financial Reporting, Sponsor Program, Growing Membership, and the Freedom to Innovate. Topics presented by other member associations were Student Chapters and Young Professionals, MA Leadership Development, and Public Outreach, to name a few.

Dan and Amy (pictured below) share a WEFMAX "Selfie" moment.



Membership Services

If you need assistance with membership details, event registration, or coursework reports, contact us at 614.488.5800 or:

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Career Opportunities

The "**Careers**" page is the most visited page on OWEA's website.

- No charge for job seekers.
- No charge to post a position if you or a fellow employee are an OWEA/WEF member.
- \$143 for a 30 day posting if not a member.
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contact OWEA (614.488.5800 or info@ohiowea.org).





OWEA News and Calendar

OWEA CALENDAR

- 14 Collection Systems Workshop
- 14 Water For People Fundraiser Columbus
- 20 NW Section Meeting /Golf Outing
- 21 NE Section Meeting
- 21 SW Section Meeting

June 2015

May 2015

- 4 SWOWEA Almost Free Plant Ops Seminar
- 22 OWEA Golf Outing
- 22 NWOWEA Preconference Workshop
- 22-23 OWEA Operations Challenge Invitational
- 23-25 OWEA Annual Technical Conference & Exhibition
- 25 OWEA Executive Committee Meeting

July 2015

- 1 Articles and Ads for August Buckeye Bulletin
- 16 SWOWEA LAC Meeting

August 2015

18	One Water Utility Management Workshop
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16 SWOWEA LAC Meeting

September 2015

17	SW	Section	Meeting
1/	2.1	Section	meeting

- 26-30 WEFTEC in Chicago
- 29 OWEA Member Bus Trips to WEFTEC

October 2015

- 8 SW Section Meeting
- 21-22 Plant Operations/Lab Analysis Workshop

November 2015

12 Watershed Workshop

December 2015

3 Biosolids Workshop

2015 Membership Rates

Rates include membership in the Ohio Water Environment Association and the Water Environment Federation.

- Professional & Academic.....\$143
- Operations......\$81
- Young Professional\$61
- Student.....\$25
- Executive.....\$322
- Corporate\$400

Membership information may be found at: http://www.ohiowea.org/memberships.php

President's Message

I hope this issue of the Buckeye Bulletin finds you and your family finally outside and enjoying the spring, after the long stretch of winter weather in Ohio. I used to complain about rain, but I will gladly take 2 inches of that stuff over 6 inches of snow any day. As with the changing of the seasons, it's now time for a changing of the guard at the helm of OWEA. It is hard to believe that my Presidential year has just rounded 3rd base and is headed for home. I know many are disappointedhaving just started to gain appreciation for my 80's movie quotes and comparisons--but this is my last president's message (aka Frommer Forum). You will need to return your attention to the technical articles in upcoming issues of the Buckeye Bulletin. Every past president has warned me about the light speed in which one's term comes and goes. I can certainly add to that sentiment with future presidents.



Michael Frommer, P.E. OWEA President

The signature content of every past president's message has been a recap of the year's activities under the direction of said president. As is my standard style, I am going to deviate from that past trend and go back a few more years to a time when it all started for me.... long, long ago in a galaxy far, far away ... as part of the Executive Committee (EC).

My journey started in the Spring of 2008, when I received the Southeast Nomination for the State EC at a Section Meeting at Deer Creek State Park (no location significance). Early polls indicated Gary Hickman was the front-runner for the position, but he declined the nomination because of upcoming work commitments and a potential retirement during the 8 year term. Please note that Gary is still happily working for the City of Columbus. I was being considered for a future nomination, but in Gary's absence stepped up to carry the Southeast torch on the EC. It was going to be no easy task; I had to follow in the footsteps of Sheree Gossett-Johnson and Dale Kocarek, neither of whom left small shoes to fill.

The EC (in 2008) was intrigued by the Southeast's choice, because I was 34 years old and part of "this new generation of YP's", whose involvement was a focal point of WEF and the answer to the retiring baby boomers. I was very wet-behind-the-ears but thankfully everyone welcomed me.

My first official EC activity was a fall board meeting at the OWEA office on High Street in Worthington. The 2008 EC was looking to drastically change the current landscape and direction of the organization by increasing service and value to our membership, adding more training opportunities for our operator and engineer members to aid in their licensure renewal requirements, and stabilizing our association financials to establish a reserve which would weather any storm. The first two (2) items came as no surprise to me but the latter left me wondering what I had gotten myself into. I have since learned that fiscal conservativeness is a very desirable attribute of a volunteer driven non-profit organization.

I am pleased to say that OWEA has definitely taken a new course over the last seven years and has accomplished the goals that were laid out to me in 2008. To quickly measure the success of these goals you simply need to read the results of our 2013 membership survey, which illustrate the current high level of satisfaction of our membership. Our event attendance has increased from approximately 900 in 2009 to over 1300 in 2014, which is no small feat given the economic downturn. Also, the OWEA account balance has doubled since 2008 and provides the association financial protection from any unplanned events.

I would love to take **<u>full</u>** credit for <u>all</u> of the successful planning, implementation, and execution of activities over the last seven years, but in reality THIS success story came about simply because a group of passionate people realized that a change was needed and worked together to make it happen.

The key to this success (in my opinion) was the combination of an aggressive, forward thinking, executive committee and an excellent staff led by Judi Henrich (more about Judi later). A dangerously good combination if I do say so indeed.

Over the years, the EC has been a truly great blend

of operators and engineers by trade, and public utility managers, consultants, and equipment representatives by day. The secret recipe for success is development of outstanding individual ideas brought forward and refined by a board of industry leaders and implemented by the most professional staff around. Innovative and out-of-the-box ideas, combined with strong core values which center on fiscal conservancy and face-to-face networking with peers is the trademark of your EC. Furthermore, each board member brings something unique and special to this successful recipe. Upon reflection, my experience working with each of them has taught me so much . . . my opinion of their gifts and talents are below:

- Elizabeth Wick Organized thinker that looks at all possibilities and angles
- Ted Baker Our "big idea" guy entrepreneurial ideas with drive toward giving
- Dan Sullivan Consummate collaborator with strength in numbers mentality
- Doug Clark Strong leader in times of chaos or in need of direction
- Dale Kocarek The sage historian, who provides professorial insight in mentoring young professionals
- Tom Angelo Spontaneous and passionate ideas to push and redefine boundaries
- Jamie Gellner *Calm and focused leader through complex issues*
- Tyler Linton *Thoughtful with an analytical approach to problem solving*
- Kim Riddell Get-it done approach with Operator inclusion focus
- Mike Welke A listener, who listens to all sides and then provides insightful perspective
- Jane Winkler Level headed decision making with a genuine personality and good heart

This list was developed based on my past working experience with these individuals and their many contributions during past EC meetings. A truly talented team indeed, that complements one another very well and has all of the bases covered. And as I noodle through the strategy of any given situation, I realize just how much it takes a Village. Judi Henrich, our Executive Manager, has been with the association since June 2008 (seems like it should be 1999) and is the true catalyst or "quarterback" of the association (and on occasions the offensive line, running back, and receiver) for its activities including interface with the membership. She is an amazing lady and was the perfect fit for OWEA, given her background in hotel management and marketing, combined with her instinctive love for the environment. Judi strives to provide professionalism, streamlined business operations, and top-notch customer service at each and every event. She also continuously practices with a strong attention to detail and focus on value. She has been a huge part of OWEA's success since joining the association and has been the perfect "teaming partner" with the EC. Judi also has the unfortunate assignment of sometimes bringing the EC's forward-thinking balloon back to Earth with logistics and details of implementation that render some ideas as infeasible or unaffordable. Like chocolate and peanut butter, we're a great combo. Amy Davis and Amanda Goodwin round out the OWEA staff and make an excellent team with Judi.

And now for a focus on outcomes. The catch-phrase and mentality commonly adopted by many constituents of organizations and political subdivisions is . . . what have you done for me lately? And . . . what have you done to make things better for me? I am pleased to report to our membership that the answer to these questions is many and listed below in no particular order. This is by no means an inclusive list, but simply the highlights of what I have witnessed in my time on the EC.

- One Water Joint Conference and developed relationship with AWWA counterparts
- Online Contact Hour Training Tracking System
- Statehouse Legislative outreach and education event
- Represent Membership Interests at WEF Fly-In Event in Washington DC since 2011

Jammin'4Water

An open-mic amateur performance benefitting water charities at WEFTEC[™] 2015 in Chicago.

Musicians inevitably find other like-minds and talents with which to play. In today's world – apps and websites more frequently bring musicians together; so does WEF. Since it's 2011 inception, **Jammin'4 Water** has become a popular and fast-growing water industry related musical collaboration and charity event: .

The 2015 **Jammin'4 Water** event will be in Park West. One of Chicago's best equipped multimedia facilities, this historic theatre has been an integral part of the entertainment scene since it opened in the 1920's. Park West has been the premier concert location for nationally recognized entertainers and will be a great place to play and listen to music. Doors will open at 6 and music starts at 7.

If you would like to participate as a musician, sponsor, or attend; please find details at: http://www.jammin4water.org/



President's Message

- Established Watershed Committee and Annual Workshop led by YPs
- Implemented Online registration system for State and Section Events
- Switched workshops to North Pointe venue for the food
- Established Public Education funding program for school age children
- Membership Survey and Strategic Plan Development
- ♦ Hired Judi Henrich!

Not bad for a volunteer led organization that had one employee until 2011!

I am also pleased to announce that the EC is not resting on its laurels, but is actively making plans for the upcoming years that will include a mobile and educational outreach vehicle, operator training and certification program, and annual One Water events with AWWA. There is no doubt in my mind that incoming President Wick is the perfect leader to evaluate the landscape of opportunities and make the best decisions moving forward.

It has been my true honor and privilege to be the 90th president of the Ohio Water Environment Association. I could not have imagined working with a better group of folks since 2008 . . . everyone brought something different to the table, but we all shared the same passion for protecting the water environment. And I owe a big thanks to Gary Hickman for letting me be part of the fun.

As in the 1965 movie, Sound of Music, it is time for me to say ... So Long, Farewell, Auf Wiedersehen, and Good Bye! As always, be safe and try to do what you can to improve the water quality around you. See you at Kalahari in June!

Michael Frommer, OWEA President mike.frommer@aecom.com

2015 Hands-On Collection Workshops

4 Contact Hours - \$20 (includes lunch) Coming to an OWEA section near you! Save the Dates

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SE Section Thursday, October 29, 2015

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Kocarek Korner

I DO NOT BELIEVE IN ACCIDENTS

by Dale E. Kocarek, P.E., BCEE, OWEA Past President 2010-2011

Introduction

This article is a continuation of the *Kocarek Korner* published in Issue #1 of the Buckeye Bulletin for 2015.

As part of the title, "*I Do Not Believe in Accidents*", it is important to clarify that this current article does not pertain to worker safety or accident prevention programs that the Ohio Water Environment Association promotes. Rather, it suggests the influence of a Great Creator that orchestrates the events of Human History and His impeccable timing for doing the right thing at the right moment. In the large scheme of things, the events are grand, transformative, and yet so seemingly ordinary in the course of human events that they may escape notice.

Perhaps the Greatest Scientist of All Time



Every engineer since the 18th Century has been influenced by Isaac Newton in a significant way. Sir Isaac Newton (1642-1727) was an English physicist and mathematician, philosopher, and biblical scholar and is widely considered as the father of modern physics. Newton was a fellow of Trinity College and the second Lucasian Professor of Mathematics at the University of Cambridge, which is the same seat occupied by Stephen Hawking today.

Sir Isaac Newton 1642-1743

Newton lived during the Age of Enlightenment when the growth of knowledge about the physical environment was abounding. His career was long and prolific and there was little in the areas of the physical science or mathematics that he did not either invent or influence.

At The Ohio State University, where I studied Civil Engineering, we were required to take three courses in Physics, followed by three courses in Engineering Mechanics: Statics, Dynamics, and Strength of Materials. These courses were the foundation of many branches of engineering. The body of this knowledge was largely based on Newton's Laws of Physics.

Coincidentally, during a survey of the *100 Most Influential People During the Last Thousand Years*, Newton was named in the top three, along with Johannes Guttenberg (inventor of the printing press in 1439), and Martin Luther (Protestant Reformation in 1517).

An Accident or Part of a Plan?

Newton was born in Woolsthorpe, Lincolnshire England where his father was a prosperous farmer. In 1661, he went to Cambridge University where he became interested in mathematics, optics, physics and astronomy.

Then, in October 1665, the bubonic plague – also called the Great Plague – swept through London. The Great Plague (1665–66) was the last major epidemic of the bubonic plague to occur in England, and despite being smaller in scale than previous outbreaks, it killed about 25% of London's population. The fear of the plague closed the university, forcing Newton to return home to the countryside where it was believed that the plague would not follow.

Here Newton was at the prime of his life, and forced into idleness. The farm was well run and there was little to do. It was during



Woodcarving Depiction of the Great Plague

this time that some of his ideas pertaining to gravity and the basic laws of physics were first postulated. Some have accredited this grand awakening of intellect to forced idleness induced on him by the Great Plague. So, the question that must be asked is: was this a random set of events or part of a plan?

Activated Sludge: A Transformational Discovery

As I stated in my previous article, 2014 marked the 100th anniversary of the invention of *activated sludge* by Edward Ardern and W. T. Lockett in 1914.

If anyone has ever tried to explain the activated sludge process to a lay person, it can be quite challenging. Its explanations are both simple and complicated. I have done a lot of presentations to school age children at the Central Ohio Children's Water Festival. When I start talking about activated sludge, I take a deep breath and think carefully about what I am going to say next because that is when the puzzled looks take over. It is easier to talk about sand filters and Imhoff tanks, which shows how complicated the subject of activated sludge truly can be to explain. When I teach at the Children's Water Festival in Columbus, I proudly display my 1900 vintage sand filter. I run dirty water in, and get clean water out. Kids understand this concept well; activated sludge is a different story.

Activated sludge is a term used to categorize water microorganisms including amoebae, protozoans, ciliates, fungi, worms, and bacterial colonies, generally dominated by the genus pseudomonas. This unique culture is maintained in suspension by air and mixing in a bioreactor, and held in contact with wastewater for a period of a few hours to a day. The process has been widely studied for the last century, but it continues to hold the interest of the most seasoned expert. The big question to me is who would have ever conceived of such an idea at that time on their own? Not only does it work to remove different substrates from wastewater, but the viability of the process depends on the fact that mixed liquor suspended solids (MLSS) has a specific gravity slightly heavier than water so it settles. If this was not true, the process would fail.

Kocarek Korner



Again, Is It Part of a Plan or Was It Luck?

As I stated previously, the discovery of the process is an interesting story, and attests to great discoveries in science being a "bottom up" process rather than a "top down" one. I believe that the discovery of activated sludge falls into the category of laboratory blunders due to poorly cleaned testing apparatus. All I can say is that I believe that this discovery came at the right time in world history when the world's population was growing and urban waters were becoming more and more polluted. Something dramatic needed to be done.

Another Health Crisis for England



England is a first for many things in the public health field. As I stated, it saw the ravages of the Great Plague, and then on August 31, 1854 a world changing Cholera Epidemic occurred in London, England at the "Broad Street Pump. Local medical practitioners determined a positive correlation between cholera and waterborne pollution. This was the first time in history where such a correlation was made. The 1854 Cholera Epidemic at the Broad Street Pump set into motion a course of events, which started the public health movement that continues to this day.

The Infamous Broad Street Pump London, England

My Family's Story from England

From time to time, I like to work in examples from my own family where I feel that it is relevant and something may be learned. I believe that our work is personal.

Like many of us that live today, my family was impacted by illness and death due to water borne disease. My maternal grandmother and great-grandparents were from England with an ancestry traceable to the Middle Ages.



Modern Wastewater Treatment Plant, the Licking County Buckeye Lake WWTP

My example pertaining to the water pollution related death was my Great Uncle Jack (John Thomas Muschamp 1880-1905) in the early 20th Century. The family has told me that he died in about 1905 after swimming in the Thames River. The exact cause of disease was reported to be water pollution illness. The details are lost in history.

Anyone that has studied the history of sanitary engineering and water pollution understands that the Thames River was notorious for being one of the most polluted river systems in the world; so much so that it gave birth to the term "5-day biochemical oxygen demand." The 5 day time was the generally regarded length of time that it took water to flow from the headwaters of the Thames to London and ultimately to the sea. The worst impact was felt in London, with a population of over a million people and one of the world's largest centers of commerce. Jack's death was one motivating factor leading the family to leave England for America in 1907. To personalize this period of time, see photo below: from left to right are my great grandmother Elizabeth Frances Bolton Muschamp (1848-1940), her youngest son Arthur Douglas Muschamp (1889-1982), and youngest daughter May Levenia Muschamp (my grandmother, 1891-1980) shown near the time of Jack's untimely passing.

What is Your Story?

I believe that one can only understand the present by learning from the past. If any of our readers has a story about how their family was impacted by water pollution or what motivated them to be part of this exciting field, I would like to hear about it. It puts a human face on what we do. In this day and age of advanced treatment, it is important to know how far we have come. It is far! We need to pass on our message to the next generation. One way to do this is to stress the relevance and continued need of what we do. As WEF has stated in a slogan, "*Water is Life, and Without Water, Life is Impossible.*"

Dale E. Kocarek, PE, BCEE Chair, Government Affairs Committee; WEF Delegate Stantec Consulting Services, Inc. *dale.kocarek@stantec.com*



The author's family from England circa 1905

WEF Delegates' Report



Dale Kocarek





Tom Angelo

I decided to use the spring 2015 report that I wrote for House of Delegates Speaker Duyen Tran as the basis of my report. I feel that it summarized the activities of the House of Delegates well. As I have mentioned, my current responsibility in the WEF HOD is on the Steering Committee, where I am the official scribe. It is essentially a note taker and issuer of written documents.

The Steering Committee provides an important leadership function to WEF. Part of the role of the Steering Committee is to direct and oversee workgroups and advance ideas to the Board of Trustees (BOT) through the Speaker. The group oversees the four workgroups through liaisons. The following is a report of the workgroups (WG). I will talk about the committees in a subsequent report.

MA FINANCIAL SUSTAINABILITY WORK GROUP, LED BY JOHN RAFTER:

This WG will complete the work started by the 2012-2013 MA Sustainability WG and concentrate on ways member associations (MAs) can become more financially sustainable and secure. Last year key policies were identified and drafted. At the conclusion of drafting these initial policies, it was recommended that the workgroup continue one more year to develop additional policies and provide a knowledge-link to MAs on additional policies and best practices for revenue generation to allow for financially sustainable MAs.

Work:

1st SubWG Policy: Develop the generic policies, procedures, and best practices that will be posted to the WEFCOM site for MAs to access. The SubWG now has examples for the initial targeted policies: Board Expenses, Physical Property Controls, Surplus Property Controls, and Credit Card Use. The SubWG is now targeting additional policies identified.

2nd SubWG Revenue: Develop example revenue generation programs and place on the WEFCOM site for a database for MAs. The SubWG reached out to the WEFMAX Committee requesting a 20 minute time slot to discuss Revenue Generation at each WEFMAX (WEF Member Association Exchange) site. This was accepted by the WEFMAX Committee and is now on the programs.

Action Plan:

1st SubWG Policy: By the end of March this SubWG will identify the next four policies to review. The four policies will be vetted to become example policies. The target date for completing the review is June 1, 2015.

2nd SubWG Revenue: The SubWG is developing a 5-10 minute presentation to stimulate discussion during a twenty minute idea exchange focused on revenue generation for MAs at all the WEFMAXs. We have identified presenters for each WEFMAX from within the WG.

Operator of the Future WG, led by Mike Kyle:

This workgroup is built on the work originally completed by the HOD Operator Outreach Workgroup and the work underway by the WEF Operator Strategy Workgroup to develop the WEF strategy for the professional development of trained and credentialed operators into the future. We should assure that the WEF strategy benefits from MA input and is fully embraced by the MAs, and we will play a key role in communicating the strategy to the MAs.

Work:

Goal #1: Work with the Plant Operations and Maintenance Committee (POMC) taskforce to develop an Operator Knowledge Framework

Progress/accomplishments: The POMC taskforce is being headed up by Stacy Passaro and Kim Riddell. The initial makeup of the task force includes some HOD Operator of the Future Workgroup members. There was a brief meeting at mid-year to flesh out the concept, which is to develop a series of brief 1 or 2 page outlines of "what an operator needs to know" to operate and maintain specific operational units. The technical content will be developed working with other technical committees. Stacy and Kim will report back to this Workgroup on the *Operator Knowledge Framework* development with our Workgroup providing feedback throughout the process.

Goal #2: Contact operator certification program officials to encourage adoption of principles outlined in the WEF Operator Training & Certification Position Statement.

Progress/accomplishments: A Subgroup "Certification Outreach" chaired by Kelli Buscher met again on January 21, 2015 and February 24, 2015 to further their goals, as follows:

- Develop talking points on certification & training and questions for certification officials
- Identify target states for outreach
- Document successes and lessons learned

WEF Delegates' Report

The group engaged ABC representatives to solicit their perspective of certification issues like reciprocity. Sample questions for the state certification officials have been drafted and reviewed. Sixteen (16) Workgroup members have volunteered to individually reach out to their state certifying agencies (20 states) with the sample questions.

Goal #3: Improve recruitment of qualified professional operators

Progress/accomplishments: A Subgroup "Operator Recruitment" chaired by Dean Miller continues to work on their goals, as follows:

- Identify model training programs
- Develop package of promotional materials to share with MAs
- Develop PowerPoint presentation and present at each WEFMAX

They were successful at obtaining a slot on each of the three WEFMAX's this year to present a PowerPoint on operator recruitment, and have obtained volunteers to present at each. Dean and the group are in the process of developing the presentation.

Goal #4: Assist WEF and WEF Operator Strategy Workgroup to develop and administer a survey to determine training needs for operators

Progress/accomplishments: The Workgroup was asked to reach out to its respective states to obtain a list of contacts for the survey. Multiple lists were submitted to WEF by the Workgroup to provide to the WEF consultant to assist in finalizing a robust contact list for the survey.

Goal #5: Assist WEF and WEF Operator Strategy Workgroup in rolling out WEF operator strategy.

Progress/accomplishments: None to date. This is pending completion of the strategy and adoption by the WEF BOT.

Our Action Plan:

The workgroup will continue to meet as a whole via conference call on a monthly basis, and the two active sub-groups will meet (monthly or as needed) via conference call to continue to make progress in meeting our goals.

WATER ADVOCATES/VALUE OF WATER (VOW) WG, LED BY ROSANNA DILABIO:

This workgroup works with WEF staff and the Board of Trustees on the Strategic Plan Critical Objective to "Increase the Awareness of the Value of Water. The activities surround two related projects.

- 1. The Workgroup will 'ground-truth' the materials, provide input, suggest new tools and methods of distribution and become ambassadors for the campaign by helping to implement. Recommendations on both programs' strategies and materials will be sought during the fall and winter with focus on implementation strategies in the spring and summer 2015.
- 2. The workgroup will identify additional tools and methods to engage more MAs in the Water Advocates cause and hone in on additional, perhaps more regional, training opportunities.

Work:

- 1. The workgroup has continued to meet however in much smaller numbers. It appears with the stop and go, stop....aspects that have been occurring with the VOW Coalition we seem to have lost momentum and some interest in a number of workgroup members.
- 2. Our workgroup has provided some very valuable insight back to the VOW Coalition and we are hoping that this information is acknowledged in the revised messaging that has been said to be about complete.
- 3. We also have provided feedback and our recommendations to the VOW Coalition for items that should be included in the toolkit to assist with the dissemination of the new messaging. It was noted that there are definitely regional nuances that need to be recognized and that flexibility in the messaging is necessary.
- 4. We were hoping to get a time slot during the WEFMAX meetings. Schedules have become very tight during these meetings. We are taking a 'water cooler' approach to discussing the new messaging should it be received before the WEFMAX meetings. Our workgroup members hope to get thoughts and ideas of the applicability / impact of the message.

Recommendation:

We will attempt to reengage our workgroup members once the new messaging has been provided to our workgroup. We also are looking towards how to address our second charge to engage MAs in the action plan for engagement and support of the Water Advocates program.

MA LEADERSHIP WG, LED BY JENNIFER LACYMAYR:

The Leadership Development Work Group (WG) was tasked with assessing the Leadership training needs of Member Associations (MAs) and recommending products for MA use in 2013-2014 HOD year.

Continuation of the Committee in HOD year 2014-2015 was granted to allow us to continue with production of tools for MA use on Leadership Development. The top areas of need for Leadership Development as determined through a survey distributed by the HOD (2014) are as follows:

- 1. Expanding member engagement and retention (43%)
- 2. Preventing burnout of volunteers (40%)
- 3. Strategic planning (37%)

WEF Delegates' Report

continued from page 11

<u>Plan:</u>

Throughout the year we have been working on a webinar series based on the **Membership Recruitment & Retention Guidebook**, **January 2014 (4th edition)** created by a previous HOD WG. We have modified and expanded this guidebook into a series of PowerPoint presentations. We have broadcast these as a live webinar series, which was recorded, and then placed on the WEF Resources web page for others to view at their leisure. As of March 12, 2015 all but one webinar has been broadcast as detailed below:

A link to view the past webinars is http://www.wef.org/Members/page_ma_detail.aspx?id=6442451557

Outcome of Webinars:

- Lots of MA examples and testimonials included in webinars.
- Webinars were very interactive with quite a bit of Q&A and back and forth with the audience
- Kelsey set up pop-up survey questions that were pushed out during the webinar to facilitate discussion
- Additional survey questions were asked of participants when logging off webinar, provided suggestions for future topics
- Majority of participants heard about webinars via email blasts
- Almost all participants found the webinars helpful
- Webinars were held at noon Eastern Time, which survey showed was a good time (during lunch)
- MAs still need help. Additional topics requested:
 - o Strategic Planning
 - o Capital Planning
 - o Asset Management
 - o Public Outreach
 - o Where to find detailed examples of how to get started

Chapter	Title	Number of Participants	End of Webinar Survey Responses
Chapter 1 & 2	Membership Recruitment & Retention	50	19
Chapter 3	Burnout	13	8
Chapter 4	Operator Engagement	41	14
Chapter 5	Students & Young Professionals	32	11
Chapter 6	Community Outreach	TBD	TBD

The committee is currently working on an update to the **Membership Recruitment & Retention Guidebook**, January 2014 (4th edition) to provide a 5th edition. We plan to have this finished before WEFTEC.

Workgroup's Request to the Steering Committee:

The work of this workgroup will be far from complete by the time WEFTEC 2015 arrives. We would appreciate input from the steering committee for consideration/discussion to make this a standing committee.

Dale Kocarek, Senior WEF Delegate, *dale.kocarek@stantec.com (provided WEF Delegate Update)* Doug Clark, Junior WEF Delegate, *douglas.clark@bgohio.org* Tom Angelo, Junior WEF Delegate, *tangelo@munitreat.com*

WEF Delegate Vacancy 2015-2018

The OWEA Executive Committee will be appointing a new WEF Delegate to represent OWEA on the WEF House of Delegates in June 2015. This appointment is open to any current WEF/OWEA member in good standing. The successful candidate would be one who has shown past interest in positively supporting OWEA and WEF by serving on committees, serving on an Ohio Section Executive Committee, serving on OWEA's Executive Committee, or other relevant service. The position would require a 3-year commitment to serve on the WEF House of Delegates. The position would start in October 2015 and serve through WEFTEC in 2018. The successful candidate will replace Doug Clark who is completing his HOD term. To learn more about House of Delegate responsibilities, please contact Dale Kocarek or Doug Clark.

If interested, please send an email with appropriate supportive information by May 29, 2015 to: Dale Kocarek, WEF Delegate, at *dale.kocarek@stantec.com*

WEFTEC 2015



ONE WORLD ONE WATER. ONE EVENT.



88th Annual Water Environment Federation Technical Exhibition and Conference

September 26–30, 2015 McCormick Place, Chicago, Illinois USA

Register Today. www.WEFTEC.org

Free Exhibit Hall Pass & Free Bus Ride for OWEA Members Reserve Your Seat on the Bus to WEFTEC 2015 on September 29th

OWEA will provide three buses from Ohio to give members the opportunity to participate in the 88th Annual Water Environment Federation Technical Exhibition in Chicago, on September 29th. WEFTEC is offering free admission to the Exhibition (preregistration required). With complimentary Exhibition registration, this will offer up to 150 members the chance to go to Chicago WEFTEC for a day for free. 4-6 Hr travel time one way. Snacks, soda, water, and a box dinner will be provided.



Date: Tuesday, September 29, 2015

Departure and Return Locations

Northwest: Findlay (Wal-Mart) and Maumee (Meijers), OH

Northeast: Richfield, OH at the Days Inn and Suites

Southwest: West Chester, OH at BL Anderson Parking Lot

Members must complete the complimentary exhibition registration (*http://www.weftec.com/Register/*) prior to registering for the bus transportation. You will need your WEFTEC registration number.

Bus registration at *www.ohiowea.org* under the Event Registration tab.

Not a member? Visit http://www.ohiowea.org/memberships.php.

Not A Member? It's a great reason to join OWEA!

Section Reports



SEOWEA Fred Smtih, President

Hello to my fellow Southeast Section members. Spring is finally here and with everyone's busy schedules, we were still able to have successful meeting attendance.

February 12th section meeting plant tour was held at City of Columbus Southerly WWTP. We had around 45 attendees for this meeting and great presenters from the City of Columbus. Topics covered were:

Columbus Southerly WWTP Process Update by Jeff Hall Local Discharge Limits and Beneficial Reuse of Biosolids by Jeff Bertacchi

City of Columbus OARS Tunnel Update by Greg Fedner *Columbus Biosolids Reuse Alternatives* by Brandon Fox

The City of Athens hosted the section meeting on April 9th and attendees had the privilege to take a tour of the City of Athens WWTP. In the afternoon, we headed to the Athens Community Center for meeting and lunch. OWEA President Michael Frommer presented the *OWEA Strategic Plan Update*, so thank you to President Frommer for spending the afternoon with us. Additional presentations were given by Scott Stearns, Strand Associates; Kris Ruggles, Strand Associates; and Tyler Linton with Great Lakes Environmental Center, Inc.

Upcoming meetings:

- May 4, SE LAC Quarterly Meeting at YSI, Inc.
- May 21, Section Meeting

Thank you Southeast Section members and volunteers for making our events such a great success.

Fred Smith, smithfj@cdmsmith

Education and Networking by OWEA's Sections

OWEA is a volunteer driven association with well over 2000 members and is divided into four sections, with each section having its own governing structure. Numerous educational and networking events are conducted throughout the year, with each section managing its own events.

In 2014, there were 53 successful events coordinated by the four sections. The determination and dedication derived from Section EC members, committee members, and volunteers is outstanding.

How many events did each section hold in 2014?

- ♦ Northwest 7
- ♦ Northeast 20
- ♦ Southeast 10
- ♦ Southwest 16

If you are interested in being involved with one of the OWEA Section committees, or volunteering to help achieve the mission and goals of the association, you can learn more by visiting *www.ohiowea.org*.



NEOWEA Denise Seman. President

The Northeast Section held the 2015 Industrial Pretreatment Seminar on February 19th and had a full house for the event – excellent job on this session by our Industrial Pretreatment Committee. This meeting had 238 attendees, plus 22 exhibitors. The meetings could not run as well as they do without the hard work of the NE Executive Committee, committee chairs, members, and our many volunteers that assist with all of the details that make the events so well received.

We eliminated the tour in March, due to numerous requests to NOT have people traipsing around in the normally poor weather. We will be offering other venues over the course of the year, so there will be plenty of contact hours available. The Watershed Seminar in April filled up quickly, thus we may need to start looking for a larger venue to house this well attended meeting. The NE Biosolids Seminar on April 30th was well received. Mike Welke did another outstanding job with this agenda! Watch the OWEA calendar for future Northeast Section events.

The NE Section once again participated in the Goodyear STEM Career Day at the University of Akron on April 18th, as part of our public outreach. Many thanks to our volunteers for going out and spending the day to talk about our industry. Special thanks to Kathy Richards for putting together the hands-on demonstration for this event.

Don't forget the annual NE Section Business Meeting in May, and our Bio-massters Golf Outing in July!

This will be my last message as NE Section President. It has been a great experience as I have moved through the chairs over the last several years. I know the section will be in excellent hands, as the current Executive Committee is phenomenal and I cannot begin to thank them for all of their hard work and dedication. Special thanks to the City of Youngstown for allowing me the time to participate in this great experience . . . especially my superintendent, Tom Mirante III.

Thank you for allowing me the opportunity to be a member of the NE Section Executive Committee.

Denise Seman, dseman@cityofyoungstownoh.com



Section Reports





It is finally Spring! In my personal world that means a lot of baseball and softball action. Professionally it means we are "rounding third and heading for home" on another SWOWEA year! But that does not mean we are slowing down. We have a lot of great activities planned and that means a lot of educational opportunities for you. Keep your eye on the following upcoming events:

- May Section Meeting will be at the City of Harrison on May 21st. Please make your reservation today.
- The Young Professionals Committee will be very active in the coming months: Distillery tour on May 7th, tour of the Springfield WWTP and EHRT on June 4th, ORSANCO Ohio River Sweep on June 20th, tour of the green infrastructure features at the Cincinnati Zoo on July 16th, and volunteer water quality sampling and lab testing now through October.
- The Collection Systems Committee will be holding their inaugural meeting in Lebanon in early June.
- The Plant Operations Committee "Almost Free" Seminar is scheduled for June 4th in Greene County.
- Lab Analyst Committee meeting is scheduled for July 16th at YSI.

For all the latest you can find us at www.swowea.org.

One more "Thank You!" as my year as the SWOWEA President begins to wind down, I want to take this opportunity to say "Thank You!" to the membership, for giving me the honor and the privilege to serve. It has been a great year! It has been a year full of leading and learning. The leading was the easy part, as the Executive Committee is made up of superb wastewater professionals who take their responsibility seriously and do what they need to do. It was mostly another year of learning. It is hard to imagine that after progressing through the leadership chairs in our Section, there is still a lot to learn about the wonderful things this organization has done, and continues to do. I want to take one more opportunity to thank the Executive Committee, our Committee Chairs and members, and our sponsors for all you do. I am proud to be associated with all of you!



NWOWEA Joe Tillison. President

The Northwest Section held a section meeting in Fostoria on March 26th. The meeting was well attended with nearly one hundred people. Tours of the Fostoria WWTP and Poet Bio Refinery were held in the morning and technical sessions, awards, and a brief business meeting in the afternoon.

Paul Swartz was presented the Moe Swaisgood Award for outstanding excellence in collection systems. Paul is in charge of the wastewater collection and water distribution departments for the City of St. Mary's. Landry Sheets received the Max Phillips Award for demonstrating excellence in the field of wastewater treatment plant operations. Landry is the wastewater superintendent of the Village of Pemberville. Special thanks go out to everyone that made this meeting a huge success.

I would like to congratulate the following science fair winners:

- Katlyn Westly from Paulding Exempted Village School District won Ohio Northern's Science Fair with project "Is your beautiful lawn a contributor to the Cyanobacteria problem?"
- Michael Herman Schmenk from Patrick Henry School District won The University of Toledo's Science Fair with his project "Comparing nutrient content of tile water and ditch water".
- Tajasia Amathi and Samanvith Thotapolli from Heritage Elementary School were co-winners for their project *"Hydropower"* at the OSU Marion Science Fair.

A big thanks goes out to all the OWEA members who donated their time to help judge these events.

The next May Section Meeting/Golf Outing will be held May 20, 2015 in Delta. Technical sessions will be held in the morning, and the golf outing or a plant tour of the Delta WWTP are offered in the afternoon. More information can be found at *www.ohiowea.org*.

If you have any suggestions, comments, or want to volunteer, please contact me.

Joe Tillison, joe.tillison@bgohio.org

Tom Brankamp, tom.brankamp@strand.com

2015 OWEA Workshop Dates



Collection Systems Workshop - May 14, 2015, Nationwide Conference Center One Water Utility Management Workshop - August 18, 2015, Nationwide Conference Center Plant Operations/Lab Analysts Workshop - October 21-22, 2015, Nationwide Conference Center Watershed Workshop - November 12, 2015, OSU's Ohio Union

Biosolids Workshop - December 3, 2015, Nationwide Conference Center



Committee Reports

SAFETY HAS NO BOUNDARIES

by James Graham, Safety Committee Co-Chair

As I close this chapter of my life and move on into another, I realized that no matter what field of expertise I am in, I am reminded that safety has no boundaries. After working as a maintenance technician in the wastewater field for the last seven years, I am now moving into the electrical field at The City of Bowling Green. I will miss the friends that I have made within OWEA as I will not be able to attend nearly as many events as I have in the past. I am also stepping down as State Safety Committee Co-chair and Northwest Section Safety Representative at this time. I want to thank everybody for everything they have done for me throughout my journey and I thought this article would be appropriate.

What is Arc Flash? An "arc flash" is an electrical short circuit that originates from an exposed live conductor, and then travels through the air until it reaches another conductor or the ground. Arc flash happens when there is a breakdown of electrical resistance (or impedance) in the air surrounding a conductor. If there is enough voltage present in the conductor while air resistance is low, the voltage can make its own low-impedance path that arcs through the air and straight to the ground, or to another conductor nearby.

Are Arc Flash and Arc Blast the same thing? It is easy to use the terms interchangeably, but arc flash and arc blast are actually two different things. You can think of them as the cause (arc flash) and effect (arc blast). When a short circuit (or arc flash) occurs, it can often cause arc blast, a type of highly dangerous electrical explosion.

What does Arc Blast do? There are plenty of possibilities with arc blast, and none of them are good. To begin with, it gives no warning, so there is no time to escape. Pressure waves generated by an arc flash explosion can carry a force up to thousands of pounds per square inch, which is powerful enough to knock down or throw nearby workers, and cause damage to the eardrums, lungs, brain, and other organs. Other effects of arc blast include:

- *Extremely high temperatures*. The heat and flames generated by an arc blast can reach temperatures of up to 35,000°F. This is enough to vaporize metal components, as well as cause life-threatening burns to personnel in the immediate vicinity.
- Shrapnel from exploded equipment. The explosive force of an arc blast can turn metal objects into high-speed shrapnel, which threaten to seriously injure or kill workers in the general area of the explosion.
- Damage to eyesight. Arc blasts often create highintensity light flashes that are capable of causing both temporary and long-term vision problems in personnel whose eyes are not properly protected.

Is it possible to recover from an Arc Flash or Arc Blast incident? While it is entirely possible for a person to recover from the effects of an arc flash or arc blast, it is likely that the process will be a long one. It is not unusual for arc blast burn victims to require months, and even years, of ongoing medical treatment (including skin-graft surgeries). Arc blast victims face extended work absences during the recovery process, and are sometimes unable to return to work altogether. In many cases, quality of life is not able to return to what it was before the arc blast incident. How do Arc Flash incidents affect businesses? In addition to financial and legal consequences like steep OSHA fines, personal injury lawsuits, costly repairs and temporary facility shutdowns, arc flash incidents can also rob companies of employees on a temporary or permanent basis, depending upon whether or not victims survive and can return to work post-recovery. The morale of other employees also suffers greatly, as it can be extremely traumatic for individuals to witness an arc flash incident resulting in the injury or death of a coworker.

How can Arc Flash injuries be prevented? There are several steps that employers can take to reduce the risk of arc flash/arc blast injury to employees.

- 1. **Training:** Ensure that employees are thoroughly trained in safe work practices and procedures, in accordance with OSHA guidelines.
- 2. **Proper Signage and Labeling:** One of the most important elements in battling arc flash is letting employees know exactly where risks exist. Warning labels and sign-age on power panels, high-voltage machinery and power lines are extremely important, and can help to ensure that employees take the proper preventive measures before beginning work on or near potentially dangerous components.
- 3. **De-Energizing:** Whenever possible, de-energize high-voltage equipment before beginning maintenance and repair work.
- 4. **Personal Protective Equipment:** Equip employees with a level of Personal Protective Equipment (PPE) that is appropriate to the tasks they perform. This can include, but is not limited to, flame retardant over-clothing, arc flash hoods, face shields, arc flash gloves, and arc suppression blankets.



Image above shows proper safety clothing by OSHA standards.

Jim Graham, City of Bowling Green Safety Committee Co-Chair

Cableorganizer.com,. (2015). What is Arc Flash?. Retrieved 24 April 2015, from http://www.cableorganizer.com/articles/what-is-arc-flash.html osha.gov,. 'Electric Power Etool: Personal Protective Equipment (PPE) - Flame-Resistant (FR) Clothing'. N.p., 2015. Web. 24 Apr. 2015.



LABORATORY ANALYSIS COMMITTEE

by Denise Seman, Chair

Hi Everyone! I don't know about you, but I am so happy to see warm weather this year . . . I could do a happy dance.

The LAC will be participating in the Ops Challenge Event that will be held at the annual conference in June. We are looking for judges for this event, so please let me know if you are interested in helping out. The lab portion will be taking place on Monday, along with Process Control. The remaining portions will take place on Tuesday.

The annual Plant Operations/Lab Analysis workshop (POLA) will be on October 21st and 22nd. I look forward to seeing many of you there.

As always, if there any suggestions for topics that you would like to have presentations on, please let me know. Hands on workshops truly must be done at the section level, the sheer number of attendees at the Lab workshop prohibits us from holding them there.

SW LAC - Jim Davis and Karen Tenore

On February 5th the SW LAC meeting was held at Dayton's WRF and offered 2.0 contact hours. Topics covered were:

- What Happens to My Samples in the Lab?
- Laboratory Analysis of Aeration Basins
- ♦ That Smell You Smell

On April 23rd we had a meeting at Greene County. The topics included:

- ♦ *Method* 1664 *From LLE to SPE, Tips and Troubleshooting*
- Use of Innovative Enzymatic Methods for the Determination of E. Coli and Fecal Coliforms for Waste Water and Total Coliforms, E. Coli and Fecal Coliforms for Reclaimed Water
- A Summary of Past and Potential US EPA Method Update Rules

Future meetings will be July 16th at YSI and October 8th at Cincinnati MSD. Visit *www.ohiowea.org* to learn more and register.

To inquire about being added to our email list or to get information about attending, hosting, sponsoring, or presenting at a future LAC meeting, please contact:

Karen Tenore, City of Dayton WRF karen.tenore@daytonohio.gov, 937.333.1845

Jim Davis, Montgomery County Water Services davisji@mcohio.org, 937.496.7051

Committee Members: Lynette Hodnicki, City of Fairfield Lori Kyle, Greene County Teresa Shinkle, Greene County Gregg Mitchell, City of Sidney Roger Rardain, City of Fairborn Dr. Robert Smith, YSI

<u>NE LAC –Bev Hoffman</u>

I hope to have four meetings this year for The Northeast Section of the Lab Analyst Committee. We started the year off by having our first meeting on April 10, 2015. Alloway Labs hosted this meeting with presentations on Free Cyanide, Low Level Mercury, and a tour of the laboratory.

If anyone has a topic they would like to have presented or knows someone who would like to present a topic, please let me know. If you would like to be added to the NES LAC membership directory and receive automatic email updates for training events and other news please email me.

Beverly Hoffman, nesowealac@gmail.com

<u>SE LAC – Melodi Clark</u>

Spring is finally here! March 31st was our first LAC meeting of 2015 and it was hosted by Alloway Labs. It was a great success and we saw a lot of new faces. I want to give a special thanks to Kim Riddell for setting this up. May 4th was our second meeting and YSI hosted this one. This meeting offered five contact hours again at no cost. YSI provided lunch from Young's Dairy. We toured of the Yellow Springs Wastewater Treatment facility. We also had a number of speakers on several interesting topics.

For the remaining two meetings of the last two quarters I am working on holding one event down in the lower part of the Southeast Section and then bringing the last meeting of 2015 to Columbus, either at the Surveillance Lab or Jackson Pike WWTP. I am hoping to see an increase this year in attendance and get a lot more of my fellow lab people out and involved. Hope to see you all at the next meeting!

<u>NW LAC – Bridget Shiets</u>

Planning some fun and interesting meetings for this year, hope to see everyone there!

If you have any topic ideas or presentations you may want to present at future meetings, please contact Bridget using the email below:

Bridget Shiets, wwtplab@cityofbellevue.com

Lab Analysis Committee Contact Information State Chair

Denise Seman, 330.742.8820, dseman@cityofyoungstownoh.com

Northeast Chair

Beverly Hoffman, 440.446.4228, nesowealac@gmail.com

Southeast Chair Melodi Clark, 614.645.1239, mlclark@columbus.gov

Northwest Chair Bridget Shiets, 419.419.7514, wwtplab@cityofbellevue.com

Southwest Chair Jim Davis, 937.496.7051, davisji@mcohio.org Karen Tenore, 937.333.1845, karen.tenore@daytonohio.gov

Join Your Section LAC (Laboratory Analysis Committee)

Certified wastewater analysts are a valuable resource to the industry. Network with and learn from other certified wastewater analysts in your area. Learn how to become certified by contacting the LAC Chair in your section.



Committee Report

GOVERNMENT AFFAIRS COMMITTEE UPDATE

by Dale Kocarek, P.E., BCEE, Chair

Annual Workshop Summary

On behalf of myself, John Owen, and the rest of the OWEA Government and Regulatory Affairs Committee (GAC), I want to thank all of our presenters and attendees at the workshop held on March 5, 2015.

The workshop was held at the Nationwide Hotel and Conference Center (previously known as the Conference Center at North Pointe) in Lewis Center. There were 205 registrants for the 6.0 contact hour/PDH event. While not the highest number of attendees ever for an OWEA specialty workshop, an impressive showing.

This year's workshop featured presentations ranging from regulatory/governmental updates to specific discussions involving topics such as an update on Ohio EPA's Nutrient Technical Advisory Group involving the Stream Nutrient Assessment Procedure (SNAP), formerly known as the TIC (Trophic Index Criterion) by OWEA's GA Committee members Guy Jamesson and Elizabeth Toot-Levy. Ohio EPA Director Craig W. Butler returned this year and provided an update on Ohio EPA's direction and goals. Following Director Butler, Karl Gebhardt, Chief of Ohio EPA's Division of Surface Water, provided a Division update. Additional highlights of this year's workshop included Deborah Nagel, Director of US EPA's Water Permits Division. She gave an EPA Office of Water Program update. Also presenting at this year's workshop was Ted Boggs of Vorys, Sater, Seymour and Pease, LLP, whose presentation provided an overview of federal and state court decisions involving wastewater systems, and Jason Fyffe, Supervisor of Ohio EPA Storm Water Unit, who gave a Storm Water update.

Also attending this year's workshop was Claudio Ternieden, Water Environment Federation's Director of Government Affairs, who gave an update on wastewater issues on Capitol Hill, David Rutter of MORPC, whose presentation entitled "Sustaining Scioto" provided an overview of the effects of climate change on the Scioto River.

Should any of the membership have topic suggestions for next year's workshop, which will be held on March 17, 2016 at the DoubleTree Columbus located in Worthington, please contact Chair Dale Kocarek or GAC Vice Chair, John Owen.

Ohio Water Resources Council

Recently I was named by President Frommer to be OWEA's representative to the Ohio Water Resources Council, which met at the Ohio EPA Central Office on March 31, 2015. The Council was formed by Governor Voinovich and is authorized under ORC 1521.19 to provide coordination of water issues amongst the various state agencies. The meeting was led by Brian Hall, Leader of the Strategic Action Plan and Assistant Chief in the Division of Surface Water at Ohio EPA. The purpose of the meeting was to review the OWRC Strategic Action Plan for 2015-2019 and discuss funding of projects and initiatives. During the meeting several proposals were presented and voted on. These included approval of the OWRC Action Plan, approval of the budget and assessments, MORPC's Ohio Balanced Group Regional Planning Project, and Regulations and Technical Guidance for Sealing Unused Water Wells and Boreholes.

NACWA and WEF's FY 16 Draft Letter of Support

On the next page is the text of the letter of support that OWEA and other Member Associations signed in advance of National Water Policy Forum, Fly-in & Expo, held April 13-15, 2015 as part of Water Week. As you can see, there is continued interest in the area of financing infrastructure.

OWEA at the National Water Policy Forum, Fly-in & Expo

The OWEA Government and Regulatory Affairs Committee sent a team to visit with Ohio's US legislators on April 13th and 14th. Chair Dale Kocarek, Vice Chair Doug Clark, Membership Chair Tom Angelo, and Executive Manager Judi Henrich visited with 13 of Ohio's 18 legislative offices.

Senator-OH	Rob Portman
Rep OH-HD 01	Steve Chabot
Rep OH-HD 02	Brad Wenstrup
Rep OH-HD 03	Joyce Beatty
Rep OH-HD 05	Robert E. Latta
Rep OH-HD 06	Bill Johnson
Rep OH-HD 07	Bob Gibbs
Rep OH-HD 08	John A. Boehner
Rep OH-HD 09	Marcy Kaptur
Rep OH-HD 11	Marcia L. Fudge
Rep OH-HD 12	Pat Tiberi
Rep OH-HD 13	Tim Ryan
Rep OH-HD 15	Steve Stivers

The OWEA team attended briefings, water policy forums, USEPA regulatory updates, and a congressional reception where Ohio's Bob Gibbs (HD 07) and Robert Latta (HD 05) spoke on challenges and opportunities facing the water quality community.

Dale Kocarek, P.E., BCEE dale.kocarek@stantec.com, 614.486.4383



Felix Castro (Defense Legislative Fellow - Office of Tim Ryan OH HD-13) with OWEA's Tom Angelo, Doug Clark, and Dale Kocarek



Tom Angelo, Congressman Robert Latta (OH HD-05), Doug Clark, and Judi Henrich at the Congressional Reception

Dear Chairman Murkowski, Chairman Calvert, Senator Udall, and Representative McCollum Subcommittee on Interior, Environment and Related Agencies Appropriations Committee

As Congress prepares the Fiscal Year (FY) 2016 Appropriations bill for the Environmental Protection Agency (EPA), we urge you to maintain full funding for the Clean Water State Revolving Fund (CWSRF) at \$1.450 billion, and provide \$25 million for the Water Infrastructure Financing Innovations Act and \$13 million for Integrated Planning pilot initiative to ensure communities have sufficient resources to meet their obligations under the Clean Water Act (CWA).

The CWSRF is a key pillar of the Federal government's commitment to help ensure clean water is available to all Americans. It has provided over \$100 billion in low-cost financing to communities since it was established in 1987 and it is the only federal program that provides low-cost financing for any sized community to help meet obligations under the CWA. Just last year, Congress renewed its commitment to the CWSRF when it overhauled key program features.

The need for significant investment in our water and wastewater infrastructure continues to outpace current resources. The American Society of Civil Engineer's 2013 Report Card on America's Infrastructure grades the state of wastewater infrastructure at a D. Indeed, over the past year, headlines across the country have reported physical injuries as well as transportation and business disruptions caused by major water and sewer main breaks. The latest EPA data indicate that communities need \$300 billion over the next twenty years for investment in the basic infrastructure (pipes and treatment plants) that delivers clean water and protects public health to their residents.

In addition to the daunting investment challenge needed to replace and upgrade basic infrastructure, communities face increased CWA regulatory and enforcement pressures on a host of issues that only exacerbate the investment challenge. These pressures include wet weather enforcement, pre-treatment standards for dental offices, more stringent standards related to nutrient pollution, and new Clean Air Act standards for sludge disposal. Now is not the time to cut spending for the CWSRF.

Last year, Congress established the WIFIA program as a way to leverage additional capital to help with this financing challenge. WIFIA is viewed as a supplement and not a replacement to the CWSRF, and funding for it should not come at the expense of the CWSRF, however authorizing \$25 million for WIFIA in FY16 will enable communities to begin accessing this capital as quickly as possible.

Recognizing that daunting infrastructure investment challenges coupled with increased regulatory pressures is leading to affordability challenges for many communities, EPA launched the Integrated Municipal Stormwater and Wastewater Planning Approach (referred to as Integrated Planning) in 2012. The concept behind Integrated Planning is to help communities establish CWA regulatory priorities and implementation schedules that are affordable for ratepayers. Developing Integrated Plans can be quite costly, however, which is why a bi-partisan group of Members have supported funding to help communities develop these plans. EPA has requested \$13 million to support this effort and we urge Congressional Appropriators to support this request.

By investing in clean water, Congress will ensure the economy continues to grow and jobs continue to be created. A 2014 study entitled the National Economic and Labor Impacts of the Water Utility Sector reports that over the next decade, the water and wastewater sector will contribute over \$500 billion to the national economy. According to the Outdoor Industry Association, Americans spend over \$120 billion annually on fishing and water sports activities, supporting over four million jobs as part of the outdoor recreational economy – spending that relies critically on the availability of clean water. The U.S. Department of Commerce estimates that each job created in the local water and wastewater industry creates 3.68 jobs in the national economy and each public dollar invested yields \$2.62 dollars in economic output in other industries.

It is clear that federal investment in clean water returns significant benefits to our economy and we urge you to support these important clean water programs.

The Ohio Water Environment Association signed this letter along with 30+ water environment groups from across the United States.

Ohio

Committee Report

PLANT OPERATIONS UPDATE

by Kim Riddell and Joe Tillison, Co-Chairs

Planning is in full swing for the 2015 Operations Challenge which will be held during our annual conference at Kalahari on June 22nd and 23rd. We are happy to announce that the event will again be an invitational with up to 12 teams being hosted. We will save at least six spots (rumor has it there are already five planning to attend) for Ohio teams until the deadline of May 1, 2015 at which point all remaining available spots will become open on a first come first serve basis, so register early to reserve your spot for this exciting event! Registration is open and contest rules are available on the website so check it out or contact Kim or Joe to be put on a mailing list for all pertinent information.

The 2015 Plant Operations/Laboratory Analysis Workshop will be held at the Nationwide Conference Center (formerly North Point Conference Center) on October 21st and 22nd. We are working on a great line-up again this year! Topics will include nutrient removal, asset management, energy savings, emergency operations, reliability centered maintenance, industrial operations, Ohio EPA updates on phosphorus optimization and certification and, of course, the return of our much anticipated social hour round table forum. Save some money in the training budget and be sure not to miss this great opportunity to learn from some nationally recognized leaders in the industry, as well as some of Ohio's "home-grown" bests! We look forward to seeing you there!

If you are interested in putting a team together for Operations Challenge, becoming a member of the committee, or assisting as a judge/volunteer for Operations Challenge, please contact Kim Riddell or Joe Tillison.

Kim Riddell, *kim.riddell@alloway.com*, 419.234.4507 Joe Tillison, *JTillison@bgohio.org*, 419.354.6274

PUBLIC EDUCATION UPDATE

by Tyler Linton, Chair

OWEA Public Education and Outreach Funding Assistance Request (EOFAR) Program

Does your local school or student group need help in funding a field trip to the water reclamation plant or to plan a water career day? The EOFAR Program was established by the Public Education Committee to ensure continued success of OWEA's commitment to public education and outreach to the citizens of Ohio of all ages; particularly K-12. The average funding level is \$500 and funds are available on a first come, first serve basis. Visit the OWEA Public Education Committee web page for more details and application link. *http://www.ohiowea.org/public_ education.php*

As of April 30th, the following funding requests have been granted for 2015.

- Ursuline College \$375.00 Support two undergraduate students presenting their stream and reservoir water quality research
- City of Dayton \$1000.00
 Water Career Conference for high school sophomores, juniors, and seniors - funding to help bus students
- ♦ Camp Lazarus Alumni Association \$500.00 Fund a permanent STEM laboratory on camp for use by scouts and other users of Camp Lazarus. Wastewater treatment and water quality is an important concept that will be emphasized in the STEM lab
- Boy Scout Troop 4002 \$1000.00
 Educational Activity/Event, Stream Monitoring Activity, Field trip to OSU's Stone Laboratory on Lake Erie

Chair, Tyler Linton, tlinton@glec.com

OWEA DONATES WILO PUMP

OWEA purchased the WILO Pump in 2010 to be used for practice and competition as part of the Operations Challenge maintenance event. The pump was used for several years. In 2014, the WEF Operations Challenge requirements changed, which necessitated the purchase of a new Godwin Pump. The OWEA Executive Committee opted to donate the WILO pump to an educational institution.

Ed Nutter, past OWEA Safety Chair from the City of Newark, found a home for the WILO pump at the C-TEC Career & Technology Education Center in Newark.

On February 26th, Jim Graham, OWEA Safety Co-Chair, delivered the WILO pump to C-TEC. We hope this pump will be useful in educating future water quality professionals.



Jim Graham (brown jacket, City of Bowling Green/OWEA) demonstrates the WILO FA10.33 Pump with the complete set-up to C-TEC students.



(I-r) Ed Nutter (City of Newark/OWEA) shakes hands with Kelly Wallace, Director of CTEC

Member ACWA Update

ASSOCIATION OF CLEAN WATER ADMINISTRATORS

by George Elmaraghy, Stantec Consulting

I attended the Association of Clean Water Administrators (ACWA) Mid-Year Meeting (March 8-10). The meeting was attended by most of the states and interstate water directors and the USEPA water program leadership. Current controversial issues were discussed and a lot of information was released during this meeting.

Waters of US:

Ken Kopocis, Deputy Assistant Administrator at USEPA, concentrated his remarks on the Waters of US Rules. These rules intend to clarify the Supreme Court decision on the waters of US issue (nine Justices drafted five conflicting opinions). Mr. Kopocis indicated that USEPA conducted 400 public meetings and received more than one million comments on these rules. He emphasized that the rules will be completed this spring and will become final later this year.

However, Counsels for the House and Senate committees indicated that Republican members have major concerns about the scope and clarity of these rules. Senator Inhofe, Republican from Oklahoma, is considering the introduction of a bill to deal with the waters of US issue, while the House Republicans are still deliberating on how to fight these rules.

Nutrients:

Ken Kopocis announced that dealing with nutrients is a long term issue. However, USEPA will finalize algal toxins testing protocol, health advisory levels, recommended treatment technology for toxins, and appropriate response for various toxins levels before this summer. USEPA expects that the advisory level will be below the World Health Organization level (1ug/l).

The USEPA Director of Science and Technology indicated that recent studies show that the common belief that excessive phosphorous is the only driving force in the growth of harmful algae bloom is incorrect. Based on recent information, USEPA believes that nitrogen plays an important role in the development of harmful algae blooms in fresh water bodies.

USEPA indicated that currently 12 states have some approved nutrient criteria. Eighteen other states are in the process of developing nutrient criteria.

USEPA will pick several watersheds to channel resources to control nutrients. Also, USEPA will develop a list of possible measures for controlling nutrients.

Three possible approaches to control nutrients in point sources were discussed: 1) technology limits, 2) apply the narrative criteria, or 3) develop a waste load allocation.

USEPA is in the process of developing a strategy for controlling nutrients in point sources. This strategy will acknowledge the need for using a phased approach.

The Republican counsels from the House and Senate objected to the idea of opening the Clean Water Act to include provisions to control non-point sources.

NACWA voiced concern about the new stringent ammonia water quality standards, which were developed to protect mussels and unionid species in streambeds. NACWA indicated that WWTPs will need to upgrade their treatment system in order to meet the new ammonia standards. Also, small communities with lagoon systems will be forced to abandon their lagoon system in order to meet these standards. Other concerns about the new ammonia standards are:

- 1. Some communities add ammonia to improve the efficiency of chlorine disinfection process. These communities will be forced to use alternative disinfection process.
- 2. Biological removal of phosphorous and nitrogen is a cost effective method to control nutrients but cannot achieve the new ammonia standards.
- 3. Determining if mussels exist or should exist, and whether the removal of ammonia will result in mussels returning can be expensive.

Permitting:

USEPA will publish draft NPDES permit rules this summer. Rules will deal with 13 items. The proposed rules will limit the administrative extension of expired NPDES permits to two years.

USEPA will issue a new enforcement framework that will contain a system to score the severity of violations.

USEPA will issue the bacteria standards implementation document soon. Also, USEPA intends to issue draft rules by the end of this year to control viruses using bacteriophage as an indicator. USEPA thinks that bacteriophage is a better indicator of illness than e coli. Communities may need to upgrade their disinfection systems in order to meet new requirements.

Stormwater:

USEPA has stopped working on the storm water rules. USEPA would like to avoid having national standards since each state is different. USEPA would like to concentrate their efforts on dealing with impaired water bodies, issuing permits in accordance with the approved TMDLs, and eliminating the permit backlog. Environmental groups are seeking mandamus to force USEPA to finalize these rules.

Infrastructure Financing:

The 2016 President's budget proposes to cut the Clean Water SRF by \$333 million compared to the 2015 budget. This cut was precipitated by the delay in completing the 2012 needs survey.

Affordability is a controversial issue and legislators are considering the introduction of a bill to clarify this issue.

There was not any funding allocated for WIFIA loans. Some legislators want to see how USEPA will administer this program before allocating money for loans grantees.

Integrated Planning:

The President budget includes \$13 million to help communities conduct integrated planning. Legislation is expected to address: grants, extending schedules, updating financial capability assessment and establishing a pilot program.

Kevin Weiss, Acting Chief of USEPA Municipal Branch indicated that states can extend the compliance schedule to reduce the financial impact. He admitted that USEPA has no procedure to determine financial capability and he indicated that the 2% affordability threshold should not be used as a rigid requirement.

George Elmaraghy, Senior Project Manager Stantec Consulting Services Inc. george.elmaraghy@stantec.com



Roll Call and Passings





ROLL CALL

Bob Brown retired on April 4, 2015 after 36 years in the wastewater treatment field. Bob began his career in Florida and after 5 years returned to his home state of Ohio in 1984. For the remaining 31 years, Bob served as the Manager of the Kent Water Reclamation Facility in Kent, Ohio. Along with several other committees and activities, Bob served six years on the NESOWEA Executive Committee, six years on the OTCO Board of Trustees, four years on the WEF "Operations"

Forum" Editorial Advisory Board, and ten years on the Ohio EPA Advisory Council of Examiners. He was the recipient of the OWEA Dean Stewart Award, the WEF Hatfield Award, and the Ohio DNR Cardinal Award. Bob was also instrumental in the first TMDL in the state of Ohio, which led to the Cuyahoga River Restoration Project that eliminated a one mile dam pool by bypassing the Cuyahoga River around the historic Kent Dam. Future plans include part-time work in the wastewater field, spending time with five grandchildren, and lots of hunting/fishing excursions.



Barb Browne will be retiring from the Metropolitan Sewer District of Greater Cincinnati, where she began working on January 27, 1985. Barb came from the field of teaching and now has some past students who are now co-workers with me at MSD. Barb has continued helping operators within MSD attain their Ohio EPA licenses and is a born teacher. She is also a musician and played the pipe organ and was choir director for the Salem Presbyterian Church for 30 years.

Barb is an Adjunct Instructor and teaches at Cincinnati State Technical and Community College, where she will continue teaching after retirement. She teaches seven classes in the EVET (Environmental Engineering Technology) department. Most operators can take two of her classes which help prepare them to take the Ohio EPA Class I exam. Barb has loved the past thirty years and has met many good friends, whom she will truly miss. She extends a "Thank you" to all for making her thirty years truly enjoyable!



Mark Livengood retired from public employment on November 30, 2014, having worked for Montgomery County for 13 years (1984-1990; 2007-2014) and the City of Troy (1990-2007). Mark held SWOWEA and OWEA Executive Committee positions throughout his career, including OWEA Annual Conference co-chair in 2000. Since retiring he has spent time attending the Big 10 Championship game, the Sugar Bowl, and BCS National Championship games.



Kevin Campanella, PE, has joined Burgess & Niple as Utility Planning Leader in the firm's Columbus, Ohio office.

With 21 years of experience in wastewater engineering, master planning and utility management, Kevin has led complex, largescale programs on both the public and private sides of the industry. At B&N, Kevin will expand the firm's utility planning and integrated solutions capabilities.

A recognized expert in asset management, Kevin has been a keynote speaker and Blue Ribbon Panelist for national asset management workshops. His work has been published in select national and international publications. His expertise also extends overseas to New Zealand, where he participated in an engineering exchange program as an asset management practitioner.

Kevin attended Cornell University where he earned a Master of Engineering and a Bachelor of Science in Civil and Environmental Engineering. He is a registered Professional Engineer and is an active member of the Water Environment Federation and the American Water Works Association.



Thomas Ungar, P.E., has joined the Cleveland office of Hazen and Sawyer as a Senior Associate. Mr. Ungar has 33 years of experience in environmental engineering, focusing on collection system and wastewater treatment plant improvements. Tom has a proven history of delivering innovative solutions and regulatory strategies that enable clients to save money on wet weather related issues. He is also a valuable resource for assisting the client determine the best

combination of funding and construction delivery options and has been involved in alternate delivery projects throughout Ohio.

Mr. Ungar was selected as a member of the Golden Manhole Award Society by OWEA, based on his experience with successful sewer collection system projects to reduce overflows or infiltration and inflow.

He holds a B.S. in Civil Engineering from the University of Dayton and is an active member of the Ohio Water Environment Association.



PASSINGS

Dennis James Konicki, 66, of Lakeside, OH died Friday, October 31, 2014 at Southwest General Hospital, Brunswick, OH.

He was born June 11, 1948 in Cleveland, OH the son of Frank and Christine A. (Misner) Konicki. He married Alice E. Drake on October 1, 1966 and she preceded him in death on July 26, 2002. Mr. Konicki retired in 2004 as the superintendant of the Ottawa County Sanitary Engineer Department. He was a member of the Ohio Water Environment Association from 1999 to 2004.

OWEA members may complete the Roll Call form at http://www.ohiowea.org/memberships.php Information regarding members who have passed away may be emailed to info@ohiowea.org



WELCOME NEW MEMBERS

January 2015 to March 2015

Kevin Aiken John Allen Greg Amshoff Seth Anderson Brad H Ault Joe Babcanec David Balogh Mike Battershell Heather Baum Steve Beemer JohnBender **Kelly Boreman** John Boyd Josiah Britt Jessica Callaway **Atemus Carter** Jeff Coffey Matt Curren

Tanny Curtis Adam Davis Mark Duplaga **Steve Ellington** Dante Fioriono **Deborah Flaig** Harrison Flinner Donna Friedman William Fussner Amanda Goodwin Jeff Gorman Andrew Green Alan Haines John Hall **B** Hardin Brian Haydu Paul F Hebbler Shawn Hefner

Gabe Heileman **Brandon Hine** Aaron Hixenbaugh Peter James Howard Michelle R Iannicca Joshua Jackson Rob Jirousek Angelina Joseph **Gregory Kemper** Elizabeth Kirby **Heather Kirkpatrick** Mel Kurtz James Lacko Christopher Lannan Matthew A Lascola John Lucas Herman Maruschke **Rick Maurer**

Christine McCarthy Grant Meczka Lee Mendrala **Christopher Miller Conrad Moeller Christopher Moore** Megan Muhar Erik Murlin Brian Neal Geno November Chad Michael Oberle Lynn Pedro Gary Raines Robert Ray Susan Riggins Cole Risner Bruce Rizzo John Rutter

Neila Salvadori **Debbie Schordock Craig Schroeder Cavan Smith Eric Soehnlen** Karen Sokolow James Sprosty William Standford James Stefancin Joe T Sykes Derek Tatar James Troike Ivan Valentic **Kevin Vander Tuig** Ken White Colin White Armand White Gary Wiest

Thank you for joining the Ohio Water Environment Association and the Water Environment Federation. We welcome your contribution to preserving and enhancing Ohio's water quality environment.

Visit http://www.ohiowea.org/memberships.php for OWEA membership information

OWEA's WEF Utility Partnership Program Member Utilities

- Avon Lake Municipal Utilities City of Canton WRF City of Celina City of Cleveland City of Columbus DPU City of Fairborn City of Harrison City of Lakewood
- City of Mansfield City of New Philadelphia City of Newark WTP City of Solon City of Steubenville City of Toledo DWR City of Troy City of Troy

City of Warren WWTP Clermont County Sewer District Fairfield County Miami County Northeast Ohio Regional Sewer District Southwest Licking Community W&S Dist.

The WEF Utility Partnership Program (UPP) is designed to allow Ohio utilities to join WEF and **OWEA** while creating a comprehensive membership package for designated employees. Utilities can consolidate all members within their organization onto one account and have the flexibility to tailor the appropriate value packages based on the designated employees' needs. Key Benefits Include:

- UPP is fully customizable, based on the needs of each utility, and a WEF team member will be on-hand to walk each utility through the enrollment process.
- ALL members at the utility will be enrolled, with synchronized begin and end dates, on ONE invoice, for an easy one-time per year payment.
- All members, who were already WEF members, retain original membership number, credit for all years of membership, and remain a full-voting WEF member.
- <u>ALL employees</u> at the UPP utility will be eligible for membership registration rates at WEFTEC, as well as the early-bird rate for Premium and Standard WEFTEC registration at any-time throughout the registration period. <u>ALL employees</u> at the UPP utility will also be eligible for member rates for the OWEA Technical Conference and Exposition, OWEA Workshops, and events.
- All employees at the UPP utility will be eligible to register for a WEFTEC Exhibition-only pass at NO-Charge.
- WEFTEC registrations can be included in the UPP Membership transaction, at the time of enrollment or can be grouped and submitted closer to WEFTEC.
- UPP also includes a special, NO-Charge membership for Public Officials designated by the Utility, at their discretion.
- Up to five new WEF/OWEA members can be added by the utility each year, at no charge for the first year of membership.
- UPP utility will be eligible for distributor pricing on all WEF products and services that's 40% off list pricing. In addition to traditional items this discount also extends to online learning in the new WEF Knowledge Center.
- UPP members will be eligible for special discounted registration for other WEF Conferences and events.



To learn about the benefits for your utility visit http://www.wef.org/UtilityPartnership/ Contact Amy Davis, amydavis@ohiowea.org, 614.488.5800 or Brittany Burch, bburch@wef.org, 703.684.2400 x 7213.

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🔈 Ohio EPA Update

ENHANCING OHIO EPA'S SERVICE TO BUSINESSES AND COMMUNITIES

by Craig Butler, Director, Ohio Environmental Protection Agency



Craig Butler

Dear Partners and Stakeholders:

As Director of Ohio EPA, I am responsible for ensuring we have strong regulatory programs to protect public health and the environment. An equally important responsibility of the Agency is providing our customers with access to technical and financial resources that will help them achieve and maintain compliance. With my own personal experience at Ohio EPA beginning in our Office of Pollution

Prevention, I have seen, first hand, the environmental benefits that come through education, outreach, and innovative approaches to promote stewardship.

Many of our regulated entities are familiar with the voluntary, non-regulatory programs we offer. However, many are not. Smaller businesses and communities have limited time to search for the resources and tools available to them, and can quickly get lost trying to navigate the Agency for information that is relevant to them.

One of my major initiatives over the next two years is to create a "one-stop shop" environment within Ohio EPA for customers seeking our technical and financial resources to help them achieve compliance. This approach will both enhance the way in which we serve our customers and improve our own internal operations through a more efficient, coordinated and strategic approach to administering resources. By realigning some of our key compliance assistance and funding programs here, I believe we also will be more strongly positioned to help even more regulated entities with a greater level of service.

I took the first step toward this goal early in June 2014, when I announced that Ohio EPA's Recycling and Litter Prevention Program would become part of the Office of Compliance Assistance and Pollution Prevention (OCAPP). This program supports source reduction, recycling, market development and litter prevention activities statewide, and I saw a natural connection between the functions of each to help build more sustainable practices within businesses and communities.

Today, I am pleased to announce another significant milestone, with the merger of our Office of Compliance Assistance and Pollution Prevention (OCAPP) and our Division of Environmental and Financial Assistance (DEFA). The new division will retain the name of DEFA; however, will provide a wider variety of services. Effective May 1st, DEFA will house several of the Agency's core programs that have supported business and community development for many years, with emphasis on:

 Administering our State Revolving Fund (SRF) loan programs to help communities construct and maintain wastewater and drinking water infrastructure. Over our 25 year history, Ohio EPA's SRF programs have facilitated loans totaling more than \$7.2 billion for construction and improvements to public wastewater and drinking water infrastructure. The new division will administer both the Water Pollution Control Loan Fund (WPCLF) and Water Supply Revolving Loan Account (WSRLA) programs.

- Providing technical assistance to help small community wastewater treatment plants improve operations and efficiency.
- Helping thousands of small businesses annually comply with environmental regulations through on-site assistance, help completing forms, training events, plain-English publications, and other services.
- Helping entities identify and implement pollution prevention (P2) measures that save them money, increase performance and benefit the environment.
- Providing funding for recycling, litter cleanup and scrap tire management activities, and identifying market development opportunities to support Ohio's efforts to recycle materials such as glass, plastics, rubber, and construction and demolition debris.
- Recognizing the outstanding efforts of businesses, communities and other entities making a commitment to environmental stewardship through our Encouraging Environmental Excellence (E3) Program.

The new DEFA will have a more proactive approach in reaching out to Ohio's communities and businesses to share information on our services. It is important to me that our regulated entities not only understand what resources are available, but that we make ourselves available to guide them through the process of getting help, so that we can more fully meet their needs.

This reorganization effort has required a significant level of planning, and I foresee the implementation process to fully bring everything together will take some time. However, I am confident that bringing these resources together under one division will not only improve our responsiveness, but also increase the level and range of services we can provide.

The goal of this letter and initial roll-out is to make our stakeholders aware of my objectives, and to assure you that our efforts are focused on better meeting the needs of our customers. To this end, I and my staff welcome your feedback. DEFA will be hosting webinars and meetings to provide information and discuss our progress. I invite you to join us at an upcoming event, details of which will be posted on DEFA's website at <u>http://epa.ohio.gov/</u> <u>defa/</u>. You also can contact Laurie Stevenson, my deputy director for business relations and chief of DEFA, at 614-644-2344 with questions. We appreciate your support and look forward to working with you as we move ahead.

Sincerely,

Cray w. Buth Craig Butler, Director

Ohio Environmental Protection Agency

OHIO EPA COMPLIANCE ASSISTANCE UNIT WASTEWATER MANUAL NOW AVAILABLE ON OHIO EPA'S WEBSITE

The Ohio EPA Class A Wastewater Training Manual, which contains everything you need to successfully pass the Class A certification test, is now available on Ohio EPA's website at *epa. ohio.gov/dsw/compl_assist/compasst.aspx#117033017-technical-resources*. The manual is a hard copy version of the training Ohio EPA's Compliance Assistance Unit has presented since the Class A wastewater treatment certification exam came into existence.

One new feature is the Activated Sludge Process Control and Troubleshooting Chart, which is part of the Control section of the manual. This flow chart is designed to systematically work through a treatment plant upset in order to identify the problem, determine methods for resolving the problem and return to compliance. In addition, an appendix to the Troubleshooting Chart titled "How Do I..." provides instructions for carrying out the necessary tests and analyses on which process control decisions are based.

The Activated Sludge Process Control and Troubleshooting Chart is also available as a separate download on the Ohio EPA website. Even though this chart is integrated into the Class A training, the methodology is applicable for activated sludge wastewater treatment plants of any size. In fact, it is a compilation of the methods and strategies the Compliance Assistance Unit uses at nearly every wastewater treatment plant they visit.



Basic process control tools: Centrifuge, ammonia test kit, settleometer, sludge judge, and alkalinity test kit.

The manual has five sections: Introduction, Units, Control, Maintenance and Regulations. Each section can be downloaded individually or as a complete set. The full document is 182 pages.



The Ohio Section of AWWA and the Ohio WEA are joining forces again to offer a **One Water Utility Management Workshop** on Tuesday, August 18th.

For the first time, the Ohio Section of AWWA and the Ohio Water Environment Association are cooperating to present a Utility Management Workshop. Our goal is to offer Ohio's leading, most informative and educational utility management workshop. Come prepared to share your experiences and learn from others in similar situations as we address the most pressing utility management issues of the day.

Topics under consideration are: workforce planning, ratepayer affordability, integrated project delivery, utility rate structures, effectively managed public water and wastewater utilities, asset management, and emergency preparedness.

Watch for program announcement and registration in June 2015.

www.onewaterohio.org



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Silver \$3,000.00 23 Points	Name on sign at ALL OWEA Registration Tables Thank you in all 4 issues of BB Headline Sponsor Opportunities
Bronze \$1,500.00 11 Points	Name on sign at ALL OWEA Registration Tables Thank you in all 4 issues of BB Headline Sponsor Opportunities
Copper \$1,000.00 7 Points	Name on sign at ALL OWEA Registration Tables Thank you in 2 issues of BB
Break \$500.00 3 Points	Name on Workshop AM or PM Break signs Thank you in 2 issues of BB
Sustaining \$250.00 1 Point	Thank you in 1 issue of BB

The OWEA Sponsor Committee, led by Chair Ted Baker, offers an innovative Sponsor Program, with headline sponsor acknowledgements and a point based redemption program. As companies and individuals sponsor and support the good work of the Ohio Water Environment Association, they also reap benefits and additional recognition by redeeming points for additional signage, as well as workshop, conference, and event registrations.

Make plans now to select your company's 2015 Sponsor Level. Contact Ted Baker or OWEA for more information.

Ted Baker, OWEA Sponsorship Committee Chair 440.829.8405, kingsnu@aol.com

Ohio Water Environment Association 614.488.5800, info@ohiowea.org



Points	Description
1	Golf Hole Sign
1	Sustaining Sponsor Certificate
2	Golf Event Sponsor (i.e. Long Putt, Pin shot, Long Drive)
4	Golf Foursome for 1/2 Price
6	Golf Foursome
8	Premier Golf Sponsor (1 Foursome, 1 Sign, 1 event)
3	Biosolids Attendance
3	Government Affairs Attendance
3	Collections Attendance
3	AM or PM Break Sponsor for 1 Workshop
6	Lab/Operations Attendance
13	Premier Specialty Conference (Attendance for all 4, 1 Break)
2	2015 Conference Meet & Greet
2	2015 Conference Thur Eve Event
4	Full Registration 2015 Conference for 1/2 Price
6	Full Booth Registration 2015 Conference for 1/2 Price
7	Full Registration 2015 Conference
10	Full Booth Registration 2015 Conference
4	Tuesday Only Registration 2015 Conference
4	Wednesday Only Registration 2015 Conference
3	Thursday Only Registration 2015 Conference
3	Conference Am or PM Break Sponsor
4	1/8 Page ad in Spring or Summer BB
8	1/4 Page ad in Spring or Summer BB
12	1/2 Page ad in Spring or Summer BB
16	1 Page ad in Spring or Summer BB
1	Ticket to Water for People Fundraiser Wine Tasting







Facility Tour - Kalahari Water Systems

Tuesday - OWEA Awards Brunch

Tuesday - OWEA Annual Meeting

Tuesday - Meet & Greet "Rocking Through the Decades"

Wednesday - Annual Banquet

Golf Outing - Thunderbird Hills North Course

Kalahari Convention Center 7000 Kalahari Drive Sandusky, OH 44870 419.433.7200



May 31 - Last Day for Early Bird Registration and Special Lodging Rates

Hosted by the Northwest Section. For information contact:

Doug Borkosky Conference Co-Chair 614.361.3673 doug@hlbaker.com Dave Sprague Conference Co-Chair 419.394.8616 spragoo@bright.net

Elizabeth Wick Technical Program Chair 419.373.3002 *elizabeth.wick@epa.ohio.gov* Ohio Water Environment Association 614.488.5800 info@ohiowea.org

Dear Colleagues,

Join OWEA as we go back to Kalahari and the Lake Erie Shores region for the OWEA 2015 Technical Conference and Exhibition! Will it be the **Same Old, Same Old**?

We invite you to decide for yourself . . . because like so many things in life, assumptions about the **"Same Old, Same Old"** vary from person to person. In fact, the entire conference is being framed with the mindset of questioning our own perceptions and judgements about the **Same Old, Same Old**. (In our conference logo, note the aptly placed question mark. . .)



Some traditions are extremely valuable and important. Some habits are worth keeping. Old friends are always enjoyable to see.

But: Some traditions can stand change. Some habits are destructive or, at the least, unproductive. Some strangers will bring welcome ideas and laughs to the table.

We invite you to revel in the past, assess the present, and vision forward to the future . . . all in the comfortable and recently expanded Kalahari Convention Center in Sandusky, Ohio. Our conference committee is working diligently to lay the groundwork for everything from intellectually stimulating tech sessions to emotionally fulfilling networking. Be our guests for several days of challenging the **Same Old**, **Same Old**.

Sincerely,

2015 Conference Committee Co-Chairs Doug Borkosky, *doug@hlbaker.com* Dave Sprague, *spragoo@bright.net*

Same Old, Same Old – VALUE

The 2015 Technical Conference and Exhibition promises to embrace at least one **"same old, same old"** time-honored tradition—**Value**. OWEA is offering value throughout this conference:

Exhibitors: We are utilizing the large Kilimanjaro Ballroom—maximum square footage! The Exhibit Hall is going to be spacious enough to welcome around 100 booths and the Ops Challenge Invitational. Also, except for the Sandusky WWTP Tour, there will be no other contact hour sessions other than Exhibit Booth tours and one track of exhibitor presentations (in an adjacent room). Exhibit booths also include a ticket to our (time honored and revered) Meet & Greet. Tuesday is your day for value.

Operators: Yes, it is about contact hours—up to 4 hours Tuesday, 6 hours Wednesday, and 3 hours Thursday. Attend the additional Northwest Section Utility Workshop on Monday (5 hours more), and you could earn up to 18 total contact hours! BUT, no, its not just about the same old, same old contact hours—the conference also offers you the opportunity to meet, converse, and share with operators from all over the state (and beyond). There is an immeasurable value in the learning from the operations experience gathered at the conference.

Consulting Engineers: Continuing education . . . Got it! Operators from all over . . . Got it! Access to 80 to 100 equipment and technology vendors in one place . . . Got it! Doesn't that equate to good value?

Everyone concerned about the water environment (managers, regulators, NGO's): this is Ohio's premiere week of value for you . . . access to knowledge, experience, and cutting edge information—don't miss it!

OWEA Needs Your Help

A successful conference relies on the contributions of time and effort from volunteers. Meet other water professionals, network, have fun - all while helping out. If interested, contact OWEA at *info@ohiowea.org* or 614.488.5800. Full details and online volunteer form available at *www.ohiowea.org*

Volunteer Opportunities include:

Registration: Monday - Thursday Golf Volunteers: Monday Facility Tour Monitors: Tuesday Exhibit Tour Monitors: Tuesday Sign Wranglers: Tuesday - Thursday Ticket Takers: Tuesday and Wednesday Moderators: Tuesday - Thursday Monitors: Tuesday - Thursday



Kalahari Convention Center





Sponsors committed as of 4/30/15. See page 32 for more details

Registration Options

Early Registration - by May 31st:

Full Conference Member	.\$275
Full Conference Nonmember	\$375
Retired Member Full Conference	\$150
Tuesday Only Member	.\$145
Tuesday Only Nonmember	\$195
Wednesday Only Member	\$145
Wednesday Only Nonmember	\$195
Student	. \$50
Spouse/Guest Program	\$160

Late Registration - June 1 and after:

Full Conference Member	\$325
Full Conference Nonmember	\$425
Retired Member Full Conference	\$200
Tuesday Only Member	\$170
Tuesday Only Nonmember	\$220
Wednesday Only Member	\$170
Wednesday Only Nonmember	\$220
Student	. \$75
Spouse/Guest Program	\$210

Budget Options*

*This option for attendees who only want to attend Technical Sessions on Tues, Wed, or Thur, or walk the Exhibit Exposition on Tuesday. Except for lunch on Wed, which is included, Food/beverages/networking events are not included in this price.

Tues Tech Sessions & Exhibition \$50 Wed Tech Sessions & Lunch....... \$75 Thur Tech Sessions - 1/2 Day \$50 Multiple Day Combo Available

NWOWEA Preconference Workshop*

Monday, June 22 \$2	5
*Add to conference registration	
*Or register separately for this workshop.	

Exhibitor Registration:

Includes Full Conference Registratio for Primary Exhibitor	n
Member Exhibitor	\$700
Nonmember Exhibitor	\$850
Extra Booth Attendant (2 max)	. \$50

Golf Registration:

Foursome		 	 	\$360
Individual	Golfer	 	 	\$90

OWEA 2015 Sponsorship Levels:

Titanium	\$7500
Platinum	\$6000
Gold	\$4500
Silver	\$3000
Bronze	\$1500
Copper	\$1000
Break	\$500
Golf	\$250
Sustaining	\$250

Register online *www.ohiowea.org*

Schedule | Monday, June 22 - Thursday, June 25

MONDA	Υ	<u>JUNE 22</u>	
8:00 a	-	9:00 p	Registration Sponsor ARCADIS
9:00 a	-	4:30 p	Operations Challenge Sponsor OVIVO
9:00 a	-	4:00 p	Preconference Utility Workshop Sponsor NWOWEA
10:00 a	-	4:00 p	Golf Outing - Thunderbird Hills North Course
6:00 p	-	9:00 p	Exhibitor Setup
7:30 p	-	10:30 p	Welcome Social - Attendees and Ops Teams
TUESDA	Y,	<u>JUNE 23</u>	
7:00 a	-	5:00 p	Registration Sponsor Hazen and Sawyer
7:00 a	-	8:30 a	Exhibitor Setup
8:00 a	-	10:30 a	Operations Challenge Sponsor OVIVO
8:30 a	-	10:30 a	Exhibition Open
8:30 a	-	9:30 a	Coffee & Pastries in Exhibition
10:30 a	-	1:00 p	Awards Brunch
10:30 a	-	1:00 p	Exhibitor & Ops Challenge Optional Brunch Seating
1:00 p	-	5:00 p	Exhibition Open
1:00 p	-	5:00 p	Operations Challenge Sponsor OVIVO
1:00 p	-	3:00 p	Facility Tour City of Sandusky WPCP
TBA	-	TBA	Kalahari Facility Tours
1:10 p	-	4:00 p	Technical Sessions - TBA
1:00 p	-	2:30 p	Spouse/Guest Program
1:00 p	-	4:00 p	Exhibit Tours (earn Contact Hours)
4:00 p	-	5:00 p	Exhibitor Reception Sponsor Brown and Caldwell
4:00 p	-	5:00 p	Ops Challenge Awards
5:00 p	-	6:00 p	OWEA Annual Business Meeting
5:00 p	-	6:00 p	Exhibit Tear Down
6:30 p	-	10:30 p	Meet & Greet Sponsor CT Consultants
10:30			After Party at Longnecks
WEDNES	SD/	AY, JUNE 2	<u>4</u>
7:00 a	-	5:00 p	Registration Sponsor ARCADIS
7:00 a	-	8:00 a	Crystal Crucible Breakfast Sponsor Alloway
7:00 a	-	9:00 a	Breakfast Sponsor Stantec
8:00 a	-	11:45 a	Technical Sessions (4 Concurrent Sessions)
11:45 a	-	1:00 p	Lunch Sponsor quasar energy group
11:45 a	-	1:00 p	President's Luncheon (by invitation)
1:00 p	-	4:45 p	Technical Sessions (4 Concurrent Sessions)
6:00 p	-	7:00 p	Reception – 5S Induction
7:00 p	-	9:30 p	Annual Banquet & Awards Sponsor CDM Smith

THURSDAY, JUNE 25

7:00 a	-	11:00 a	Registration Sponsor Hazen and Sawyer
7:00 a	-	9:00 a	Breakfast Sponsor Stantec
7:00 a	-	8:00 a	5S Breakfast Sponsor Jones & Henry
8:00 a	-	11:45 a	Technical Sessions (2 Concurrent Sessions)
12:00 p	-	2:00 p	Executive Committee Meeting

Did you know?

- You can earn up to 13 Contact Hours at the 2015 Technical Conference and Exhibition.
- Over 500 individuals have attended and/or participated in each of the past six Ohio Water Environment Association's annual conferences held 2008 - 2013.
- The Exhibition floors have filled with exhibitor booths over the past six years, so reserve your booth soon!
- An army of OWEA volunteers provides the planning, coordinating, moderating, monitoring, ticket taking, sign wrangling, and many other tasks to provide this educational experience for Ohio's water quality professionals.
NWOWEA Utility Workshop - 4.5 Contact Hours for \$25!! Monday, June 22, 2015

Attn: Front line operators, engineers, and management/city officials from small to large utilities.

Be our guest! The OWEA Northwest Section invites you to attend the pre-conference **Utility Workshop**.

This one-day technical workshop is open to ANYONE — conference registrants and one-day visitors. The cost of the workshop is being offset by NWOWEA as a member service and therefore the workshop, including lunch and continental breakfast is only \$25 (about the same as a section meeting.)

Special Offer: Invite your manager to come with you for **FREE!** If an operator or superintendent registers for the workshop, they may register one manager, engineer, or governmental official (from the same city or village) to attend for free. (Pre-registration is required) Examples of qualifying individuals would be council member, mayor, service director, facility engineer, county engineer, city engineer, utilities director, board of public affairs member. It is our hope that the manager will benefit from the presentations offered and that it will give them additional insight into some issues facing Ohio's water professionals.

Register online at www.ohiowea.org

(Note: You can register separately for this workshop if you are not attending the conference or you can add to most conference registration packages for \$25. Non-members are also encouraged to attend at the same rate.)

NWOWEA Pre-Conference Utility Workshop				
8:00	9:00	Registration with Continental Breakfast		
OPERATIONS/ENERGY EFFICIENCY		OPERATIONS/ENERGY EFFICIENCY	MANAGERIAL	
9:00	9:45	OSHA Confined Space, Air Monitoring and Fall Protection Untangled, Chris Cira, MTECH	Shared Services for Utilities Tom Fishbaugh, Ohio RCAP	
10:00	10:45	Energy Savings and Saving Money in Operations Scott Strahley, Ohio RCAP	Innovative Leadership Practices John Newsome, City of Columbus and Maureen Metcalf, Metcalf and Associates	
11:00	11:45	Energy Audits - What Are They and How Can They Help You? Scott Strahley, Ohio RCAP	Construction Manager at Risk - New Project Delivery Methods, James Salerno and Hillary Holmes, MMWH Constructors	
11:45	1:00	Lunch - Included		
1:00	1:45	Introduction to Biological Nutrient Removal and Its Application of These Principals to Smaller Wastewater Treatment Plants, <i>Dale Kocarek, Stantec</i>	Optimizing Capital Program Management Michael Rotunno, ARCADIS	
2:00	2:30	My Biosolids Don't Stink, But the Paperwork Does Andy Gall, Ohio EPA	Integrating Asset Management Principals and Emergency Preparedness: A Risk and Resiliance-	
2:30	2:45	Break (2:30- 2:45)	Based Asset Management Approach Kevin Slaven, ARCADIS	
2:45	3:00	Compliance Assistance Activated Sludge	Break (2:45- 3:00)	
3:00	3:45	Jon VonDommelen, Ohio EPA	CMOM - How to Develop Your Collection System Maintenance Program, Tom Fishbaugh, Ohio RCAP	

OWEA thanks NWOWEA, RCAP, OEPA and other presenters for making this workshop possible.

Welcome Reception and After Hours | Mon, Tue, and Wed - June 22, 23, & 24

Monday Welcome Event

Join conference attendees in welcoming the 2015 Operations Challenge team members. Meet the competitors who will be competing on Tuesday in the Maintenance, Collections, and Safety Events.

Tuesday and Wednesday After Hours

Continue networking and keep the dialogue going. OWEA will have its own gathering place at Longnecks, in the Kalahari Convention Center.



Exhibition | Tuesday, June 23, 8:30 - 10:30 a.m. & 1:00 - 5:00 p.m.

Exhibitor spaces are limited so reserve your booth now!

The Exhibition will be held at Kalahari Convention Center in Sandusky, Ohio. The Exhibit Hall will be open Tuesday from 8:30 - 10:30 a.m and 1:00 - 5:00 p.m., with a social in the Exhibition Hall from 4:00 - 5:00 p.m.

Register online at www.ohiowea.org. or contact OWEA at 614.488.5800/info@ohiowea.org.

Registration includes one full conference registration for primary exhibitor:

\$700 for OWEA members\$850 for NonmembersAdditional Booth Attendants: \$50 includes Exhibition access and Tuesday brunch





Brown AND Caldwell

Join the 80+ Exhibitors in the Exhibition Tuesday afternoon for a light afternoon social as you take advantage of the last hour to stroll the exhibit aisles. Enjoy a refreshment and see the new offerings by the 2015 exhibitors. Congratulate the winners of **OWEA's Operations Challenge Invitational** as the event trophies are awarded to the victors!

Exhibitor List | as of April 30, 2015

360water, Inc. ADS Environmental Services Akron Electric, Inc. AllMax Software, Inc. Alloway Asahi/America **BissNuss Inc BL** Anderson Boerger, LLC Buckeye Pumps Inc. Carrig And Associates, Inc. Chaltron Systems Inc. Commerce Controls, Inc. Crawford, Murphy & Tilly CTI Engineers, Inc. Daman Superior LLC DN Tanks, Inc. DRV Inc. Duke's Root Control, Inc. EnviroScience, Inc. FloWav FSRC Tanks Inc. **Gilson Engineering Sales** HOBAS Pipe USA Hydro Dynamics Company **Integrity Aquatic** Ishiqaki USA Ltd

J.G.M. Valve Corp. Kemira Logan Clay Products Madewell Products MASI Environmental Laboratories MTech Nelson Environmental Inc. Ohio RCAP Ohio Water Environment Association/WEF Pelton Environmental Products, Inc quasar energy group RecyClean RoviSys Smith Environmental Inc Southern Sales Company SpectraShield Liner System SW Controls, Inc. The Henry P. Thompson Co. Thermal Process Systems **Trojan Technologies** USA BLUEBOOK USALCO, LLC Vogelsang Water Environment Federation WWETCO/WesTech Zoeller Pump Company

The First Ever OWEA Car Show ONLINE | Enter your car at www.ohiowea.org

Enter your car's info and we'll post on the OWEA website and Facebook page. Why? We're building community and setting the mood for the 2015 OWEA Technical Conference and Exposition. We want to see cars from the 50's through 2015 if they've got vintage character or muscle, or are super energy savers!

Help make this spring something other than the Same Old, Same Old . . .

Visit *http://www.ohiowea.org/owea_car_show.php* to see all the cars or submit your entry. A few of the entries are shown below. Need more info? Contact 2015 Conference Chairs Doug Borkosky, *doug@hlbaker. com*, or Dave Sprague, *spragoo@bright.net*.



Category: Classic Car **1954 Austin Healey 100** Owner: Mike Foster Category: Modern Muscle Car 2013 Nissan 370Z Owner: Kerry Hogan Category: Classic Car **1978 Alpha Romeo Spider** Owner: John Krinks

Exhibit Learning Tours | Tuesday, June 23

Earn 1 Contact Hour per tour

Each tour will include four 15 minute sessions in the exhibit hall, educating attendees about new technology, systems, and BMP's in various aspects of water reclamation and treatment.

OWEA's exhibitors typically include representatives from collections, treatment, stormwater, instrumentation/SCADA, laboratory services, and consulting engineers. Exhibit tours are a great way to get updates on trends and innovations nationwide as exhibitors include both local and national companies. Sign up for exhibit tours the day of the Exhibits!

City of Sandusky WPCP | Tuesday, June 23, 1:00 - 3:00 p.m.

Sign up Online or at Registration Desk - Space Is Limited

Earn 1.0 Contact Hour!

Nestled on the shore of Sandusky Bay and a stone's throw from Lake Erie, the City of Sandusky Water Pollution Control Plant is a classic WWTP in its use of primary settling, activated sludge, and anaerobic digestion. With an average daily flow of 15.7 MGD and peak flows of 42 MGD, the WPCP is the major treatment facility for the City and surrounding tourism sites. The WPCP was most recently upgraded in 2010.

Join the City of Sandusky WPCP staff for a tour of the plant and get a peek of the Bay on your way by!

No additional charge for the tour.

Available option for Full and Tuesday One Day registrations.



Kalahari Facility Tour | Tuesday, June 23 - Sign up at Registration Desk

Kalahari Resort Sandusky has an indoor water park that covers 173,000 SF and an outdoor waterpark covering 77,000 SF. Underneath the waterpark and the nearly 900 hotel rooms lies a service area that manages not only housekeeping and laundry but also water treatment and reuse.

Earn 1 Contact Hour for the tour - Times TBA

As part of the tour, attendees will see:

- Several banks of pressure filters
- Inline UV disinfection units
- Chlorine storage and dosing
- Chlorine monitoring equipment
- Boilers and heat exchangers
- Centrifugal blower room for wave generation

In addition, the tour will also explore other pollution prevention, energy saving, and green initiatives in the waterpark, laundry and kitchen areas of the resort.

OWEA Annual Business Meeting | Tuesday, June 23, 5:00 - 6:00 pm

Participate in the election of OWEA's officers, hear OWEA's financial report, catch up on organizational news, committee news, and learn about the activities of the NW, NE, SW, and SE Sections.

201

Wednesday, June 24 - Morning Technical Sessions - Four Tracks

Nutrients - Zambezi Room				
8:00	8:45	Roadmap for Phosphorus Control in Ohio-Three Pillars for Achieving Compliance	Sam Jeyanayagam, PhD, PE, BCEE, CH2M HILL	
9:00	9:45	Final Clarifiers-The Achilles' Heel of Phosphorus Compliance	Sam Jeyanayagam, PhD, PE, BCEE, CH2M HILL	
10:00	10:45	Deammonification Technology for Nitrogen Removal: Is That the Right Technology for You?	Ting Lu, PhD, PE	
11:00	11:45	While We Are At It, Nutrients Too, in Clark County	Bill Meinert, PE, O'Brien & Gere	
		Green Technology/Energy - Suite 6		
8:00	8:45	Getting to Zero: Energy Best Practices to Reduce Energy at your WW Facility	Patrick Eiden, PE, HDR	
9:00	9:45	Green Infrastructure Maintenance Management at MSDGC	Leslie Schehl, PE, MBA, PMP, MSDGC	
10:00	10:45	Heating and Cooling Energy from Wastewater-Design for Energy Savings and New Income for Water Utilities	Chris Hubbard and Nick Meeten, Huber Technology	
11:00	11:45	Wastewater Key Performance Indicators: Proof of Efficiency	Kevin Krejney, Montgomery County Environmental Services	
Collections - Suite 5				
		Collections - Suite 5		
8:00	8:45	Collections - Suite 5 Developing a MOM Program	Sean O'Rourke, PE, Hazen and Sawyer and Dave Reimer, City of Miamisburg	
8:00 9:00	8:45 9:45	Collections - Suite 5 Developing a MOM Program Maximize Your Investment-City of Lorain Collection System Optimization Eliminates SSOs	Sean O'Rourke, PE, Hazen and Sawyer and Dave Reimer, City of Miamisburg Laura McGinnis, PE, ARCADIS Mary Garza, City of Lorain	
8:00 9:00 10:00	8:45 9:45 10:45	Collections - Suite 5Developing a MOM ProgramMaximize Your Investment-City of Lorain Collection System Optimization Eliminates SSOsUsing Acoustic Inspection to Priortize Sewer Cleaning	Sean O'Rourke, PE, Hazen and Sawyer and Dave Reimer, City of Miamisburg Laura McGinnis, PE, ARCADIS Mary Garza, City of Lorain George Selembo, PhD, PE, Infosense	
8:00 9:00 10:00 11:00	8:45 9:45 10:45 11:45	Collections - Suite 5Developing a MOM ProgramMaximize Your Investment-City of Lorain Collection System Optimization Eliminates SSOsUsing Acoustic Inspection to Priortize Sewer CleaningChallenges and Lessons Learned from Cleaning and Inspecting 860 Miles of Sewer Pipe	Sean O'Rourke, PE, Hazen and Sawyer and Dave Reimer, City of Miamisburg Laura McGinnis, PE, ARCADIS Mary Garza, City of Lorain George Selembo, PhD, PE, Infosense Tim Antos, PE, and Brandon Long, Burgess & Niple	
8:00 9:00 10:00 11:00	8:45 9:45 10:45 11:45	Collections - Suite 5Developing a MOM ProgramMaximize Your Investment-City of Lorain Collection System Optimization Eliminates SSOsUsing Acoustic Inspection to Priortize Sewer CleaningChallenges and Lessons Learned from Cleaning and Inspecting 860 Miles of Sewer PipeBiosolids/Lab - Suite 4	Sean O'Rourke, PE, Hazen and Sawyer and Dave Reimer, City of Miamisburg Laura McGinnis, PE, ARCADIS Mary Garza, City of Lorain George Selembo, PhD, PE, Infosense Tim Antos, PE, and Brandon Long, Burgess & Niple	
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8:00 9:00 10:00 11:00 8:00 9:00	8:45 9:45 10:45 11:45 8:45 9:45	Collections - Suite 5Developing a MOM ProgramMaximize Your Investment-City of Lorain Collection System Optimization Eliminates SSOsUsing Acoustic Inspection to Priortize Sewer CleaningChallenges and Lessons Learned from Cleaning and Inspecting 860 Miles of Sewer PipeBiosolids/Lab - Suite 4Secondary Digester Cleaning to Meet Ohio Sludge RulesThe Energy Production, Economic Benefits and Advancements of quasar energy group's Anaerobic Digestion System Integrated with WTP's in a Public/Private Partnership	Sean O'Rourke, PE, Hazen and Sawyer and Dave Reimer, City of Miamisburg Laura McGinnis, PE, ARCADIS Mary Garza, City of Lorain George Selembo, PhD, PE, Infosense Tim Antos, PE, and Brandon Long, Burgess & Niple Timothy McCann, PE, AECOM and Keith Bovard, Rocky River WWTP Renato Contipelli quasar energy group	
8:00 9:00 10:00 11:00 8:00 9:00 10:00	8:45 9:45 10:45 11:45 8:45 9:45	Collections - Suite 5Developing a MOM ProgramMaximize Your Investment-City of Lorain Collection System Optimization Eliminates SSOsUsing Acoustic Inspection to Priortize Sewer CleaningChallenges and Lessons Learned from Cleaning and Inspecting 860 Miles of Sewer PipeBiosolids/Lab - Suite 4Secondary Digester Cleaning to Meet Ohio Sludge RulesThe Energy Production, Economic Benefits and Advancements of quasar energy group's Anaerobic Digestion System Integrated with WTP's in a Public/Private PartnershipOn-line Nutrient Monitoring- Operators' Job Got Easier	Sean O'Rourke, PE, Hazen and Sawyer and Dave Reimer, City of Miamisburg Laura McGinnis, PE, ARCADIS Mary Garza, City of Lorain George Selembo, PhD, PE, Infosense Tim Antos, PE, and Brandon Long, Burgess & Niple Timothy McCann, PE, AECOM and Keith Bovard, Rocky River WWTP Renato Contipelli quasar energy group Viraj DeSilvia, PhD, PE, BCEE, American Structurepoint, Inc.	

Technical Program as of 4/30/15. Visit **www.ohiowea.org** for up-to-date Technical Program.

20

Wednesday, June 24 - Afternoon Technical Sessions - Four Tracks

Nutrients - Zambezi Room				
1:00	1:45	Nutrient Management, Water Quality, and a Right-Sized Approach to Regulatory Compliance	Jennifer Frommer, PE, HDR	
2:00	2:45	Successful Strategies for Meeting Nutrient Removal Standards- Case Studies	James Gellner,PE, and Dan Miklos, Hazen and Sawyer	
3:00	3:45	Operation and Control of Multiple Biological Nutrient Removal Processes in One WWTP	Phil Anderson, ARCADIS	
4:00	4:45	Wisconsin Case Studies Using Cerium Chloride to Reduce Phosphorus to Ultra Low Limits	Joseph Carlston, Molycorp, Inc.	
		Integrated Planning - Suite 6		
1:00	1:45	The Construction Manager at Risk (CMR) Process: What Is It and Should I Use It?	Brad Lowery, PE, Jones and Henry Engineers	
2:00	2:45	The Lima Story: First Integrated Plan Approval in Ohio and USEPA Region 5	Thomas Ungar PE, Hazen and Sawyer, and Gary Sheely, City of Lima	
3:00	3:45	A Healthy Marriage: Community Engagement and Integrated Planning	Mo Wright, RAMA Consulting Group, Inc.	
4:00	4:45	CSO Affordability, What is the Right Answer	Jordan McCormack, PE American Structurepoint	
		Wet Weather - Suite 5		
1:00	1:45	Alternative Methods to Reducing Infiltration and Inflow into Sanitary Sewer Laterals	Ed Kelly, Storm Water Control Services, LLC	
2:00	2:45	Advancing Wet Weather Treatment: The NEORSD Demonstration of a Cost-Effective Solution	Nick Bucurel, PE, Brown and Caldwell and Greg Binder, PE, NEORSD	
3:00	3:45	Using Existing Infrastructure at the LeSourdsville WRF to Increase Wet Weather Capacity	Anthony Farina, PE Hazen and Sawyer	
4:00	4:45	Hamilton's Shrinking Consent Ordered Project - Do Court Decisions in Parallel Districts and Regions Affect Your Treatment Plant?	Peter Kube, PE, ARCADIS	
Wastewater Treatment - Suite 4				
1:00	1:45	Testing of PAA and Sodium Hypochlorite for Wet Weather Bypass Flow Disinfection	Jason Beck, PE, Hazen and Sawyer and Brian Clark, City of Sidney	
2:00	2:45	Ten Year Performance Study for Air Ionized Odor Control at the Denver Metro WW Reclamation District	Dennis Tulenko, REM	
3:00	3:45	Masses at Massillon: IFAS for Industrial Loads and Nutrient Removal	Kristin Waller, CTI and Bill Meinert, O'Brien & Gere	
4:00	4:45	Screen and Grit Removal Facilities Upgraded to Treat Billion GPD Wet Weather Flows	Carl Seifried, PE, Burgess and Niple and Kevin Zebrowski, NEORSD	

Technical Program as of 4/30/15. Visit **www.ohiowea.org** for up-to-date Technical Program.

Thursday, June 25 - AM Technical Sessions - 2 Tracks

Asset Management - Suite 6					
8:00	8:45	The Dissection of Tomorrow's Water Quality Professional: What Will It Take To Be Successful?	Jason Tincu and Eric Wahlberg, PhD, Brown and Caldwell		
9:00	9:45	ReNewark - The Renovation of Newark's Downtown Infrastructure	Roger Loomis, City of Newark and Michael Irwin, EI, ARCADIS		
10:00	10:45	Expansion or Optimization: What's in Your Future?	Jack Rafter, PE, BCEE, Fishbeck, Thompson, Carr and Huber and Joel Davenport, PE, Holland Area WRRF		
11:00	11:45	Updating WRFs for Biological Nutrient Removal	Don Esping, PE, Brown and Caldwell		
	Government and Regulatory - Suite 5				
8:00	8:45	Water Sustainability Through the Use of Advanced Biological Nutrient Recovery - A National Perspective	Rick Johnson, Clearas Water Recovery		
9:00	9:45	Ohio EPA Update	Laura Factor, Ohio EPA		
10:00	10:45	Division of Surface Water Update	Tiffani Kavalac and Erin Sherer, Ohio EPA		
11:00	11:45	DEFA Update	Jerry Rouch, Ohio EPA		

Technical Program as of 4/30/15. Visit **www.ohiowea.org** for up-to-date Technical Program.

2015 Golf Outing | Monday, June 22 - 10 a.m. Shotgun Start

: 8:30 a.m. Registration 8:30 a.m. Driving Range Open 10:00 a.m. Shotgun Start

\$360 per Foursome includes: Golf Cart, Range, Light Breakfast, Lunch, Dinner, Beverages, Prizes, and Events.

Thunderbird Hills Golf Club offers golfers of all levels the opportunity to combine golf with nature. The North Course opened in 1959 and it is characterized by its mature trees and rolling fairways. The course is 6,347 yards in length with par at 72.

It is literally minutes from the best roller coaster park in the world, the largest indoor water park in the country, some of the nicest beaches in Ohio, and the Lake Erie Islands.

Golf Hole Sponsor Signs available for \$250 per hole.

Register online at www.ohiowea.org

Breafast Sponsored by **HR Gray** Golf Lunch Sponsored by **RecyClean** Keg sponsored by **Thermal Process Systems**



Where: **Thunderbird Hills North Course** Times: 1316 Mudbrook Road Huron, Ohio 44839 419.433.4552

Awards Brunch | Tuesday, June 23, 10:30 am to 1:00 pm

Bring your appetite and your appreciation for the 2015 award winners to the Ohio Water Environment Association Awards Brunch. The brunch will be held on Tuesday, June 23 at 10:30 am in the Nile & Orange Rooms. After a bountiful brunch including Chef carved top sirloin, herb roasted chicken with sauce velouté, butter crumb baked Atlantic haddock polonaise, scrambled egg bar, Eggs Benedict, buttermilk pancakes, potatoes, sausage, bacon, mixed salads, fruit and yogurt bar, nut breads, desserts, orange juice, coffee, tea and milk, OWEA will recognize this year's award winners.



The Awards Brunch will highlight the **same old, same old** excellence we witness year to year from Ohio's water professionals. Presentations will include the OWEA state awards, the 5S nominees, the Crystal Crucible, and Golden Manhole award winners.

If you know someone who is a candidate for a future award, please give their name to your section award committee representative (available online at www.ohiowea.org).

Meet & Greet | Tuesday, June 23, 6:30 pm to 10:00 pm

Rocking Through the Decades!

Do you listen to the **same old, same old** music? From which decade does your same old music hail? Come to the 2015 OWEA Meet & Greet and network while also enjoying a selection of music from the 1950's and decades hence. **Free Rider**, the popular and well-received band from the 2011 Meet & Greet, is back to take our hands and hearts and walk us through sixty years of the same old, same old favorites. (In case you remember 2011: the M&G will be inside—no thunderstorm is going to interrupt our fun this time!) No need to bring your own CDs, tapes, LPs or 8-tracks— the guys of **Free Rider** will be ready!

A delicious menu of foods popular in each decade will be available. Although the menu will be diverse, everyone should be able to find a favorite that brings back memories. Rumor has it that the 70s may just include a chocolate fountain . . .

Networking is a business habit that benefits everyone - regardless of your stage in work and life. Take advantage of knowledge and wisdom of others to discuss the same old problems, while looking for new ideas, new technologies, and new opportunities. Same old friends and same old chance to make new connections!

The **"Rocking Through The Decades Meet & Greet"** begins Tuesday evening at 6:30 pm!





Reception and Annual Banquet | Wednesday, June 24, 6:00 to 9:30 pm

The evening will begin with a Reception at 6:00 p.m. Witness the ceremonious 5S Induction and the "roast worthy" introductions of this year's inductees.

Beginning at 7:00, this year's banquet program will honor those receiving WEF Awards, presented by Jenny Hartfelder, the 2015 WEF Board of Trustees' representative. Next will be the passing of the Ohio Water Environment Association gavel from outgoing President Mike Frommer to the incoming President Elizabeth Wick.

Emcee and Co-Chair Doug Borkosky is always up to his **same old, same old** tricks so there are sure to be some entertaining surprises along the way.

Enjoy a delectable dinner prepared by the excellent Kalahari chefs and help celebrate the work of OWEA and its long tradition of dedicated and talented leaders.



Mike Frommer OWEA President



Elizabeth Wick OWEA President-Elect





Jenny Hartfelder WEF BOT Representative



Kalahari Convention Center | Tuesday, June 23 - Thursday, June 25

Join OWEA at the **Kalahari Convention Center** in Sandusky, Ohio for the **2015 Technical Conference and Exhibition**. The Kalahari Convention Center facility has over 215,000 SF of convention space. State-of-the-art audio/visual, spacious meeting rooms, superb culinary capabilities, over 890 rooms, and highly personalized services will ensure the OWEA event will be a success. OWEA will be taking over the Kilimanjaro Ballroom and nearby meeting rooms for the 2015 conference. With free parking, free wi-fi, nearby Sandusky attractions, and a relaxing venue, conference attendees will enjoy an educational experience!

- Standard room rate **\$144 per night** for up to four persons (*Rates may vary for larger accommodations.*)
- One night deposit required to guarantee reservation.
- Rooms include a coffee maker, refrigerator, microwave, free Wi-Fi, voice mail, television, in-room safe, pay-perview movies, and much more.
- Resort Fee has been waived for OWEA attendees and will not be charged. The standard wording on their website and confirmation letters though cannot be changed so it will talk about the Resort Fee but will not be charged to OWEA attendees.



OWEA room rates available for nights of Sun June 21 thru Wed June 24, 2015.

Make your reservations via the link at *www.ohiowea.org* or call Kalahari: 877-525-2427 Please ask for 2015 OWEA *or* booking ID 19637 Cutoff date for special rate is May 31, 2015

Family friendly!

Attendees and their guests can also enjoy America's largest indoor waterpark. Visit Kalahari's website for more info: http://www.kalaharimeetings.com/ohio# Kalahari Convention Center 7000 Kalahari Drive Sandusky, OH 44870 877.525.2427



2015 Spouse/Guest Program | Tuesday, June 23 - Wednesday, June 24

TUESDAY AFTERNOON Immediately following the Awards Brunch, the registered spouses and guests are invited to a welcome reception. During this event, the participants will be greeted by representatives of Kalahari and the Lake Erie Shores & Islands welcome team. Hosts will share ideas about great side trips, attractions, and entertainment in Sandusky and the surrounding area. A Kalahari chef may even drop in and share with the group. It may be that the **same old, same old** friends show up - but this also may be a chance for some OWEA stalwarts to welcome newcomers as well . . .

WEDNESDAY Let's face it - you're going to be at a resort, in the heart of Lake Erie's tourist attractions - you don't need to ride around on a bus to the same old, same old shops. There's a whole region to explore . . . or you can grab the same old, same old drink and lounge by the pool. It's your choice, and the options are plentiful. Although there are no formal events planned for just the Spouses & Guests on Wednesday, we know you'll enjoy the day and show up at the Banquet relaxed (and maybe a little more tan) . . . Once again, use the time on Tuesday to network and plan your Wednesday excursions.

Program includes tickets to Awards Brunch, Meet & Greet, Annual Banquet, and special Spouse/Guest activities. Just \$160 per guest if registered by May 31 (\$210 June 1 or later)



OPERATIONS CHALLENGE

2015 Operations Challenge Invitational

Monday, June 22 and Tuesday, June 23

The Ohio Water Environment Association is proud to announce they will host an Operations Challenge Competition and National Invitational as part of the 2015 Technical Conference and Exhibition.

- 12 teams total
- 6 spots held for invitational teams.

\$50 Team Registration (up to 5 people) includes:

- Monday Morning Continental Breakfast
- Monday Lunch
- Monday Night Welcome Social at Longnecks
- Tuesday's Awards Brunch
- ♦ Tuesday's Meet & Greet

Registration and details at www.ohiowea.org





PROCESS CONTROL EVENT

Put on the thinking hat

This event consists of a written test meant to evaluate an operator's knowledge of WWTP process control. The test consists of three main sections: short math, multiple choice, and process control scenarios. The point values for the questions in each section vary. The teams have to decide on how to divide up the sections among the four team members and chose which questions to answer. The test is designed to have enough questions that the teams will not complete the entire test within the 20 minute event. Teams will often consult the WEF MOP 11 manual and Ohio EPA "need to know criteria" for the operator certification exams, while preparing for this event.

Test Your Skills! Meet and Compete with Fellow Operations Challenge Teams

LABORATORY EVENT

It's all going to alkalinity

Somebody once stressed, "It's all going towards alkalinity." This statement is absolutely true. Permit limits are getting more stringent and nutrients are a huge issue. It is essential that operators realize how alkalinity affects the ability of your plant to convert ammonia. During the lab event teams will analyze alkalinity and ammonia samples taken from various stages of the treatment process to determine if changes need to be made in operation to maintain compliance. Sample dilution, pipetting, and general laboratory techniques are essential to completing the event as swiftly as possible.





SAFETY EVENT

Man Down!!!

Words that no one wants to hear . . . a co-worker has become incapacitated while in a confined space. You need to get them out, and fast. But first things first . . . you must complete a confined space permit, test the atmosphere to be sure it's safe for a rescue, and get your safety equipment ready. Assemble the gantry recovery crane, insert the fresh air blower, then pop the manhole cover and lower the rescuer. Place a harness on the unconscious co-worker and lift him out. Then retrieve the rescuer. The key is to be fast, but also be safe. Teams are judged on time to complete the event and on penalties assessed for safety violations. Remember it does not do any good to try to rescue someone and injure yourself in the process.

Great Way to Prepare for the 2015 National Competition in Chicago

COLLECTION SYSTEMS EVENT

The fastest two minutes in wastewater

How long do you think it would take you to cut through an 8" SDR-35 pipe with a **hand saw?** No battery powered Sawzall[®] here. 30 seconds . . . how about 45 seconds? Unless you can be around 20, don't even try. The object of the Collections Event is to cut out a 1' - 2' section of broken sewer line from a six foot long pipe, replace it with another unbroken section using two Ferncos[®], and install a new saddle connection on the fresh pipe. You have four team members: who cuts what, and when? Choreographed chaos is the best way to describe the event. Complete the whole thing in less than two minutes and you might just be fast enough to be the winners.



Don't Miss It! . . . Not Competing? Be Sure to Watch the Competition

MAINTENANCE EVENT - sponsored by TnT Engineering, LLC



Weather in Ohio is always changing, wait an hour it will go from winter to summer. Imagine a summer thunderstorm. A lightning strike has knocked out the power and fried the control panel at a remote lift station. It is time to mobilize your trailer mounted engine and pump set. Before you can take the trailer out, you have to be sure it will work. Your team must perform maintenance on the trailer, engine, and pump. Check the tires, change the filters, vacuum test the pump – just a sample of the tasks to be completed. Wheel the trailer over to the model wet well, then attach the suction and discharge hoses, program the engine and pump control unit, and away it goes. Remember move quickly . . . the Mayor's house is the first lateral up from the lift station!

CHOOSING A CONTRACT LAB

by Kathy Richards, City of Akron

Most of us will, at some point, have to rely on an outside agency for sample analysis. It could be for priority pollutant reports, whole effluent toxicity testing, low level mercury analysis, or perhaps your own instrument is out of service. Knowing that the results are going to be submitted for permit compliance, it is imperative that you have a high degree of confidence in the data. Being proactive and spending some time, energy, and resources to research what is available before you need it is prudent.

So how do you determine which contract laboratory is going to give you that high level of certainty? There are a number of issues and factors to consider, and the weight that each carries will vary depending on the individual situations. It is my contention that there are five 'core concerns' that should be applied to each aspect as you compare different labs. These are: *communication, competence, flexibility, pricing, and recommendations.* I have identified ten key areas to consider when choosing a contract lab. By systematically applying the five core concerns to each area, it should become clearer which provider will best suit your particular needs. Hopefully you will find this helpful as you shop around.

(1) Information

This should be fairly obvious. After all, this is what you are paying for: information or data. First and foremost, make sure you provide the contract lab with any pertinent information they require, such as contact information for your facility, accounts payable personnel, etc.

- Communication How does this lab prefer to communicate? Do they provide reports electronically or do they mail a hard copy? Are you comfortable with this method?
- Competence Do they provide clear concise and accurate information? Is all the information provided reliably and in a timely fashion? Do they have a dedicated customer service department?
- Flexibility Are they able to be flexible when it comes to your needs in varying circumstances? Can they provide additional information if it is required?
- Pricing If more information is required, such as a QC packet or copies of the bench sheets, is there an additional cost? If so, how much?
- Recommendations Ask around. Have any of your peers worked with this lab, and have they found that they are particularly easy or difficult to deal with? Do they respond to calls or emails quickly or do they hide behind secretaries and voice mail?

(2) Quality Assurance/Quality Control

There are many laboratories to choose from – and there are certainly going to be some differences in the quality of the work they do. That being said, any reputable lab will have a QA/QC protocol, and likely a manual.

- Communication- Who would you ask to speak to if you have a QA/QC question? Do they have an independent department for oversight? Will all data be QA/QC reviewed?
- Competence Is the lab ISO, NELAC, or VAP certified? Has the laboratory been audited recently or taken part in the latest DMRQA and can you see a copy of the results? Do they follow

40CFR protocols? Do they have written SOPs and would they allow you to see them? Is there documentation that the analysts working with your samples have had adequate and appropriate training and/or certification?

- Flexibility Are they willing to use your sample for the QC requirement for the method, for the Matrix Spike for instance?
- ▷ *Pricing* If they will run your sample as the QC sample, is there an additional cost for this?
- Recommendations Again talk to your peers. Have there been situations where the QA/QC policy did not appear to be adequate or was not followed as prescribed by the company's SOP?

(3) Outsourcing

Of course you will choose a lab that is capable of running the analysis you require, but even the finest labs are going to run into an occasional problem. Recently, here in Ohio, there have been power outages, blizzards, and floods. Plus, as we have all experienced at some time or other, the potential for equipment failure.

- Communication Ask the potential contract laboratory, 'If you need to outsource my sample, will you tell me? When, before or after the fact? Will it be noted on my report?'
- ▷ *Competence* Who do they utilize as a backup lab? Are you comfortable with that lab?
- ▷ *Flexibility* If you are not particularly keen on their backup plan, will they consider changing to one you find more acceptable?
- Pricing If there is a difference in price who pays it? Does your contract lab absorb the cost or do they pass it along to you?
- *Recommendations* Does the lab have a history of not being able to get the job done in house on a regular basis or is it a rare occurrence?

(4) Sample Handling

This is an incredibly important part of a laboratory's responsibility and too often overlooked or under-valued. Who is conducting the sampling, your personnel or their field crew? Whoever is sampling, are they trained for the specific parameter being collected, especially low-level Hg, Oil & Grease or volatile organics?

- Communication If there is any discrepancy in the Chain of Custody or other obvious problem with the sample upon receipt, will you be notified immediately?
- Competence Is there a procedure for following the sample 'from cradle to grave'? If a specific temperature or preservative is required are they confirmed on receipt? Does the analyst 'sign' for the sample? Is the sample retained past the time of report issuance? Are the samples kept in a secure area?
- \triangleright *Flexibility* Will the lab agree to either store or return the sample if requested due to an unexpected result?
- ▷ *Pricing* Will there be a charge for this extended storage? If the laboratory crew is conducting the sampling, is this reflected in the price? If your facility personnel are acquiring the sample, will the contract lab pick it up? Do you need to ship any samples? Is this covered in the pricing?

Feature Article

Onio

Recommendations – Ask about a reputation for an unusually large number of lost, broken, or missing samples.

(5) Maintenance

This is another 'behind the scenes' element that deserves your attention.

- Communication Do they have written procedures and/or schedules for instrument and equipment maintenance and calibration? Are there written records to substantiate this?
- Competence Who is responsible for the day to day upkeep? Usually the analyst is capable, but for major instrument overhauls, do they have a service contract? This can make a big difference in how quickly a lab gets back up and running if an instrument does fail. Can they assure their equipment is still supported and/or serviced by the manufacturer?
- Flexibility Do they have instrument redundancy? Do they have multiple analysts trained on each piece of equipment to cover during absences?
- Pricing There is no real concern for you as the consumer here. The lab is responsible to incorporate these costs into its fee schedule. Under no circumstance should a laboratory attempt to blame a customer's sample for instrument failure. A reputable lab will have experience with unusual or difficult matrices and will treat them appropriately.
- *Recommendations* Does the lab have a reputation for last minute glitches due to instrument failure?

(6) Methods

Don't assume the lab has written valid test methods!

- Communication Will they share copies of their methods and/ or procedures with you?
- Competence Are they running the current approved EPA method? Did they adjust for the 2012 Methods Update Rule? Are they aware of the 2015 MUR that is currently out for comment?
- ▷ *Flexibility* There really should not be too much in the way of flexibility when it comes to methods. Approved methods are regulated and must be adhered to. However, there are instances when the same constituents can legitimately be measured by a number of different means. For instance metals can be run by AA, ICP or ICP/MS.
- Pricing There is likely going to be a difference in the pricing, dependent on which of those available methods you request. Typically the more sensitive the method the more expensive it is.
- Recommendations Here you may want to discuss with the lab as to what they would recommend from the list of approved methods to get the best data for your particular needs. Do you need a very low reporting limit? Do you need tentatively identified compounds (TICs) in your semi-volatile organics report? Do you need 'J' flagged results above the MDL?

(7) Experience

We deal with some 'special' needs at times.

Communication – Can the laboratory give you assurance, other than just verbally, that they have hands on experience with the methods and matrices you will be submitting?



Beakers and microscope riaus.org.au

- Competence Not everybody has had the joyful experience of analyzing sludge. Have the analysts at this facility demonstrated competence with this matrix for the method required?
- Flexibility & Pricing Unless you are bringing in an incredibly unusual request, flexibility and pricing should not be a changing dynamic when considering experience. Price quotes should outline specific costs based on specific analytical methods and matrices.
- Recommendations Again, ask around. There are some labs that have a very good reputation for water analysis but would not necessarily perform as well with solids.

<u>(8) Data</u>

The end product! The raison d'être! The purpose for this whole exercise!

- Communication Is all the raw data recorded in bound books or is it automatically uploaded to a Laboratory Information Management System (LIMS)? Are the reports delivered electronically or by mail?
- Competence Is there a way to track back to the raw data from the final report? Can the lab provide an audit trail to assure only qualified personnel has had access to the information? Labs should have security systems in place that include physical access control, network security, and employee security policies.
- Flexibility Ask to see a template or model of the report they will be providing. A report should not be painful or difficult to read. It is not reasonable to ask a lab to rework their entire reporting style, but they should be able to provide the information you require in a format you can understand.

Feature Article



continued from page 49

- Pricing Again, the pricing should be clearly stated for each method and matrix – and it should be made very clear what data you will be receiving for that price. Does it include any QA/QC information? How long will they hold onto the raw data and is there an additional fee for an extended records retention request?
- Recommendations Does the lab have a reputation for supplying substantiating information on request? Can it produce bench sheets, calibration curves, and similar validating material if they become important for you?

(9) Timeliness

The best data and reports in the world are of no use if you cannot count on them being delivered when you need them.

- Communication What does this lab consider to be a standard turnaround time? Will they notify you if they cannot meet this standard?
- Competence Does the lab consistently have the capacity for the work it accepts? In other words, are there enough competent analysts and enough working instruments to adequately address the needs of all their clients?
- Flexibility If an urgent need arises can they provide quicker service? For instance, if your CN distillation unit fails at an inopportune time, can they get results to you in time for you to submit your eDMR?
- \triangleright *Pricing* If you do need this rush turnaround time, what is the additional cost?
- Recommendations Have you heard that this lab is consistently late in getting results out? Do they repeatedly over estimate what they can actually accomplish in any given week?

(10) The Unexpected

Always expect the unexpected.

- Communication How quickly will you be notified of any problems that may occur? Will you be called immediately if a sample is lost or broken?
- Competence If the results you get are unexpected, such as the final effluent numbers are higher than the raw influent numbers, would the lab recognize that to be unlikely? Do they have redundancy in their record keeping so data will not be lost due to a computer glitch? Should the EPA have questions about some unusual results, does the laboratory have someone with the background and expertise to consult with?
- ▷ *Flexibility* Should something happen at the laboratory analyst error, natural disaster, act of God, what have you will the lab cover any resampling costs?
- Recommendations Is the unexpected 'normal' for this lab? There is not a laboratory in business that has not had an unforeseen event, but this should not be on a regular basis and the lab should certainly be very willing to explain the situation and take steps to assure it does not happen again.

In closing, I will leave you with these websites that I have found to be helpful in finding labs in your geographic area to interview.

List of OEPA DDAGW Labs <u>http://epa.ohio.gov/ddagw/labcert.aspx</u> List of NELAC accredited Labs <u>http://lams.nelac-institute.org/</u>

If it is at all possible, I highly recommend you visit the potential contract lab and get a feel for how they really work. Are they organized? Do they seem to get along well with each other? Do they enjoy showing off their facility?

Always remember to treat the lab personnel with respect. They are trained professionals. And make sure you keep up your end of the bargain. Don't ask for unnecessary perks. Pay your bills on time! Independent labs are usually running on pretty tight budgets and none of them are getting rich. If you treat them well they will likely do whatever they can to keep you happy.

If you find a lab you love, talk them up to your peers! But be very careful of being overly critical. Typically it is better to have 'no comment' than to cast aspersions. I think most people recognize a 'no comment' for what it really is. Good luck!

Kathy Richards, Environmental Compliance City of Akron Water Reclamation Facility *krichards@akronohio.gov*

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Plant Profile

CITY OF WARREN, OHIO WATER POLLUTION CONTROL FACILITY

by Mike Welke, Biosolids Manager/Maintenance Supervisor for Warren WPCF

Introduction

The City of Warren is located in the northeast section of the state. It is near the Pennsylvania border. Warren has over 40,000 residents and it used to be heavy in the steel industry. The Water Pollution Control Facility (WPCF) is located on 111 acres in Weathersfield Township. The WPCF operates through a permit issued by the Ohio EPA under the National Pollutant Discharge Elimination System (NPDES) program. The permit requires the plant effluent to maintain a carbonaceous biochemical oxygen demand (CBOD) monthly average below 12 mg/l, a Total Suspended Solids (TSS) monthly average of below 20 mg/l, E. Coli monthly average below 126 cfu/100ml, Ammonia monthly average of less than 3 mg/l, a pH range of 6.5 to 9, and a chlorine residual of no more than 0.024 mg/l can be discharged into the Mahoning River. The facility serves Warren, Champion, Lordstown, and other parts of Trumbull County.

The Warren WPCF maintains over 190 miles of sanitary sewers and 138 miles of storm sewers. The collection system is majority gravity fed with 6 pump stations that pump the flow to the gravity section of the collection system. The pipe sizes of the collection system vary from 6" to 72". These lines flow into a 78" interceptor before going into the main pump station. The main pump station has four 18 by 24 inch non-clog vertical pumps. Two of these pumps are on a Variable Frequency Drive (VFD). The other two are set up to run at full speed. The flow leaves the main pump station via a 42" force main that goes about a mile up the road to the plant.

History of Warren WPC

The original facility was put on line in 1962 with Preliminary and Primary treatment. The plant consisted of one manual bar rack with $1\frac{1}{2}$ inch spacing, two Detritus tanks with reciprocating rakes for grit wash and removal, four primary flocculation/settling tanks, one gravity thickener, one scum sump, one sludge holding tank, two vacuum filters, two five-hearth incinerators, and one chlorine contact tank. The design flow was 10 MGD. The flow consisted of about 70% residential and 30% industrial. The collection system at that time was a combined sewer system with a lot of combined sewer overflow (CSO's). There is only one of these overflows in existence today and we are currently working to eliminate it.



Secondary treatment aeration tanks with primary building and sludge holding in background

The facility has gone through two major upgrades. The first was completed in 1987. This project expanded the plant with secondary treatment using activated sludge aeration. The design capacity was expanded to 16 MGD average and a maximum of 40 MGD. Some improvements that accompanied this project were the construction of a screening building. The screening building houses catenary bar screens (2) and a manual bar screen. All three screens had ³/₄-inch openings. Two new detritus tanks were constructed, 24 foot in diameter. The original two detritus tanks are 20 foot in diameter. The detritus tanks are equipped with circular collection systems, reciprocating rake washers, and organic return pumps. One additional primary settling tank was constructed. This treatment phase is supposed to remove most of the settleable solids.

Secondary treatment including ammonia removal is accomplished by an activated sludge process including four aeration tanks each with four passes using fine air diffusers. The air is provided by one of four 450 hp blowers that are rated for 7200 cubic feet per minute (CFM) each. This fine bubble aeration system allows efficient oxygen transfer. The mixed liquor channel is aerated using a Huffman blower. This fine bubble aeration system keeps the microorganisms in suspension until they reach the four final clarifiers. In the Final Clarifiers the suspended biological material is settled to the bottom. Most of this settled material is pumped back to pass one of each aeration tank as return activated sludge (RAS). The rest is pumped to the dissolved aeration floatation tanks (DAF) as waste activated sludge (WAS). Here secondary sludge is aerated and floated, then skimmed off into a sump. This sump is pumped to a sludge holding tank. The subnatant water is pumped back to the primary influent channel. The flow leaving the final clarifiers goes into two chlorine contact tanks, each with post aeration.

Disinfection is achieved by adding chlorine gas at the chlorine contact tanks. Sodium bisulfite is used at the post aeration tank to reduce the chlorine residual to a level that is not harmful to aquatic life in the Mahoning River. After post aeration, the flow leaves the facility via a new outfall line and enters the Mahoning River.

Three plate and frame sludge filter presses for sludge dewatering were gradually installed in the primary building. They replaced the two vacuum filters. New bunkers and drag chain conveyors were installed to feed the incinerators.



Aeration tanks secondary treatment

Plant Profile

A new secondary treatment building was later constructed in 1987. The new secondary building houses the new offices, lab, two DAF tanks, two Kenny strainers for filtering the plant service water, four return sludge pumps, two waste activated sludge pumps, four progressive cavity lobe type blowers (Roots Dresser), and a new chlorine feed room. There were some small modifications to a couple of plant processes several years after this upgrade. First, the Two Cantary Bar screen racks with 3/4-inch openings were replaced with racks with 5/8-inch openings. New rakes were fabricated to match the new racks. Second, the DAF tanks were modified. The bottom collectors were removed and the screw augers were not used to pump the sludge to the sludge sump. This was believed to have been done due to the large amount of grit found in the bottom of the DAF tanks. Then primary and secondary sludges were introduced together just before entering the tanks. This provided a more homogeneous blended sludge that would provide a consistent sludge to the belt press.

In 1997, the next upgrade consisted of the construction of a new solids handling facility. The old incinerators were not meeting air quality standards. This made us look into alternatives. First we looked into putting in a regenerative afterburner onto our existing incinerators. This option would only get us about three years of compliance before the air quality standards got tougher and we would not be able to meet those standards.

We then started looking at other solids handling processes. In particular, a process that would generate class A biosolids for beneficial reuse. It was decided to go with a lime-stabilized heatpasteurized system from RDP Inc. This system takes dewatered sludge cake into a thermo-blender, which mixes and conveys the cake through the unit. The augers of this unit are heated electrically, internally, as well as the bottom of the thermo-blender. A high calcium quick lime is added to both help get the biosolids up to 158°F and to get the pH of the biosolids up as well. From there the biosolids are dropped into the pasteurization vessel. This unit is totally enclosed and the sides are heated electrically to maintain product temperature. At each end there are temperature probes used to verify product temperature from beginning to end. Pasteurization occurs via maintaining 158°F minimum for 30 minutes. The product then leaves the pasteurization vessel and is dropped onto a serpentex conveyor and the product (Nature's Blend) is conveyed to our inner storage area.

Several tests are run to make sure the Nature's Blend meets the USEPA 503 requirements for class A Exceptional Quality Sludge (EQS) known as biosolids. It meets Alternative One - Option 6 of these regulations. This makes the Nature's Blend a lime stabilized heat pasteurized biosolid. The product also meets the EPA ceiling concentration limit for metals from table 3. We check the pH of the product every day it needs to be at a pH of 12 for 2 hours and 11.5 after 22 hours. We do composite samples and run metals and we do a grab sample for fecal coliform from eight spots around the pile of Nature's Blend. Our permit allows us to have up to 1000 most probable number (MPN) of fecal coliform. However, we are usually non-detect for fecal coliform.

The solids handling facility uses two Ash-Brook 2-meter Klampresses to dewater the sludge. The feed solids going to the belt press average 4.5% to 5.5%. The cake solids coming off the belt press average 24%. The Nature's Blend solids average around 36% to 40%. The facility has two trains, one to process Warren's solids, the other to process cake from other facilities. It is listed as a regional facility. The facility can process up to 240 wet tons in a 24-hour period. This would be 120 wet tons through the belt press (Warren's solids) and 120 wet tons through the live bottom bin (solids from other facilities). We have run trials of other facilities' cake solids and have found that most facilities use digesters to reduce the volatile solids, which reduces the volume. These materials, when run through our system, do not make a good marketable product. Although we understand why other facilities digest their solids to reduce their volatile solids, we like our volatile solids. The Nature's Blend material has a granular soil-like appearance largely in part because of these volatile solids.

Presently the plant has an average daily flow of 10 to 12 MGD, which is about 74% of design capacity. The plant is in compliance with its permit, but the plant is aging. Most of the equipment has exceeded its life expectancy of 20 years and trying to maintain this old equipment and processes is a consistent struggle. Maintenance is just keeping the equipment from failing. The next project in the near future will be a plant-wide rehab and refurbishment. Some of the items that will be looked at for this project are to upgrade or refurbish the preliminary treatment process. Screenings is where we will look at any technology that will increase our capture rate and fit into the current footprint. Other improvements are a blower upgrade, replacement of several valves throughout the plant to

continued on page 56



Dissolved aeration floatation (DAF) for solids thickening and blending



Return activated sludge (RAS) room



continued from page 55

include electronic operators, installation of a new SCADA system, upgrade of the electrical system for biosolids, and to upgrade the disinfection system. At this time we do not feel the need for any new processes or to extend process capacity. We meet our permit requirements.

Some problems we are facing include the high level of metals coming into the plant from our industrial contributors. We are currently working with these industrial contributors to bring these metals down to an appropriate level. The facility has recently started two collection projects in town. One is a storm sewer project on the east side of town. This was needed to eliminate flooding problems in that area. The other is both a sanitary and storm sewer improvement on the southwest section of town. This is needed due to the inadequate sanitary and storm systems for this small development that the city now maintains.

Mike Welke, Biosolids Manager/Maintenance Supervisor City of Warren WPCF, *mwelke@warren.org*



Primary and secondary building



Preliminary treatment detritus tanks



Nature's Blend biosolids process equipment

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Watershed Article

BLUEPRINT COLUMBUS COLLECTION SYSTEM MODEL

by Robert Herr, P.E., City of Columbus and Hazem Gheith, P.E., ARCADIS

The City of Columbus has maintained a Storm Water Management Model (SWMM) based model of its collection system in some form since 1988. The earliest models focused only on the combined section of the system, about 15% of the Columbus tributary area. These first models were used to characterize the combined system's response to wet weather and helped develop a level of understanding of the combined sewer overflows (CSOs). Also operation of the City's largest CSO, the Whittier Street Storm Tanks, was better understood through use of the model.

Over time, the USEPA SWMM software capabilities evolved and this enabled more and more details of the collection system to be represented. Columbus models evolved through simple unit hydrograph approach, then Real-Time Kinematic (RTK) routine, and now full application of a physically based groundwater routine; from skeletonized representation of the combined system to a highly detailed model of the entire City sanitary and combined collection system.

Previous models typically represented metersheds hydrology with one set of parameters, using RTK unit hydrographs, where its parameters are derived by calibrating shape and volume to a flow meter. These metersheds were then usually broken down into smaller sub-sewersheds for finer resolution of the hydrology and hydraulics. The entire metershed would have constant R, T & K unit hydrograph values which meant there was no means for dis-aggregating different Inflow and Infiltration (I/I) sources from one another.

In 2013 the Blueprint Columbus program was developed. The program is designed to fulfill the City's sewer consent order obligations and address stormwater quality at the same time; something the 2005 Wet Weather Management Plan did not. The primary mitigation technology used in the Blueprint Columbus program to mitigate sanitary sewer system overflows and water in basement occurrences are public and private source I/I reduction. The program will also create visible infrastructure improvements at a neighborhood level rather than buried tunnels and it will create local jobs. The fundamental pillars of the Blueprint program are lateral lining, sump pumps, roof redirection, and green infrastructure. For more background on the Blueprint Columbus program, see Buckeye Bulletin Issue 2, 2013 and Issue 2, 2014.

Once the Blueprint program was conceived, the City needed a model which could better support the program goals. After review of the previous models and consideration of the Blueprint approach, the following features were determined to be required to achieve the program goals.

- a methodology to represent individual I/I sources separately
- a robust groundwater routine
- incorporating contract service area (CSA) data
- quality checked spatially and temporally varied rainfall
- fully leverage knowledge gained in the development of previous models
- inclusion of all 12" and larger pipes in the City and the suburbs
- inclusion of all 8" and larger pipes in the Blueprint areas
- use of continuous calibration and continuous simulations
- development of Real Time Control strategies at key system locations



City of Columbus Blueprint Buffers

Watershed Article



I/I Sources

Because the new program is based on the reduction of both public and private source I/I, the new model had to be able to individually characterize these sources so various mitigation alternatives could be evaluated. After a list of the most common sources of I/I was developed and reviewed, the modelers created a methodology to represent them individually in the model. It was decided that the accounting of I/I source water would be based on contributing area and represented in the model as recharged groundwater aquifers. Each I/I source would be attributed to a specific area which could then be managed and tracked in GIS. The major sources of I/I used in the model are the house buffer, sewer lateral, sewer main, and colocated trenches. A sensitivity analysis was performed to correlate volume and timing of wet weather response in the flow meter data to different I/I contributions from the house buffer, lateral, main, and other areas. The City had conducted previous studies which included private source I/I testing. This data was also used to aid proportioning the I/I volume across the different components.

The house buffer is a six foot buffer area around the perimeter of a house. Depending on whether the house downspouts are routed to the street or not, the roof area of the house may or may not be contributing water into the sewer system via the foundation drain or direct connection to the lateral. This six foot buffer can be easily managed and calculated using GIS. A determination of whether to include the roof area in the house buffer was based on the age of the house because changes to City Code defined three distinct groups of construction features. As represented in the model, homes built before 1936 included a high percentage of direct downspout connections to the sanitary sewer. Houses built between 1936 and 1963 did not have direct downspout connections into the sewer system, but a high percentage typically had downspouts directed to splash blocks near the house foundation. Water from the roof would be directed onto the ground adjacent to the foundation and would eventually get into the sanitary lateral via the foundation drain. Homes built after 1963 were mandated to have sump pumps installed which meant both the water from the foundation drain (house buffer) and the roof water are conveyed away from the foundation and lateral.

The sewer lateral source of I/I was represented again by a buffer area around the lateral. This is also applied to the sewer main. Different soil properties were assumed to represent lateral and main trench backfill. Usually the soil around the lateral is less permeable and may therefore be less likely to convey water to the pipe when compared to backfill around the house foundation.

The leakiness of the lateral and main was used as a secondary calibration parameter and can be unique to each metershed.

Co-located trenches are where storm and sanitary sewers are parallel and within a few feet of each other or there is some other storm sewer influence on the sanitary system. These sources are again calculated based on the area of interaction but may vary based on the separation between the storm and sanitary sewers. Co-located trenches are used as a secondary calibration parameter having an assumed response time different (shorter) than the house buffer but similar to the sewer main.

Groundwater

Infiltration occurs when groundwater flows into sewer infrastructure through cracks and other defects. Therefore, a model which is able to account for volumes of groundwater as well as changes in groundwater levels over time was desired. A great deal of effort went into understanding the complete hydrologic cycle and all the components available in the Green-Ampt groundwater recharge

continued on page 62



City of Columbus Blueprint Subareas and Connectivity

Watershed Article

continued from page 61

routine within the SWMM model. Evapotranspiration, deep losses, surface flows, sewer infiltration, and percolation are all processes represented in the model. Evapotranspiration includes evaporation which varies with the temperature. Previously recorded temperature values are used in all the historic simulations. Transpiration is dependent on vegetative cover and there are two different values (i.e. trees vs. grass) used in the model for transpiration based on the land cover as observed in ortho photos. Surface flows are calculated and along with rainfall are used in the percolation calculations. Percolation is the movement of water downward through the soil until it either reaches a sanitary lateral or sewer. The bottom of the sanitary system is the point of reference and if water does not enter the collection system it is categorized as a deep loss to the strata below.

Contract Service Areas

The City of Columbus provides sewer flow collection and treatment for 23 other municipal entities. These satellite communities all generate flows through collection systems that the City had little understanding of. Because some of these satellite tributary areas are relatively large, they could have an impact on the performance of the Columbus system as well as the nature of how Columbus meets its consent order mandates. This is especially true when a program based on source reduction versus transport and treat is pursued as in Blueprint. For these reasons it was deemed important to better represent flows from the satellite communities in the model than had been done in past Columbus models. The City met with each community individually in an effort to share the information it has and to aid each other in developing solutions needed to comply with the Ohio Environmental Protection Agency mandates. Where available, flow meter information, GIS data, and collection system models were obtained and this information was incorporated into the Columbus model. This information resulted in a more accurate and current representation of the flows from each community and resulted in a more accurate characterization of flows coming to the City's treatment plants.

Model Statistics

The final detailed model of the Columbus collection system has 46,364 pipes (1898 miles) of sewers, eight pump stations, 29 CSOs, and 69 active SSOs. The City now has 20 years of rainfall data, which is used in long term simulations. The model was calibrated using two years' worth of data and validated using another full year. To determine levels of service and alternative's effectiveness, a 20-year rainfall time series is run through the model and the output is analyzed using the Cunnane Plotting Position Method. Levels of service are characterized based on a flow-recurrence analysis of the 20-year model output. Output data compiled includes SSO activation, CSO activation, manhole flooding, predicted water in basement occurrences, and treatment plant bypass (number of occurrence, volume & peak rate).

Application of the Model

With this powerful model now available, the City is able to evaluate varying levels of I/I reduction by practice, by location, and by effectiveness. Areas of the City which have high I/I rates or high numbers of water in basement occurrences were identified as Blueprint areas and have become the focal point of alternatives development aimed at meeting consent order objectives. While Green Infrastructure will be the primary tool to improve stormwater quality, I/I reduction will be accomplished by lining sewer mains and laterals comprehensively and routing water away from building foundations via downspout redirection and sump pumps. The model is used to evaluate what levels of downspout and sump pump work should be employed in which locations. The model results will allow the City to confirm the mitigation of local overflows and water in basement occurrences. It will also allow the City to understand the bigger picture at the treatment plants and confirm mitigation of bypasses is successful. The alternative analysis is currently ongoing and the results may appear in a future Buckeye Bulletin article.

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Technical Article

BIG, BETTER, BEST – NEORSD'S APPROACH TO MANAGING WET WEATHER FLOWS

by Harry Shaposka, P.E., NEORSD; David Frank, P.E., and Brian Bland, E.I., ARCADIS U.S.

When you operate a combined sewer system, and peak wet weather flows are measured in the hundreds of millions of gallons per day, it is not viable to consider storage as a sole solution to the problem. An approach with "perpetual" capacity is required. Chemically-Enhanced High Rate Treatment (CEHRT) is a concept that provides this capacity in a relatively small footprint and it is an integral part of the Northeast Ohio Regional Sewer District's (Sewer District) combined sewer overflow (CSO) management plan.

The Sewer District owns and operates three wastewater treatment plants (WWTPs) in the greater Cleveland area and has responsibility for CSOs that impact Lake Erie and tributary streams. Each WWTP has different capabilities to process peak wet weather flows. In 2011, the Sewer District entered into a Consent Decree with the United States and Ohio Environmental Protection Agencies (OEPA/ USEPA) and the United States Department of Justice (USDOJ) for a Combined Sewer Overflow - Long Term Control Plan (CSO-LTCP). This program, dubbed Project Clean Lake, includes wet weather plant upgrades, collection system improvements, remote storage tanks and implementation of green infrastructure technologies limiting storm inflow.

The wet weather plant upgrades include demonstration and pilot testing and, based on results of these initial projects, eventual design, construction and full operation of wet weather facilities at each WWTP. The pilot testing and demonstration is required to prove that the wet weather facilities can reliably meet the effluent solids and bacteria limits required by the control measures. These CEHRT facilities include both chemically-enhanced primary treatment (CEPT) and high-rate disinfection (HRD).

The basic concept of CEPT is to use chemical coagulants and flocculants to alter the settling characteristics of suspended particles and improve settling properties. This improvement allows for higher surface overflow rates (SORs) and enables the Sewer District to construct settling tanks with smaller footprints (and lower cost to customers).

The basic concept of HRD is similar: achieve sufficient disinfection in a shorter period of time. This allows for smaller volume chlorine contact tanks – or even the use of existing bypass channels to provide disinfection time – both of which can potentially reduce cost. These solutions were originally presented during facility planning for each of the WWTPs and determined to be the most cost-beneficial technologies for solids and bacterial removal. To evaluate the effectiveness of CEPT and HRD for combined sewage treatment, the following Consent Decree performance evaluation criteria had to be demonstrated:

- Achieve 40.0 mg/l Total Suspended Solids (TSS) across seven consecutive activations. Ultimately, the CEPT facility design goal will be to meet 30.0 mg/l TSS.
- ♦ Achieve 126 cfu/100 ml E. coli (recreational season geometric mean), 284 cfu/100 ml E. coli (rolling seven days of activation geometric mean) and 0.038 mg/l total residual chlorine concentration.

CEHRT Work Plans were developed for each of the three treatment plants and submitted to the OEPA/USEPA for approval. Bench testing of flocculants and coagulants was performed to determine the optimum chemical combinations and dosages. The chemicals selected for the pilot and demonstration testing were ferric chloride and anionic polymer. This combination results in solids removal rates as high as 80 percent in bench testing. The range of ferric chloride dosage shown as optimum was 20 to 30 mg/l. The range of polymer dosage shown as optimum was 1 to 3 mg/l as neat polymer.

Sodium hypochlorite and sodium bisulfate were selected for disinfection and dechlorination chemicals. The range of sodium hypochlorite (NaOCL) concentrations and associated contact times will be evaluated during piloting of HRD. Chlorine dosages ranging from 3 to 20 mg/l have been tested in conjunction with contact times from 3 to 20 minutes. At each of the three WWTPs a prefabricated steel tank is used to test disinfection of CEPT effluent. The tank is designed for a 100 gpm flow rate; however, the pumped rate can be throttled to provide some variation in flow rate. The test tank was also designed to take samples at multiple locations to simulate different chlorine contact times.

The primary purpose of the CEHRT pilot/demonstration project is to demonstrate to the OEPA/USEPA that the defined performance criteria can be consistently met using CEPT and HRD. A secondary benefit of this demonstration testing is confirmation of the design metrics used for full-scale implementation and operations guidelines. A summary of current design capacities and future capacity (SOR) goals is presented in Table 1.

	Southerly WWTP	Easterly WWTP	Westerly WWTP
Consent Decree	125 MGD (PEB)	400 MGD (CSO 001)	411 MGD (CSO 002)
Design Criteria			
Future Full Scale	PST 11-14 Expansion	Design Planned for 2015	Design Planned for 2017
CEHRT Status	In Construction		
CEPT Peak Design Flow Rate	260 MGD through PST 11-14	400 MGD	411 MGD
SOR Requirements	Up to 3,500 gal/ft ² -d	Size of future tanks design	Size of future tanks design depends on pilot results
(gal/ft²-d)	(75.6 MGD/tank)	depends on pilot results	
High Rate Disinfection	PEB Conduit	Future HRD Reactor	Future HRD Reactor
Contact Time	<15 minutes	<15 minutes	<15 minutes

Table 1- Current and Future Design Capacities of all Three Facilities

Technical Article



Because each WWTP has different existing facilities, and a different long-term plan for application of high-rate processes, a different approach was taken for each CEHRT pilot/demonstration facility, as described below.

Easterly WWTP - Pilot Plant Approach

The Sewer District's Easterly WWTP has a secondary treatment capacity of 330 mgd and a primary treatment capacity of 400 mgd. Peak wet weather flows currently exceed the 400 mgd capacity and overflow to Lake Erie. CEHRT implementation involves construction of all-new facilities; existing facilities cannot be converted to CEHRT. Subsequently, a pilot plant approach was taken for testing the high-rate processes before design implementation to further confirm process efficacy and establish reasonable design metrics.

A new, temporary building (Pilot Building) was constructed near the Headworks Building to house the pilot plant and provide a close source of screened wastewater for testing. The pilot plant process was designed for a flow rate of 100 gpm to test an effective surface overflow rate of up to 7000 gallons per day per square foot (gpd/ sf). A submersible pump conveys wastewater to the Pilot Building from either the plant overflow channel or screened wastewater from an alternate channel. The fabricated steel CEPT pilot tank receives the flow in the mixing chamber where ferric chloride is injected and mixed (see Photo 1 right). Mixed flow is directed beneath a baffle and polymer is introduced before flowing into the settling zone. The settling zone contains variable overflow locations and removable baffle walls which, along with multiple sample points, provides the ability to assess a range of SORs. Settled wastewater overflows rectangular, non-contracted weirs, flows through a magnetic flow meter and enters the HRD pilot tank. The HRD tank is identical at all three WWTPs.

Pilot testing is ongoing at the Easterly WWTP and detailed design of a CEPT-HRD facility will proceed following acceptance by the OEPA/USEPA of the pilot test results.



Photo 1 – Easterly Pilot Plant CEPT Tank with Ferric Chloride and Polymer Mixers

Westerly WWTP - Partial-scale Demonstration Approach

The Sewer District's Westerly WWTP already includes a Combined Sewer Overflow Treatment Facility (CSOTF) capable of storing up to 6 million gallons of wastewater. The CSOTF receives wastewater flow exceeding the WWTPs peak capacity of 100 mgd and acts first as a wet weather flow equalization and storage basin. Once filled, the CSOTF transitions to "overflow" mode with hydraulic capacity of 300 mgd. Because historical maximum flows have greatly exceeded 300 mgd, sometimes as high as 900 mgd, additional primary treatment capacity is needed. Based on planning documents the required goal of implementing CEPT at Westerly is to increase the CSOTF SOR to as high as 7000 gpd/sf and add disinfection capabilities.

To demonstrate CEPT at Westerly a partial-scale demonstration is being performed using one quarter of one of the four CSOTF tanks

continued on page 72



Figure 1 - Easterly WWTP CEHRT Pilot Plant Overview.



continued from page 71

(Quad A, Tank A). Tank A was modified with baffling and overflow weirs (comparable to those associated with the anticipated full-scale design). Chemical storage and feed facilities were also installed to support this partial-scale demonstration. During a wet weather event the dewatering pump station provides wastewater to Tank A at up to 18.75 mgd. Chemical addition is flow paced to achieve target dosage rates and assess optimum concentrations associated with a range of SORs. The ferric is fed in the wet well upstream of the pump and dispersed using an induction mixer. Polymer is fed through a diffuser at the influent discharge pipe to Tank A and an air diffuser just before the baffle wall. Approximately 100 gpm of the Tank A (CEPT) overflow is pumped to the HRD test tank for chlorination and dechlorination prior to discharge. Ultimately, it is the goal of CEPT implementation to achieve a 411 mgd peak hour capacity. All CSOTF tanks will be modified to operate with chemically-enhanced settling capabilities; in addition, two additional quads will be constructed. Figure 2 shows the location of the demonstration tank in the CSOTF.

The Westerly test report deadline is 2016. Partial scale demonstration testing is ongoing at this time.

Southerly WWTP - Full-scale Demonstration Approach

The Southerly Wastewater Treatment Plant is designed to treat peak flows up to 400 mgd (see Figure 3 for a flow schematic of Southerly WWTP Headworks, CEHRT and Primary Settling facilities). It normally operates in two stages, with the carbonaceous biochemical oxygen demand being treated in the first stage and nitrification



Figure 2 – Westerly WWTP CEHRT Demonstration Overview.



Figure 3 – Southerly WWTP CEHRT Demonstration Overview.
occurring in the second stage. The first stage is limited to a capacity of approximately 175 mgd. Operating in parallel with the first stage are eight primary settling tanks (PSTs 11-18). Two of these PSTs are normally in operation in conjunction with ten primary settling tanks in first stage. When wet weather flows are expected to exceed 400 mgd, additional PSTs from the group of PSTs 11-18 are brought online to serve initially as wet weather storage. Once filled, the additional PSTs transition to a flow through mode of operation. The effluent from the first stage process and the eight PSTs is pumped by an intermediate pumping station to the second stage treatment process at flows up to 400 mgd. Flows above 400 mgd are bypassed to the Cuyahoga River via the Primary Effluent Bypass (PEB) channel. With successful implementation of CEPT in four of the PSTs 11-18 (specifically PSTs 11-14), the peak wet weather treatment capability is planned to increase to 735 mgd when future parallel treatment operation is implemented.

The availability of the eight "wet weather" PSTs at Southerly WWTP provided the opportunity to perform full scale demonstration of CEPT. Primary Tank 18 (easternmost tank) was chosen to operate as a CEPT tank because of its proximity to the planned HRD pilot building, and due to its separation from the four proposed CEPT tanks. This plan allowed for PSTs 11-14 to be modified to serve as CEPT tanks by installing a sloped floor and flushing gates, new influent channel with chemical feed induction mixer and some hydraulic flow control features.

The full-scale demonstration tank (PST 18) was operated at flows up to 70 mgd to prove viability of operation at SORs of approximately 3500 gpd/sf. Primary influent was gravity fed from the existing influent channel, through baffling to provide sufficient coagulation time, and into the tank. Polymer was fed immediately downstream of the PST 18 influent sluice gates to provide adequate, yet low energy mixing of the flocculant. A small pump in the PST 18 effluent channel (which was isolated from the other PST effluent flow) conveyed 100 gpm of CEPT effluent to the HRD Building for piloting of HRD. The fabricated steel HRD tank was identical to Westerly and Easterly. Chemical storage and feed equipment were housed in this same building located just east of PS 18.

Full-scale demonstration testing is ongoing at Southerly WWTP.

<u>Summary</u>

The District has submitted pilot/demonstration testing reports documenting successful testing for two of the three WWTPs and is continuing with testing at the third. Proactive planning, thoughtful program design, and consistent execution have positioned the District to significantly improve water quality in Greater Cleveland, while minimizing the expense and impacts to their customer base.

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TURNING A POLLUTANT INTO A RESOURCE

by Barry Liner, Ph.D., P.E. and Sam Jeyanayagam, Ph.D., P.E., BCEE

In excess, nutrients can be harmful water pollutants. Nutrients are found in agricultural and home fertilizers as well as agricultural operations. Sources include confined animal feeding operations, industrial pretreatment facilities, septic systems, and water resource recovery facilities (WRRFs) as well as municipal and industrial stormwater runoff.

According to the U.S. Environmental Protection Agency (EPA), more than 100,000 mi² of rivers and streams, close to 2.5 million ac of lakes and ponds, and more than 800 mi² of bays and estuaries are affected by nitrogen and phosphorus pollution. Excess nutrients can lead to algal blooms, which can produce toxins and result in hypoxic zones. Algal blooms cost the tourism industry some \$1 billion annually, according to EPA. These substantial impacts are the reason regulatory nutrient limits are expanding across the country.

Nutrient removal at WRRFs

Nutrient management begins with nutrient removal to meet permit requirements. WRRFs can achieve very low nutrient discharges through a variety of processes, primarily biological nutrient removal (BNR), physical separation, and chemical methods. Most technologies capable of removing both nitrogen and phosphorus utilize BNR, which relies on bacteria to transform nutrients present in wastewater. In BNR, bacteria are exposed to the influent from primary treatment. The selection of a BNR process should be based on influent flow and loadings, such as biochemical oxygen demand (BOD), nutrient concentrations, and other constituents as well as target effluent requirements.

Select species of bacteria can accumulate phosphorus, while others can transform nitrogen, and a few can do both. Achieving significant reductions in both nitrogen and phosphorus requires careful design, analysis, and process control to optimize the environment of nutrient-removing organisms. The uptake of nutrients and growth of microorganisms could be inhibited by a limiting nutrient, available carbon, or other factors, including oxygen levels.

Some nutrient removal systems rely on two separate processes for nitrogen and phosphorus removal. In some cases BNR is used to remove the majority of nitrogen and phosphorus, and then chemical methods are used to further reduce phosphorus concentrations. Mainstream nutrient treatment takes place within the typical plant process flow. However, *sidestream treatment* refers to liquid resulting from biosolids treatment (anaerobic digestion and dewatering) that is intercepted with an additional treatment goal — to remove nutrients from a concentrated stream and minimize mainstream impacts. Like mainstream nutrient treatment processes, sidestream treatment can also vary from biological to physical and chemical removal methods.

Nitrogen removal

Nitrogen can be removed from wastewater through physiochemical methods, such as air-stripping at high pH, but it is more cost-efficient to use BNR. Conventionally, this method utilizes the natural nitrogen cycle, which relies on ammonia-oxidizing bacteria to transform ammonia into nitrites (NO_2^{-}) after which nitrite-oxidizing bacteria form nitrates (NO_3^{-}) — a process called nitrification. Other species of bacteria can transform these compounds into nitrogen, a harmless gas (N_2) — a process called denitrification. Nitrification can occur



Nutrient removal is an essential part of wastewater treatment to help prevent algal blooms, as shown in this 2011 satellite photo of an especially severe case in Lake Erie. Credit: MERIS/NASA; processed by NOAA/NOS/NCCOS

in the aeration basin together with BOD oxidation as they both require aerobic conditions. In contrast, denitrification takes place in an anoxic reactor with the nitrate providing the required oxygen. As denitrification occurs, nitrogen gas is produced and released safely into the atmosphere, where nitrogen gas is more abundant than oxygen. Nitrogen gas is inert and does not pollute the atmosphere.

When performing biological nitrogen removal, it is important that the activated sludge has enough available carbon to sustain denitrification. The bacteria that mediate denitrification need carbon to build new cells as they remove nitrogen. This means that utilities must make decisions on how best to use the carbon for the combinations of nutrient removal/recovery, energy generation, and/or recovery of value-added nonnutrient products.

The nitrogen removal rate is also dependent on the amount of time that sludge spends in the reactor (solids retention time), the reactor temperature, dissolved oxygen, pH, and inhibitory compounds. Optimal conditions differ for nitrification and denitrification, but both can be carried out simultaneously in the same unit if anoxic and aerobic zones exist. Some process configurations, such as oxidation ditches and sequencing batch reactors, combine nitrification and denitrification within a single tank while others incorporate two separate stages. Nitrogen removal processes can also be broken down into two categories based on whether bacteria are suspended within the wastestream or fixed to media. Examples include integrated fixed film activated sludge (IFAS) and denitrification filters.

A method of nitrogen removal that has gained favor over the past decade is deammonification, a two-step process that avoids nitrate formation. Aerobic ammonia oxidation to nitrite occurs in the first phase, then nitrogen gas is produced through anaerobic ammonium oxidation (also known as *Anammox*). Anammox is a biological process carried out by specialized bacteria that oxidize ammonia, and nitrite is used as an electron acceptor (oxygen source) under anaerobic conditions.

Phosphorus removal

Unlike nitrogen, phosphorus cannot be removed from wastewater as a gas. Instead, it must be removed in particulate form through chemical, biological, hybrid chemical–biological processes, or nano-processes. Nano methods involve membranes and include reverse-osmosis, nanofiltration, and electrodialysis reversal. Chemical methods (chem-P) typically utilize metal ions, such as alum or ferric chloride. These compounds bind with phosphorus and cause it to precipitate and be removed by sedimentation and filtration. Chemical methods are influenced by a number of factors including the phosphorus species, choice of chemical, chemical-to-phosphorus ratio, the location and number of feed points, mixing, and pH.

Enhanced biological phosphorus removal (EBPR or bio-P) relies on phosphorus-accumulating organisms (PAOs) capable of removing phosphorus in excess of metabolic requirements. While many factors impact the EBPR process, the two most important requirements are availability of a readily biodegradable carbon source (food) and cycling of the PAOs between anaerobic and aerobic conditions. In the anaerobic zone, PAOs take up and store carbon. The energy required for this is obtained by releasing internally stored phosphorus. In the subsequent aerobic zone, the stored carbon is assimilated and the energy is used to uptake excess phosphorus.

Consequently, the design and operation of EBPR systems must consider the availability of a readily biodegradable carbon source (such as volatile fatty acids) and the integrity of the anaerobic zone by eliminating dissolved oxygen and/or nitrate contributions from the influent, return streams, and backflow from the downstream aerobic zone. As with biological nitrogen removal, oxygen levels, solids retention time, and temperature play an important role in EBPR efficiency. It is common practice to add a standby chemical system to account for poor EBPR performance. Many existing biological nitrogen removal processes can be modified to remove phosphorus by adding an anaerobic phase.

However, economic and environmental trade-offs exist, such as greenhouse gas production in the form of nitrous oxide as well as increased energy demands. Nutrient removal techniques can also affect biogas production and dewatering. The dewatering process is negatively affected by bio-P. During anaerobic digestion, flow from the bio-P process can decrease the efficiency of dewatering and require additional polymer as a coagulant, particularly when there are fewer beneficial metal ions, such as iron and aluminum.

From removal to recovery

Beyond simply removing nutrients, WRRFs also can reclaim nutrients. Recovery not only prevents nutrients from entering waterbodies but provides a supply of these essential resources. The most straightforward way of recovering nutrients is through biosolids. EPA estimates that the approximately 16,000 WRRFs in the United States generate about 7 million tons of biosolids. About 60% of these biosolids are beneficially applied to agricultural land, with only 1% of crops actually fertilized with biosolids. However, generating solid fertilizer from biosolids is the most common method of nutrient recovery from wastewater.

Wastewater operations that have adopted the principles of becoming a utility of the future are using the nutrient removal process to produce marketable products beyond simple biosolids, including nutrients, energy, electricity, and vehicle fuels. Phosphorus used for fertilizer is a finite resource, with some estimating that demand will outpace supply within the next century. In a similar vein, ammonia is produced via the Haber-Bosch process, which consumes natural gas (a nonrenewable resource), is an energy-intensive process, and is associated with greenhouse gas emissions. Interest in recovering nutrients from wastewater has increased over the last decade. However, the maturity of nutrient recovery technologies varies, and each has its advantages and disadvantages.

Sidestream treatment of sludge and sludge liquor, where nutrients are more concentrated, is generally the preferable target for nutrient recovery, but resource recovery complexity can vary widely depending on local conditions. In addition to nutrients, there are other types of products that can be recovered, such as metals, heat, and potable or drinking water, which may bring financial rewards and benefits to help offset utility costs.

Technical Article - Nutrient Removal and Recovery

continued from page 79

These are some nutrient-based and other resources that can be recovered at a WRRF:

- Solid fertilizer from biosolids
 - · Land application of biosolids recycles nitrogen, phosphorus, carbon, and other macronutrients.
 - Soil blends and composts are potential phosphorus recovery products.
 - Incinerator ash is also a source of phosphorus for recovery.
- Solid fertilizer from the treatment process
 - Struvite precipitation and recovery: By this method, both phosphorus and ammonium can be simultaneously recovered, producing a high-quality fertilizer from some sidestream systems.
 - Other methods of phosphate precipitation such as brushite are also becoming common.
- Water reuse
 - Irrigation with reclaimed water can have some nitrogen and phosphorus benefits.
- Chemical recovery
 - $\circ~$ Structural materials can be obtained from carbonates and phosphorus compounds.
 - Proteins and other chemicals, such as ammonia, hydrogen peroxides, and methanol, can be recovered.
 - Solids can be stored for future mining.

A roadmap to nutrient recovery

With the complexity of nutrient removal and recovery alternatives available, utility staff may wonder how to move forward to address current needs or plan for future impacts of nutrient limits. The Water Environment Federation (Alexandria, Va.) has released a Nutrient Roadmap to support the movement toward smarter and sustainable nutrient management in the context of each WRRF's specific regulatory climate and stakeholder preference. The Roadmap provides a straightforward, high-level framework for planning, implementing, and evaluating different steps of a net-zero nutrient discharge strategy and can be found at www.wef.org/nutrientroadmap.

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UTILITY COMMITTEE INVITATION

by Nicholas Domenick, Chair

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