

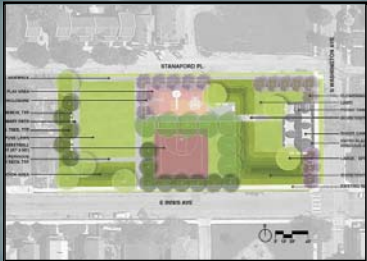


Buckeye Bulletin

Ohio Water Environment Association | Volume 87:2 | Issue 2 2014



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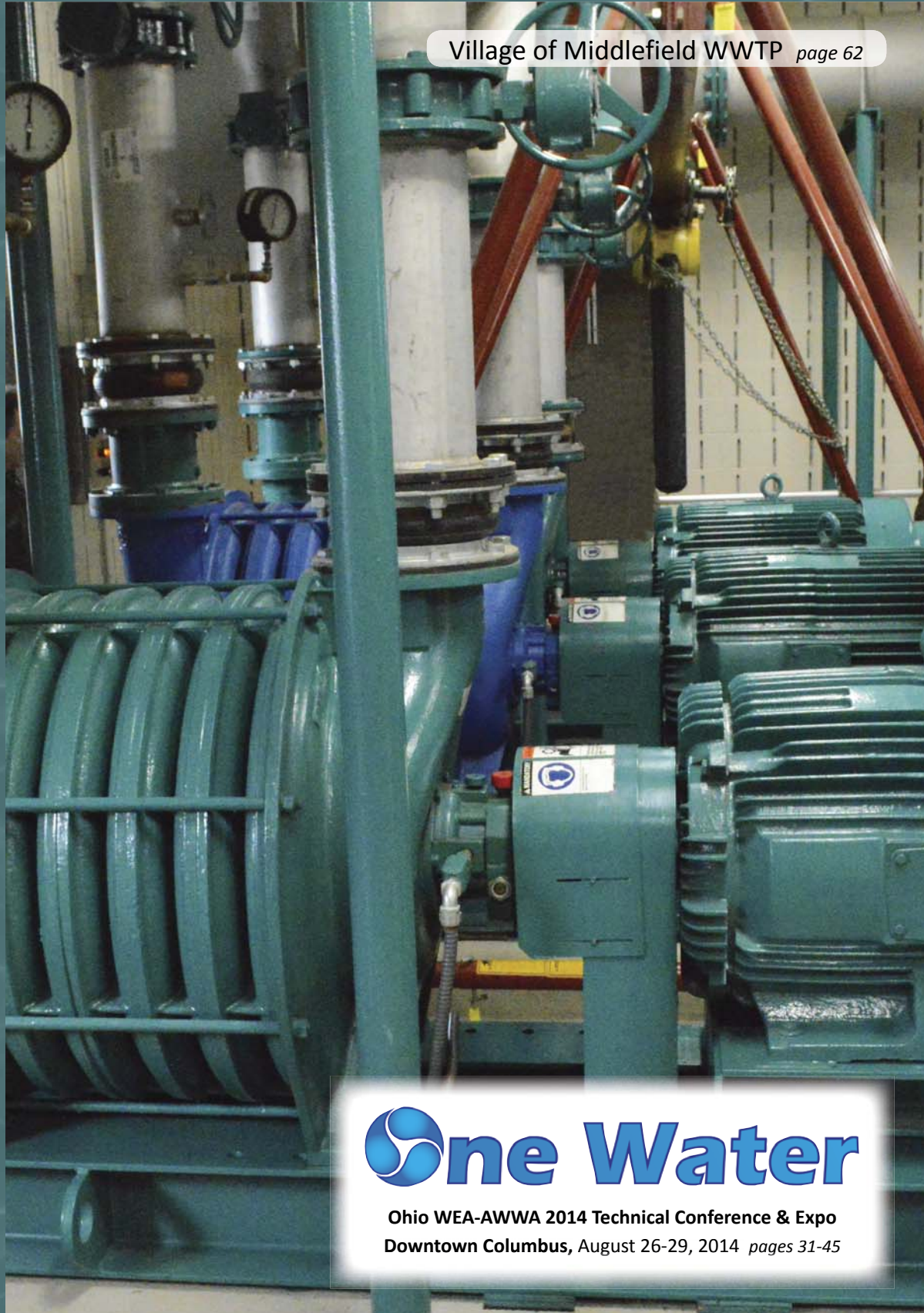
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Water Environment
Association

*Preserving & Enhancing
Ohio's Water Environment*

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One Water

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Downtown Columbus, August 26-29, 2014 pages 31-45

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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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Distribution 2,300 - includes members, government officials, and more.

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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.

OWEA needs your skill, experience, and energy. Contact OWEA at info@ohiowea.org or the chair of a committee that interests you for more information.

OWEA ASSOCIATION NEWS

OWEA Summer Intern

Sam Hollyer will begin an internship at OWEA on May 1st. Sam is a senior at Ohio State University where he is studying Economics in Business and Economy, Environment, Development, and Sustainability (EEDS) with a specialization of Sustainability in Business. Sam is a member of Net Impact and wants to make a career out of helping Ohio business mitigate their environmental impacts. Upon graduation, Sam hopes to work for an environmental nonprofit or in EHS.



OWEA Attends NY/NJ WEFMAX

Judi Henrich and Amy Davis attended the March 26-28, 2014 WEFMAX in Weehawken, New Jersey. 65 attendees from 10 Member Associations and WEF staff participated in this WEFMAX. Henrich represented OWEA with a technical session on Membership Value, Retention, and Benefits.



Bob Fisher, NJWEA President; Amy Davis, OWEA Executive Assistant; Steve Fangmann, NYWEA President, Duyen Tran, WEF HOD Speaker-Elect; Wade Riess, WEF MA Relations; Paul Bowen, WEF Vice President, Judi Henrich, OWEA Executive Manager; and Dianne Crilley, Senior Manager MA Services.

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.
- ◆ **\$128 for a 30 day posting** if not a member.
- ◆ **\$128 for a Professional Membership**
We encourage you to join OWEA and reap all the benefits of membership. Same price as a posting!

Click on the Careers tab at www.ohioweat.org or contact OWEA (614.488.5800 or info@ohioweat.org).



May 2014

- 13-14 SWOWEA Operations Workshop
- 15 NESOWEA Section Meeting
- 15 SEOWEA Section Meeting
- 15 SWOWEA Section Meeting
- 21-22 Plant Operations/Laboratory Analysis Workshop
- 28 NWOWEA Section Meeting

June 2014

- 26 OWEA Executive Committee Meeting
- 26 OWEA Annual Business Meeting

July 2014

- 1 Articles and Ads Due for August Buckeye Bulletin
- 17 SW LAC Meeting
- 18 NE BioMass-ter's Golf Outing

August 2014

- 1 NWOWEA Section Meeting
- 1 SEOWEA Friends and Family Night
- 26-29 One Water - Ohio WEA/AWWA Joint Conference
- 28 OWEA Membership Meeting at One Water
- 29 OWEA Executive Committee Meeting

September 2014

- 18 SWOWEA Section Meeting
- 19 Wastewater LAC Exam App Deadline
- 27-10/1 WEFTEC | New Orleans

October 2014

- 1 Articles and Ads for November Buckeye Bulletin
- 24 Wastewater LAC Fall Exam
- 30 OWEA Watershed Workshop

December 2014

- 11 Biosolids Workshop

2014 Membership Rates

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

- ◆ Professional & Academic.....\$128
- ◆ Operations.....\$73
- ◆ Young Professional\$61
- ◆ Student.....\$25
- ◆ Executive.....\$322
- ◆ Corporate\$400

Membership information may be found at:
<http://www.ohioweat.org/memberships.php>

As the original "Chairman of the Board" once crooned, "It Was a Very Good Year." Incidentally, that performance won Mr. Sinatra the Grammy for Vocal Performance of the Year in 1966, which was the year of my birth. I think that the jury is still out on whether that was a very good year. But I am referring to this year, 2013-2014. It has indeed been a very good year and I would like to take this opportunity to summarize OWEA's past year for you.

First, on the topic of governance, we have begun developing a policy and procedure for each of our 28 committees to insure that committee goals, directions, general operating procedures, and succession plans are well documented for use by our future committee chairs. This is going to be an ongoing process, which will carry forward into next year as it will take some time to compile and approve all of these P&Ps.

We have also compiled and reviewed the results of our 2013 Member Survey and are using this data in our association master planning for the future. Yes, the Executive Committee (EC) did actually review all of the results and are really using the information you, as members, submitted so that we can continue to steer the association in the direction which provides you with the most benefit. The majority of the results were as expected and primarily positive indicating your collective satisfaction with how things are being run, from the office staff on down to the committee leadership. Many of you indicated that you rely on OWEA more than other organizations to be kept informed about our industry.

One thing I took away as being a little surprising is that many of you indicated that you are not fully aware of the services and benefits that your OWEA membership provides. This tells me that we are not doing as good a job as we should in communicating with our membership. Hopefully you receive our once or twice weekly OWEA Update emails with announcements and links to our various events throughout the year. If you do not see these regularly, please contact the office to make sure we have your correct email address on file.

The majority of you would like to see more webinars, WEF summaries, and periodic updates about regulations. We will be addressing these going forward. You also challenged the EC to do more outreach with the general public, schools and universities, and with elected officials. We are doing just that: sponsoring school field trips to local municipal water reclamation facilities; starting up (or revamping) OWEA student chapters; hosting legislative events; and authoring letters on policy with regard to water quality and funding issues.

The OWEA is more relevant now than ever before. In late February we hosted a first class legislative reception at the Ohio Statehouse in Columbus. It was our first venture into this unknown and we learned a great deal from the experience. This, in addition to the WEF Washington D.C Fly-Ins, which we continue to support and participate in, has really helped the OWEA become recognized



Dan Sullivan
OWEA President

as a valuable source of science-based, factual knowledge. OWEA's opinion and expertise has already been tapped by the state's legislative body on topics ranging from nutrients to funding. We have authored letters to the Governor in support of water quality related matters, to the US House of Representatives concerning the Water Infrastructure Finance and Innovation Act (WIFIA), and most recently to Ohio's US Congressman Chabot in support of HR 2707, which in effect prioritizes public funds for infrastructure programs that make the most sense for communities. As I have said before, "this is not your father's" OWEA any longer.

We continue with the planning of the 2014 One Water Ohio conference, which is our first ever joint

conference with the Ohio AWWA and it is taking shape to being a grand event indeed! With about 4 months left to go, we are already seeing what is looking to be our largest technical conference and exhibition ever, with record attendance and sponsorship. In addition, OWEA will be hosting our first Operations Challenge Invitational, which will bring teams in from surrounding states to compete with Ohio teams. The conference is August 26-29 and will include 15 different technical tracks and many entertaining networking opportunities. This epic event should not be missed folks.

OWEA continues to grow. Our annual budget is just shy of \$500,000.00 and we now have sustained membership numbers of over 2,100. This has allowed us the opportunity to appoint a third Delegate to represent the OWEA at WEF. We also now have 11 municipalities which have taken advantage of the WEF Utility Partnership Program. We have set up online registration and calendar entries for 70 events, 5 major state workshops, including many section and committee meetings, as well as continuing as the major supporter and planner of Water for People fundraisers as well.

As you can see, we have so much going on and so much to be excited about. My hope is that you will find inspiration and join one of our many committees or become involved in some other vein. It has been a truly rewarding experience for me and I have learned much from my involvement in the OWEA from the section level through my year as President of the Association.

I want to thank you for allowing me the opportunity to serve the membership and entrusting me to lead the association this past year. I want to also thank the outstanding, dedicated, and passionate members of the Executive Committee. I have been honored to serve alongside of you all. Lastly, many thanks to Judi and Amy, our professional staff at the office. Their enthusiasm, undaunted support, and reliable service have been everything I could have asked to assist me in keeping the ship afloat and full steam ahead.

It has truly been "A Very Good Year"! See you around.

Dan Sullivan, OWEA President
dan@sullivanenvtec.com

Attention All OWEA Members

You are invited to attend OWEA's 2014 Annual Business Meeting and Luncheon

Notice of OWEA's 2014 Annual Meeting - Thursday, June 26, 2014

As OWEA is collaborating with OAWWA to hold the One Water | Ohio WEA-AWWA 2014 Technical Conference & Expo in August 2014, we will not be holding OWEA's traditional Annual Conference in June. The 2014 Annual Business Meeting will be held in June at a nonconference location to allow state and section officer, and committee chair transitions to occur in the traditional time frame.



Event: OWEA 2014 Annual Membership Meeting
Date: Thursday, June 26, 2014
Time: 11 a.m. to 1 p.m.
Location: Mohican Lodge and Conference Center
 PO Box 429, 1098 Ashland County Road 3006
 Perrysville, OH 44864

Lunch will be provided for members in attendance.

Register now at www.ohiowea.org



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.
- ◆ **ALL employees** 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. **ALL employees 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 5 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.

Contact OWEA at 614.488.5800 or info@ohiowea.org and we'll help your utility with enrollment!

INNOVATION AND TRANSFORMATION

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



What is Innovation?

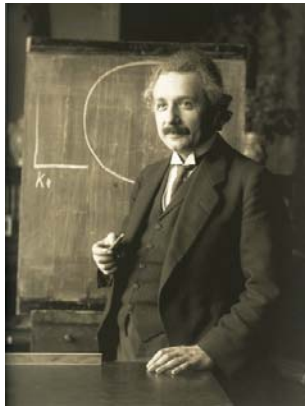
Innovation has been a frequently discussed topic at the Water Environment Federation (WEF) for the past several years. In its “Water for Jobs” campaign in

2012, WEF led discussions on how innovation can help create jobs in America, end the Great Recession, and address crumbling infrastructure in our communities. Their logo communicates the message that “water puts America to work.” While WEF wanted “water” to be part of the 2012 campaigns for public office, I believe that WEF’s message communicates a pure and simple message that remains appropriate today.

I believe that a good definition for innovation for our industry is the discovery of better solutions to meet new requirements or fulfill those of existing markets or society. Innovation can be accomplished through the creation of more effective products, processes, services, technologies or ideas made available to markets or society for their ultimate betterment. Traditionally, an innovative idea is one that is also considered important or transformative.

Breaking Old Paradigms and Forming New Ones

There have been times in history when the collective body of educated society feels that they have reached the apex of all knowledge and that there is nothing left to be learned in the universe. One of these times was in the year 1850. At that time, scientists were certain that the universe was governed by the laws of Galileo, Copernicus, and Newton. However, during the next 70 years, many established beliefs in virtually all areas of life and society gave way to the birth of new ones. One of the best examples of this pertained to physics experiments by Albert Einstein (1879-1955), which ultimately won him the Nobel Prize and gave birth to the Atomic Age. It was Einstein’s initial work in 1905 entitled the Photoelectric Effect, which established a basis of understanding correlating mass and energy.



Albert Einstein (1879-1955)

The pattern of establishing new beliefs and breaking old molds was repeated many times between 1850 and 1920. Profound changes in thinking were not strictly limited to physics, but all human endeavors. Notable examples outside the field of science included the Impressionist Movement in Art, Jazz Music, Natural Selection by Darwin in 1859, and the works of Karl Marx on government. As I have written in previous columns, developments during the second half of the 19th Century included the widespread application of public sanitation.

Innovation in the Automobile Industry

I have long been interested in the styling of automobiles and the innovation that occurred from the time that the Model T Ford was introduced into the market in 1909 to the early 1960s when I was a

boy. The transformation that occurred during this period changed the look of the automobile, and ultimately, the way America viewed it was nothing short of remarkable.

I believe that there was no greater influence over the automotive industry during the first half of the 20th century than the late Harley Earl (1893 - 1969), Chief of the Art Division of General Motors. An imposing figure at 6 feet 6 inches tall, he had a long and prolific career dating from the 1920s to the early 1960s. During his long and prolific career, Mr. Earl’s team transformed the look of the automobile from that of an anemic horseless carriage to that of a sleek, powerful, and magnificent work of art in less than three decades. Some of you may remember a TV commercial for Buick in 2002 depicting the ghost of Harley Earl speaking with golf legend Tiger Woods.



Harley Earl (1893-1969)

One of Mr. Earl’s “breakout” cars was the 1939 Y-Job. During a time when America was being introduced to “the future” through the 1939 World’s Fair, Earl created a driving machine with hidden headlights and a new look unlike others from that era. Mr. Earl’s other transformations included the swooping tail fin of the 1949 Cadillac and the 1953 Corvette.



1939 Y-Job



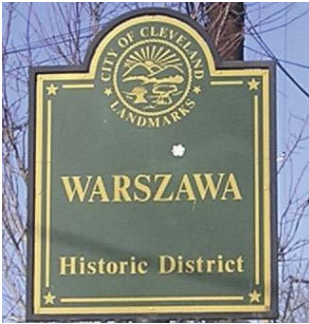
1953 Corvette

Perhaps more importantly than the look of the automobile was how it helped transform society. The car went from serving as a summer toy for the well-to-do to a mainstream necessity. Soon everyone wanted one. This love and reliance on the automobile helped transform American culture after World War II and facilitated an exodus from older cities to new suburbs in the 1950s. The role that the automobile played in modern society was irreversible and profound.

Transforming Neighborhoods

Prior to the mainstream influence of the automobile, old neighborhoods developed around core downtowns. Few in the early 20th century had automobiles, therefore ready access to street cars was critical. Neighborhoods, which were the life blood of community, radiated from the central core by thoroughfares traveled by street cars.

My own family is typical of those living in cities at the early 20th century. Following immigration from Bohemia (the Czech Republic) to Cleveland in 1904, they settled in Slavic Village, also called the Warszawa Historic District, with others speaking their language and experiencing community.



*Sign to Slavic Village:
Warszawa Historic District*



Krusinski's in Slavic Village

The Slavic Village neighborhood is south of downtown Cleveland and at one time was the center of Polish and Czech communities in the early 20th century. Several decades after setting there, my family moved to nearby Garfield Heights. Unfortunately in the time since my family left Slavic Village, the neighborhood experienced the trials and tribulations of urban decay. However, I am pleased to note that the village has experienced some revitalization.

The Cleveland community of which I was most familiar was Garfield Heights. There was always something to see and do. Streets with sidewalks and houses with front porches brought people together. Polka festivals were held in the park in fall. On my grandparents' street alone were immigrant Polish, Scottish, Slovenian, Italian, and Czech families. I was energized by this diversity.

My parents were typical of many in the post war generation. Tired of high density housing, survivors of the Depression and World War II, and wanting a new beginning, they moved to Lake County Concord Township in 1953. Their second house, built in 1963, was situated on a wooded lot, near a creek and ten miles from the nearest city, Painesville. While living in this setting was nice, ordinary things like riding a bicycle for transportation to visit friends, which were commonplace in cities, were impossible. Having two good cars was essential.

Unlike my parents, I did not view older neighborhoods as past their usefulness or obsolete through the proliferation of the automobile, but a vital source of ongoing community. When I bought my house in Columbus, I chose the Clintonville neighborhood, which is a pretty, tree lined, urban neighborhood north of the Ohio State University with good access to public transportation and nearby shopping.

I find discussions today on transforming neighborhoods fascinating. I understand that there are many motivating factors behind this movement including increasing environmental regulation, improving stability, and restoring economic vitality. To me, this is part of what is meant to be innovative. But what I also realized is that this is a way to honor our older neighborhoods, which were and remain a source of heritage, identity and community, as Cleveland's Slavic Village was for my family a century ago.

So how are communities reinvented? At this point I defer to the true experts. But in saying this, I am pleased to see the creative blending of technical and artistic disciplines in ways that I could not have imagined before. My epiphany came from a company (Stantec) webinar on Green Infrastructure (GI). It showed how tree planting and permeable pavement

can be applied in a holistic way to reduce wet weather challenges and improve beauty and livability of neighborhoods.

After seeing this webinar, I thought to myself, "wow this is why I like what I am doing." In the future I look forward to participating collaboratively with horticulturists, ecologists, arborists, site development specialists, transportation engineers, and landscape architects to develop solutions that are effective, environmentally sustainable, functional, vital, beautiful, socially relevant, and conducive to new business opportunities. To me this is the true definition of innovation.

Our industry is in an exciting time. We are learning how GI can be used to address problems associated with stormwater and sanitary drainage, and GI is growing in popularity. Through my readings, listening to others and participating in projects, I have learned that benefits of GI can:

- ◆ Create more beauty, open spaces, and recreational opportunity for enhanced social interaction, which improves the human spirit and promotes good health
- ◆ Increase property values with more owner occupied properties, less crime, and more potential for economic development
- ◆ Reduce urban heat island affect due to more tree planning, more vegetation, better air quality and a smaller carbon footprint
- ◆ Increases ground water recharge, provides less urban runoff, less stream scour, and better water quality

The concept of applying GI to urban neighborhoods is just beginning. As knowledge and experience is gained, the best is yet to come.

Many of cities in the United States are seeing the potential benefits of GI and beginning efforts of their own. For information on work the City of Columbus is doing to promote GI, please refer to the article in this issue of the Buckeye Bulletin, titled "Blueprint Columbus: Clean Streams, Strong Neighborhoods," on page 50.

Dale E. Kocarek, PE, BCEE

Chair, Government Affairs Committee: WEF Delegate

Stantec Consulting Services, Inc.

dale.kocarek@stantec.com



Example of Green Infrastructure in an Urban Setting



Mark Livengood



Dale Kocarek



Doug Clark

As I write my message I am hopeful the winter weather has passed for this season. Public utilities have endured some record low temperatures, followed by wide swings in temperatures, resulting in a record number of water main breaks. This has resulted in main break road patches being smoother than some roadways, where pot holes have caused some normally-taken routes to be altered.

All the while, treatment plant operations and maintenance operations have been performed too. Thanks to all our staffs for working in very harsh weather conditions. In most locations, even in flowing rivers, the only open water to be found was immediately downstream of plant effluents - and it was very clean too.

Registration and housing reservations have opened for WEFTEC14 in New Orleans. Complimentary registration (no cost) to attend the exhibits is again being offered. Do not delay in getting your hotel and attendance registrations taken care of. WEFTEC attendance continues to grow year by year.

There are four WEFMAX (WEF-Member Association Exchanges) this year. The first was hosted by New Jersey and New York in late March, the second by Montana in mid-April, and the third in Michigan in late April. This WEFMAX season will wrap up in Charleston, South Carolina on May 21-23. Most members of the OWEA Executive Committee have attended or will attend one of these meetings to learn and share information from other MA's.

My term on the House of Delegates will close at WEFTEC14. Later this year, the OWEA Executive Committee will choose a new HOD representative. Dale Kocarek and Doug Clark will continue in their roles on the HOD.

And make sure you plan on attending One Water Ohio, the joint OWEA/OAWWA Conference in Columbus in August!! Visit www.onewaterohio.org for more details.

Dale Kocarek and Doug Clark are part of a workgroup on MA Leadership Development. As part of their assignments due before WEFTEC, they are required to work with WEF to develop training materials for Member Associations (MAs) on topics to address critical needs expressed by MAs. Step 1 was to complete a "needs survey," of which OWEA was a participant. Step 2 was an inventory of resources, and Step 3 is Product Development. Dale is the Vice Chair of this workgroup and the Product Development Task Leaders. Those attending WEFMAX will see two presentations on the efforts of the workgroup and to solicit and ask MAs for assistance and guidance as the Product Development Team moves forward.

Dale Kocarek and Doug Clark attended the annual Washington DC 2014 Water Week Fly-in that was held April 7 – April 9, 2014. This year it was a joint effort between WEF, WERF, and NACWA and next year, to the best of my knowledge, will also include AWWA. The purpose for the annual fly-in is to help legislators understand the importance of our industry, the financial difficulties in keeping our waters clean, and letting them know that we have the resources to help them become more informed when legislation regarding our industry comes up for a vote. In the end, while it takes time and resources, it does provide dividends to the entire membership, whether it is directly or indirectly apparent.

Delegate Update provided by Mark Livengood

Mark Livengood, Senior WEF Delegate, livengoodm@mcOhio.org

Dale Kocarek, Junior WEF Delegate, dale.kocarek@stantec.com

Doug Clark, Junior WEF Delegate, douglas.clark@bgohio.org

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New Orleans Morial Convention Center | September 27 – October 1, 2014

Save the Date for the Ohio Mixer
Sunday, September 28, 2014 at 6 pm

Ohio Water Environment Federation
the water quality people

WATER FOR PEOPLE REPORT

Alicia Adams, Co-Chair

Old Man winter is finally removing the cold cloak of the season from the shoulders of Ohio. The first hint of spring is in the air and children's minds and eyes turn to the adventures of what the outdoors offer. Will it be a game of kickball, hopscotch on the sidewalk, or hide-and-seek? Maybe a mad dash on that new bike from Christmas morn, wind racing to keep up, heading to the park to play on the swing set. School is almost over and the endless lazy days of summer are close enough to taste! This is what many people would consider to be the normal day in the life of a child.

Childhood is a time to play, to learn, to explore, and dream about our futures. But for millions of children around the world, especially girls, their youth is marred by something most of us would never think twice about: a shortage of safe drinking water, and clean, secure sanitation facilities.

In West Bengal, India, 10th grader Noor-e-naksima is doing her part in preserving her childhood and that of her classmates at Pabdana Hifzul Ullum High School. She's served as secretary of her school's WATSAN committee (Water and Sanitation Committee) for years, and actively participates in their weekly hygiene sessions.



water for people

"I have been in the WATSAN committee since its institutionalization," Naksima says. "I was inspired by how having an arsenic filter plant installed at my school made a huge difference within the community and school."

Arsenic contamination is a common problem in West Bengal, leading to high rates of student illness. In 2011, Water for People collaborated with Naihati Prolife (a local NGO) to install a hand-pump, drinking water taps, toilets, changing rooms, and incinerators in the school. They also established a maintenance system through the WATSAN committee, funded by the students themselves. Naksima helps with upkeep such as checking for pipe leaks, stocking cleaning supplies, and testing for continual running water.

The students now have a new perspective on hygiene, and regular menstrual hygiene education has decreased absenteeism rates among girls. "Girl students now get to use sanitary napkins and are aware of how to maintain menstrual hygiene discipline and feel more confident in sharing our issues with teachers," Naksima explains.

The other students respect Naksima for her dedication to their health and safety. Many of them joined WATSAN over the years with her encouragement, and they are inspired to continue her good work once she leaves at the end of the school year for college. "I like to bring others on WATSAN board and help maintain the precious facilities that we have got," Naksima says with pride.

As the publication of this article falls amidst various Water For People fundraising activities and exciting committee changes, please stay tuned as these will be revealed in the next publication of the Buckeye Bulletin.

If you would like to volunteer, donate, or obtain more information, please contact:

Alicia Adams, alicia.adams@stantec.com

Afaf Musa, musaab@cdmsmith.com

Content contributions from Water For People
and Tom Angelo



OWEA Specialty Workshop Schedule

May 21-22, 2014.....	Plant Operations and Laboratory Analysis Workshop
October 30, 2014.....	Watershed Workshop
December 11, 2014.....	Biosolids Workshop
March 5, 2015.....	Government Affairs Workshop
May 14, 2015.....	Collection Systems Workshop
October 21-22, 2015.....	Plant Operations and Laboratory Analysis Workshop
December 3, 2015.....	Biosolids Workshop

Register early!

The first two 2014 workshops (Government Affairs and Collection Systems) had record breaking turnouts.
Visit www.ohiowe.org for more information and registration

NEOWEA

Mary Ann Driscoll, President

The Northeast Section has been very busy this Spring . . .

On February 20th, the Section's Industrial Waste Committee held its annual Industrial Waste Seminar at the Days Inn in Richfield. We hit a record this year with 241 attendees and 20 vendors! In addition to the attendees, there were 45 people staffing the exhibit booths!

The Section held its March Section Meeting on March 27th at the Middlefield WRF and Water Treatment Plant. We had just over 100 people in attendance for the meeting that included tours of both plants and speakers on the history of the plant and improvements. Many thanks to the Village of Middlefield, Mike Cipolla, Patrick Brent and the staff at Mary Yoder's for making the event successful and memorable!

The Biosolids Committee held its second meeting on April 8th. The meeting was held in Canal Fulton and included a tour of Clardale Farm. The tour of the dairy farm was followed by technical sessions. This free meeting was attended by about 50 members, who obtained up to 2.5 contact hours each. Many thanks to Mike Welke for putting together a great meeting!

On April 12th, the Section participated in Engineering Career Day at the University of Akron as a part of public outreach. This program was sponsored by Goodyear to introduce science and engineering careers to students in grades 6 to 12. More than 1800 students attended the event. The Section had a booth in the Informational Fair where we passed out information on OWEA and spoke with students and parents. We also prepared an Interactive Activity for approximately 200 students. We told the kids a little bit about OWEA and shared the wastewater treatment process with them. Thanks to Kathy Richards, Tom Voldrich, Ashley Williston, Sarah Sullivan, Doug Dietzel, and Alex Maistros for spending their Saturday with me at the University.



NESOWEA sharing career information at the University of Akron

More than 90 members met at the West Creek Watershed Stewardship Center in Parma for the annual Watershed Meeting on April 24th. Bill Zawiski enlisted the assistance of four speakers to enlighten the membership on low impact development projects at the Stewardship Center. Speakers also discussed stream-groundwater interactions, headwater streams and Hellbender reintroductions.

The Section has several exciting seminars coming up this spring and summer - May Section & Annual Business Meeting in Akron, NE Lab Committee in June, and the BioMass-ter's Golf Outing in July. For information on these events, please visit www.ohiowea.org or www.nesowea.org.

Since this is my last message as Section President, I would like to take a minute to thank the entire Northeast Section Executive Committee for all their support and hard work making this year as enjoyable and memorable as my previous years on the committee. I would also like to thank my employers over the years for their support, especially Burgess & Niple, Inc., for allowing me to donate my time.

Mary Ann Driscoll, maryann.driscoll@burgessniple.com



Ashley Williston and Mary Ann Driscoll at Engineering Career Day



Students learn about careers in the water quality field

Did you know OWEA has more than 25 committees?

Are you looking for a way to be more involved in Ohio's water quality community?

Visit the OWEA Committee page at <http://www.ohiowea.org/committees.php> and let us know what your interests are and we'll match you up with a committee. Call us at 614.488.5800 with any questions.

Now that Mother Nature has relinquished her grip on the Northwest Section of Ohio, we look forward to ushering in spring and continuing our quest of preserving and enhancing our water environment. The Northwest Section Spring Meeting was held at the Village of Leipsic at the Fogle Community Center on April 2, 2014. Attendees were able to tour the Village's wastewater treatment plant in the morning. We are grateful to Tony Schroeder and his staff at the WWTP for hosting the meeting and helping with all of the arrangements as they did a tremendous job. Jim Leis of PRO-TEC Coating Company provided a tour of his facility and also gave an informative presentation for us. Thank you so much, Jim. Lunch, technical sessions and an awards ceremony were held at the Fogle Community Center/American Legion Hall. We are happy to announce that John Hoffman won the Kathleen M. Cook Award for his years of dedication and continued prowess in the wastewater laboratory field. We also had the opportunity to present Mike Kurfess with the Moe Swaisgood Award for demonstrating excellence in the field of collection system operations. Congratulations to both gentlemen.

The NWOWEA also held our semi-annual Operator Education Day workshop in preparation for the wastewater treatment and collections system exams on May 1, 2014 at the OEPA Northwest District Office. Thank you coordinator Frank D'Ambrosia and all

of his instructors for providing this great service to our treatment and collections operators!

NWOWEA

Josh Wehring, President

The May Section Meeting and Golf Outing will be held on May 28th at Woussickett Golf Course near Sandusky, Ohio. Technical sessions and our annual election of officers will be held in the morning, while a golf scramble and plant tours at the recently updated Monroeville, Ohio wastewater treatment plant will follow lunch. Please come to enjoy the interesting technical sessions and partake in the golf scramble, a fun time is sure to be had by all.

Finally, I would like to encourage all of you to seriously consider attending the One Water Conference this summer. The two premier Ohio water associations (OWEA and the AWWA) are teaming up and working together to hold a joint water professionals conference, which will be held August 26-29, 2014. The One Water Conference will be held at the new Hilton Columbus Downtown and Greater Columbus Convention Center, which are connected by a stunning glass skywalk. Check out all of the details for this and other meetings on the OWEA website at www.ohiowea.org.

Josh Wehring, jmwehring@fremontohio.org



NW President Josh Wehring awarding Kathleen M. Cook award to John Hoffman



NW President Wehring presents Moe Swaisgood award to Mike Kurfess



NW President Wehring awarding plaque to Mayor of Leipsic and staff.



NW President presenting plaque to Jim Leis of PRO-TEC Coating Company

Interested in having your plant profile featured in OWEA's Buckeye Bulletin?

Contact the leadership in your section or send an email to info@ohiowea.org.

SWOWEA

Bob Beyer, President

The SWOWEA 25th Annual Industrial Waste Seminar and Section Meeting was held at the Sharonville Convention Center on January 23, 2014 with over 140 in attendance. The technical sessions provided six contact hours. The Dr. Karl G. Voelkel Industry Award was presented to TechMetals, Inc. of Dayton. This award is given to an industrial facility in the Southwest Section for outstanding environmental achievement. Thanks to Chairperson Sharon Vaughn and the Industrial Waste Committee for another outstanding Seminar. A big thank you to the exhibitors and sponsors that help us to keep the costs down for all SWOWEA meetings and seminars for our members.

A Thank You to Mark Livengood, Beth Moore, and the Montgomery County Eastern Regional Water Reclamation Facility staff for hosting a successful March SWOWEA Section Meeting. The plant tours were great and so were the donuts. We had a wonderful lunch and the afternoon technical programs were interesting and informative. On behalf of the SWOWEA, we would like to thank Seepex and Pelton Environmental Products for sponsoring the section meeting.

The LAC meeting was held Thursday, April 17 at Butler County LeSouardsville Regional WRF. This meeting was well attended. Keep an eye out at www.swowea.org for future meeting details.

A Plant Operation Education Day was held on April 25, 2014 at Montgomery County Sanitary Engineering Building. These continue to be a low cost (\$10 which includes the cost of donuts and pizza lunch) opportunity for operators preparing to take the OEPA Wastewater Class 1, 2, 3, or Collection exam, to work through a sample exam with instructor provided solutions.

Join us on May 15 for our section meeting at the City of Dayton. After the tour of Carillon Historical Park, we'll convene to vote on the new slate of officers as nominated at the last section meeting in Montgomery County. The nominees are:

Tom Brankamp, President
 Roger Rardain, Vice President
 Jason Tinco, Treasurer
 Steven Reese, Secretary
 Alison Hudson, 1-Year Director
 Dave Wilson, 2-Year Director
 Erik Torgersen, 3-Year Director
 Jamie Gellner, State Delegate
 Bob Beyer, Past President

Check out the upcoming events in the Southwest Section. June 5th brings our annual Plant Operations Seminar at the Greene County Media Room in Xenia. We have the always free Laboratory Analysis Committee Meeting on July 17 at Hobart Brothers in Troy, Ohio. The September 18, 2014 Section Meeting will be hosted by City of Troy.

Finally, opportunities are always available to get involved - invite a co-worker to join the organization, nominate coworkers for awards, or join one of the many committees. It is real simple; just let anyone on the Executive Committee know of your interest to get involved.

For more details about these and other upcoming events, please visit the SWOWEA website at www.swowea.org or view the current issue of the Southwest WAVE.

Bob Beyer, bbeyer@masonoh.org

2014 Science Fair Winners

Southwest Section Science Fairs are now a thing of the past and we have very talented young people in our district. We want to thank all of the young people who worked so hard to turn out good projects. We also want to thank Gregg Mitchell, Dinesh Palaniswamy, Dan Martin, Barb Browne, Rachel Oscherwitz, Jerry Wright and Karen Tenore who took time out of their Saturday to judge the projects for the SWOWEA. The following are the winners from each district:

Lehmann High School

- | | | |
|------------------|-----------|--------------------------------|
| ♦ Jordi Emrick | 1st place | What prevents growth of algae? |
| ♦ Sidney Chapman | 2nd place | Toxicity on plants & daphnia |
| ♦ Sam Dean | 3rd place | What's in your water bottle? |

District 10 – Central State University

- | | | |
|-------------------|-----------|---|
| ♦ Shelby Dalton | 1st place | Water quality – the effect of flow rates |
| ♦ Mark Minardi | 2nd place | Removing copper from water using banana peels |
| ♦ Keenan Fraylick | 3rd place | Filtration straw |

District 11 – University of Cincinnati

- | | | |
|---------------------|-----------|--|
| ♦ Bluye DeMessie | 1st place | Developing a sustainable water filtration system |
| ♦ Maximillian Skove | 2nd place | Phytoremediation in aquatic plants |
| ♦ Alexander Tiro | 2nd place | Phytoremediation in aquatic plants |
| ♦ Owen Lewis | 3rd place | Ferrofluid cleans oil spills |

District 17 – Wilmington College

- | | | |
|---------------------|-----------|---------------------------|
| ♦ Blake Adams | 1st place | Don't Drink Another Drop! |
| ♦ Chelsie Hester | 1st place | Don't Drink Another Drop! |
| ♦ Johnathan Stewart | 2nd place | Aquaponics |
| ♦ Lesley Sweet | 3rd place | Land Erosion |



District 17 Winners

As our summer of 2014 slowly gets started, another Section Officer year will soon be over. At our May Section Meeting, we will elect a new First-Year Director and all of our officers, except Secretary, will succeed into new officer roles (as listed below.) Tyler Linton, Past President, will continue to serve as our OWEA Delegate.

On March 20, our Section Meeting was in Columbus and included a tour of the Anheuser-Busch wastewater treatment facility, and we did not receive any free samples of their products. Our four industrial related technical presentations were provided by Ryan Nystrom, Thomas Hill, William Barhorst, and Bob Brazier.

On April 10, our Section Meeting was hosted by the City of Logan and included a tour of the newly upgraded Logan WWTP. The technical presentations covered various plant operation and collection system improvement topics. Our five presentations were provided by Jeremy Cook, Dave Shook and Dan Barr, Elizabeth Ehret, Tiffany Maag, and Gary Silcott and Michael Betts.

Our next SEOWEA Section Meeting is Thursday, May 15 and will be hosted by the City of Columbus. The meeting includes a tour of the City's Compost Facility. In addition to learning about residuals and biosolids, we will be recognizing some of our Section members for their water environment related services. If you didn't nominate anyone, you have another year to think about potential candidates. I know that we have many great members that deserve recognition.

Our 2014 Friends and Family night will be on August 1, 2014 at a Columbus Clipper's game. As you may have heard, we had an excellent event last year. We have an even better event planned for 2014, so mark your calendars.

As I complete my term as President, I want to thank our Section members for the opportunity to serve as your President. It has been a pleasure and an honor. I look forward to continued involvement with our organization. In moving forward, I ask all of us to encourage our peers to participate in our organization and organization activities. From being on a committee to presenting at a section meeting, there are many opportunities for member involvement.

With the first joint AWWA/OWEA Annual Conference being held in Columbus, there are many opportunities for our Section members to get involved. If you are interested in volunteering, you can indicate your volunteer interests when you register or you can email me (matthew.boone@arcadis-us.com) indicating that you are interested in volunteering for the Annual Conference. I look forward to hearing from those who can volunteer and seeing the rest of you at the Annual Conference.

Matt Boone, matthew.boone@arcadis-us.com

SEOWEA

Matt Boone, President

2014-2015 SEOWEA Officers


<i>President</i>	<i>Fred Smith, ms consultants</i>	<i>fsmith@msconsultants.com</i>
<i>1st Vice President</i>	<i>Brandon Fox, City of Columbus</i>	<i>bdfox@columbus.gov</i>
<i>2nd Vice President</i>	<i>John Owen, Ohio EPA</i>	<i>john.owen@epa.state.oh.us</i>
<i>Treasurer</i>	<i>Brenda VanCleave, ms consultants</i>	<i>bvancleave@msconsultants.com</i>
<i>Secretary</i>	<i>Kris Ruggles, Strand Associates, Inc.</i>	<i>kris.ruggles@strand.com</i>
<i>3rd Year Director</i>	<i>Chris Tarr, Great Lakes Environmental Center</i>	<i>chris@glec.com</i>
<i>2nd Year Director</i>	<i>Melodi Clark, City of Columbus</i>	<i>mlclark@columbus.gov</i>
<i>1st Year Director</i>	<i>To be elected at May 2014 Section Meeting</i>	
<i>Past President</i>	<i>Matt Boone, ARCADIS U.S.</i>	<i>matthew.boone@arcadis-us.com</i>
<i>Delegate</i>	<i>Tyler Linton, Great Lakes Environmental Center</i>	<i>tlinton@glec.com</i>




April 10 SE Section Meeting at Logan WWTP




Touring the upgraded facilities at Logan WWTP



YOUR RESPECT


YOUR EFFORT


YOUR HEALTH


YOUR FUTURE


OUR PASSION



WATER'S WORTH IT

GOVERNMENT AFFAIRS COMMITTEE UPDATE

*by Dale Kocarek, P.E., Chair***Committee Meeting Highlights from February 21, 2014**

The GAC held a committee meeting on February 21, 2014 at NEORS. During the meeting, the following was discussed:

1. Final planning, logistics and talking points for the Ohio Legislative Mixer for February 25, 2014
2. An update for the workshop scheduled for March 13, 2014
3. Future planning for the March 5, 2015 workshop
4. The Ohio EPA Nutrient Technical Advisory Group for nutrients and OWEA nutrient survey
5. Fly in to Washington DC scheduled for April 7-9, 2014
6. Getting on a quarterly meeting schedule with the next meeting in May

I have seen an improved level of participation in the past year through working more closely with AOMWA in the review of proposed legislation such as Senate Bill 150. In the future I would like for the OWEA Government Affairs Committee to improve our contributions to the review process, through flagging, following legislation, and commenting on proposed bills.

Ohio EPA Nutrient Technical Advisory Group (TAG)

The Ohio EPA Nutrient TAG continues to meet on a monthly basis. Recent discussions have been how to appropriately consider the TIC (tropic index criteria) in the overall decision making process as it is not a water quality criterion as the name implies. Rather TIC is a multi-metric rating of a water body that considers stream biology, dissolved oxygen (DO) swings, benthic algae, and instream nutrient concentrations.

There are two presentation styles for the TIC - a numeric value or a "box model," which is more qualitative. Both presentation styles for the TIC have merit and pros and cons for each. The most important thing is to be recognized is that the TIC is a tool, which must be used properly.

Also, it should be noted that while the TIC is recognized as a unique and useful tool by Ohio EPA and USEPA, there are concerns in the TAG about "false positives." These are stream segments with healthy and diverse biology but for some reason exhibit high DO swings, benthic algae or instream nutrient concentrations resulting in a low/poor TIC score. Hence, there is concern that the TIC could be used to misclassify water bodies as impaired.

The TAG has determined that implementation and rule language will be an important part of the process once we move past discussions on the TIC. One challenge to include in the overall evaluation and decision making process is to recognize the speed by which stream segments improve over time, which may in instances be very slow and seen over multiple permit cycles. A larger concern is implementing a process that forces point source dischargers and land owners to invest large amounts of money on improvements to reduce nutrient discharge to streams, which result in no discernible improvement to the stream segments. There are examples in other states where this has happened and we do not want this repeated in Ohio.

Government Affairs Workshop

On March 13th the Government Affairs Committee held its annual Workshop at the Conference Center at NorthPointe in Lewis Center. A total of 216 persons registered for the 6.25 contact hour/ PDH event. This was the highest number of registrations ever for an OWEA specialty workshop. This year's workshop featured presentations ranging from regulatory/governmental updates to specific discussions involving topics such as the new federal ammonia water quality criteria developed by US EPA, presented by Tyler Linton, PhD and Lisa Huff from US EPA, and an update on Ohio EPA's External Advisory Group involving the Trophic Index Criterion by OWEA's GA Committee members Guy Jamesson and Elizabeth Toot-Levy.

This year's first presenter was new Ohio EPA Director Craig W. Butler. Director Butler provided an outlook of where the State of Ohio was heading with jobs, the environment, and regulations. Following Director Butler, Brian Hall, Assistant Chief of Ohio EPA's Division of Surface Water gave an update. Additional highlights of this year's workshop also included LouAnn Unger, from US EPA Region 5, who gave a presentation on sustainability. Also presenting at this year's workshop was Rebecca Fugitt, from the Ohio Department of Health, whose presentation provided an overview of the new home sewage rules. Also attending this year's workshop was Claudio Ternieden, Assistant Director of Research for the Water Environment Research Foundation.

Should any of the membership have a topic suggestions for next year's workshop, which will be held on March 5, 2015 at the NorthPointe Hotel and Conference Center, please contact GAC Chair Dale Kocarek or GAC Vice Chair, John Owen.

Fly In

This was the fourth year in a row in which I participated in the annual Fly in to Washington DC. I was part of a group from Ohio that included three Past Presidents of the Ohio WEA and our Executive Manager Judi Henrich. Both Doug Clark and I are also current WEF Delegates representing Ohio. The other Ohio WEA Past President who attended was Tom Angelo.

Why did we attend?

I have been attending the WEF Fly In in part because I am the Chair of the Ohio WEA Government Affairs Committee, a member of the WEF Government Affairs Committee and a WEF House of Delegates member. I am also a 31 year member of the Water Environment Federation and a long time officer of the Ohio WEA. Prior to doing the Fly In, I have heard many stories from the New England WEA and others about how much they like doing it.

I have always personally liked the legislative process and have had a longtime interest in government and public policy, despite being a sanitary engineer and consultant. As the Chair of the Ohio WEA Government Affairs Committee (GAC), I am always interested in what is going on at Capitol Hill, and wish to keep our WEF members in Ohio informed. I also like to interact with the WEF GAC staff Tim Williams, Steve Dye, Claudio Terneiden, and Chair of the WEF Government Affairs Committee Alan Vicory.

continued on page 17

What did we think of the event overall and the new Water Infrastructure & Innovation Expo?

I admit to some trepidation going to the Fly In with the new format. In the past I was used to being provided with a detailed script of what to say - and not say - on the Hill including a crafted core message to deliver as an “ask.” After sitting in on the two general NACWA-WEF sessions, I believe that we were finally able to develop a good core message to deliver to our congressional representatives focusing on House Resolutions HR 2707 and HR 3862. Both of these resolutions address issues including affordability, integrated planning, and schedules of compliance. After meeting with Congressman Chabot’s office, we agreed to write a letter of support pertaining to HR 2707.

Who did we meet in Congress and what did you discuss?

Our Ohio contingent had nine congressional appointments. Doug Clark and I personally met with congressmen or aides from the following offices: Senator Sherrod Brown and Congressional Representatives Steve Chabot, Bob Gibbs, Marcy Kaptur, Mike Turner, and Bill Johnson. The Ohio WEA team of Tom Angelo and Judi Henrich met with congressmen or aides from the following offices: Senator Rob Portman and Congressional Representatives Steve Stivers, Pat Tiberi, and Brad Wenstrup.

Why do we believe the event to be important?

One of the morning speakers in the general session, Sara Ewell, spoke of the importance of grass roots representatives over paid lobbyists. This left a big impression on me. For the first time,

I felt that our message and presence on the Hill was important and might be perceived as genuine and relevant. During our visits, we also took the approach of thanking our representatives for their continued support in SRF funding. We also asked them if there was anything we could do for them. The response that we received to this offer was very positive and, I believe genuinely appreciated.

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



Doug Clark, Tom Angelo, and Dale Kocarek in the Hart Senate Office Building

PLANT OPERATIONS COMMITTEE REPORT

by Jim Borton and Kim Riddell, Co-Chairs

The Plant Operations Committee along with the Laboratory Analyst Committee are hosting the Plant Operations / Laboratory Workshop on May 21st and 22nd. Once again, there will be 13 contact hours offered at the workshop including the following speakers: Eric Wahlberg, Sidney Innerebner, Keith Kroeger, Jon VonDommelen, Denise Seman, Keith Radick, Elizabeth Wick, Pejmaan Fallah and Kevin Krejny. Presentations will be given on Anaerobic Digestion, Small Plant Operations, Activated Sludge How To's, Energy Optimization, a host of laboratory topics and our ever popular round table discussion at the end of Day 1. Check out the full flyer on the www.ohiowea.org and don't miss it! There is still time to register and we'd love to see you there!

Due to the Ohio One Water event, the 2014 Operations Challenge will return to the annual conference for the first time in over 5 years. Thus, there will not be the “Hands on Education Day” normally held in conjunction with the Operations Challenge. However, new this year, Ohio will host the first Midwest Regional Operations Challenge Invitational. This means that Ohio will not only hold the competition for in state teams, but out of state (and maybe country?) teams will participate, with up to 12 total teams participating! Please see www.onewaterohio.org for more details and registration!

All team members are eligible to earn up to 12 contact hours and the winning Ohio teams in each division earn the opportunity to represent OWEA at WEFTEC '14 in New Orleans! OWEA and its sponsors support this event and cover the team's expenses for representing Ohio at WEFTEC, so managers, don't worry about how much it costs to send a team to New Orleans, encourage them to sign up!

If you have interest in putting a group together, please contact Kim Riddell at (419) 234-4507 or Jim Borton at (330) 201-1945. There are people out there that are willing to help you get started and Kim or Jim can put you in touch!

Jim Borton, james.borton@ch2m.com
Kim Riddell, kim@go-smith.com

AUGUST 27, 2014

OWEA OPERATIONS CHALLENGE INVITATIONAL



OWEA Operations Challenge Competition

The Ohio Water Environment Association is proud to announce they will be hosting an Operations Challenge Competition and National Invitational as part of the One Water Conference in August 2014. 12 teams total with 6 spots held for invitational teams.

Contact Kim or Jim for more info:
Kim Riddell, kim@go-smith.com
Jim Borton james.borton@ch2m.com

LABORATORY ANALYSTS COMMITTEE

by Denise Seman, Chair

Hi Everyone!

Operations Challenge Shout Out

We'd really like to see some new teams this year to challenge the existing champs. How about an all lab team? Ops Challenge will be held at state conference this year- which is the combined event: One Water, in August. Hope to see all of you there.

SW LAC – Jim Davis and Karen Tenore

SW LAC Meeting News!!

We had a great winter SW LAC meeting! It was hosted by Montgomery County Environmental Services. There were 55 people in attendance to earn up to 3 contact hours. The subjects covered were: the Lab Analyst Exam, BOD, and TSS. A tour of the Montgomery County laboratory followed.



Kathy Cook presenting at February SW LAC Meeting

- ◆ April 17
The SW LAC meeting was held at Butler County Water and Sewer (Lesourdsville Regional WRF) from 12 - 4 pm.
- ◆ July 17th
The meeting will be hosted by Hobart Brothers in Troy from 12 - 4 pm.
- ◆ October 16
The meeting will be hosted by YSI in Yellow Springs.

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:

Jim Davis, Montgomery County Water Services
DavisJi@mcOhio.org, (937) 496-7051

Karen Tenore, City of Dayton
Karen.Tenore@daytonohio.gov, (937) 333-1845

Committee Members:

Darrin Honious, YSI
Lynette Hodnicki, City of Fairfield
Lori Kyle, Greene County
Greg Mitchell, City of Sidney
Roger Rardain, City of Fairborn
Teresa Shinkle, Greene County

NE LAC – Bev Hoffman

Our March meeting was very successful. We had a full house at EnviroScience and the tour of their new facility was very interesting. We were all pleased to learn about the many environmental services they offer besides bioassay testing.

Our next meeting is in the works for late May. The topics we are looking at are Total Dissolved Solids, Total Kjeldahl Nitrogen (TKN) and Hardness. We will also be working on a meeting for July, with possible topics: Evaluating Field Test Kits and Samplers.

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 NESLAC membership directory and receive automatic email updates for training events and other news, please send your contact information to Beverly Hoffman at NESOWEALAC@gmail.com.

Committee Members:

Beverly Hoffman nesowealac@gmail.comMarie Simon marie@northcoastlabs.comLisa Feigle lisaf@gcdwr.orgAmy Starkey ajstarkey@co.stark.oh.us**SE LAC – Melodi Clark**

We finally had our first meeting of 2014. I would like to give a huge Thank You to Brandon Fox and Lois Wachtman from the City of Columbus Compost Facility for a great tour and presentation. I would also like to thank Aleksander Yakhnitskiy from Quasar for his wonderful tour. We had a great turn out of close to 15 people. Our next meeting will be held in June and will be at YSI. We are hopeful that the higher attendance continues throughout the year.

Melodi Clark, MLClark@columbus.gov**NW LAC – Bridget Shiets**

Our Winter Meeting was held on March 28th with attendees able to create an Excel Spreadsheet to Calculate MDLs and Step by Step Instructions to Creating Control Charts using Excel. This is such a powerful tool to use in the lab.

If you have any topic ideas or presentations you would like to for an upcoming meeting please email wwtplab@cityofbellevue.com.

Bridget Shiets, wwtplab@cityofbellevue.com.**Lab Analysts 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**Bridgit Shiets, 419.483.7514, wwtplab@cityofbellevue.com**Southwest Chairs**Karen Tenore, 937.333.1501, karen.tenore@cityofdayton.orgJim Davis, 937.496.7051, davisji@mcOhio.org

SAFETY COMMITTEE REPORT

by Nathan W. Coey, SE Section Safety Representative

EVERY DAY SAFETY (EDS) IS AN ATTITUDE

"We now have unshakable conviction that accident causes are man-made and that a man-made problem can be solved by men and women." W. H. Cameron

Every day the nearly 7 billion inhabitants on planet earth make decisions that can affect their personal safety and those around them at a blistering rate of speed. The daily decisions made by individuals can be compressed into a series of calculated risks based on desired or intended outcome. These "risks" associated with decisions can become routine and acted upon, with very little thought prior to the action. Often the decisions made in the mundane routine of our daily activities can be the greatest threat to our safety. Our daily commute to work is a series of calculated risks as we use our 2 ton (on average) vehicle to get us to work on time, along with thousands of other people doing the same thing while attempting to obey the posted speed limits. **Every Day Safety** is taking the time to remind ourselves that even in the mundane commute to work we are piloting a 2 ton lethal weapon that requires our respect. We are reminded of this when we observe distracted drivers on our commute (eating, talking on the cell phone, or texting) while their hands are on the steering wheel of a 2 ton lethal weapon, merely feet from you. **Every Day Safety** is always being cognizant of your surroundings and the activities around you that could impact your personal safety and those around you.

We serve in what I believe to be the greatest field in the United States of America; however our career path has led us to a very dangerous field that requires our respect every minute of the day. In this field we battle daily the forces of nature (weather/biological), and man-made forces (energy/equipment) while working to harness these forces to maintain regulatory compliance.

Every Day Safety is being cognizant of our surroundings every time we step foot into the treatment plant, a pump station, construction site, and the office with the mission that we go home to our families everyday with our life and limbs. **Every Day Safety** is respecting and recognizing that every aspect of our job has the potential to harm us and those around us independent of the influence of human error. **Every Day Safety** is an active effort in determining that all safety risks are eliminated and/or accounted for that threaten safety.

Helpful tips on how to incorporate the **Every Day Safety** attitude in your workplace.

Every: **Evaluate** all the potential safety hazards, **Educate** staff of the hazards, and **Enact** a plan of action to **Eliminate** risks associated with the hazard.

Day: **Develop** a safety plan, **Discuss** changes in hazards, and **Determine** that all risks are eliminated and/or accounted for.

Safety: **Schedule** routine safety meetings, **Secure** essential equipment to work safe, and **Speak** up when safety is at risk.

Our daily work is on the front line of public health and safety; exercise the same passion when it comes to your personal safety with the **Every Day Safety** attitude!

Nathan W. Coey, SE Section Safety Representative
ncoey@ci.pataskala.oh.us



WATERSHED COMMITTEE REPORT

by Anil Tangirala, Chair

One of the major initiatives of the OWEA Watershed Committee is to conduct a Watershed Workshop. This year the workshop is scheduled for October 30, 2014 at the Ohio Union on the campus of The Ohio State University. For the past several years OWEA has partnered with OSU's Buckeye Student Chapter to conduct this event. The workshop is open for everyone interested in watershed management topics and will cover watersheds from many perspectives. Key topics that many have expressed interest in include: Watersheds, Integrated Planning, Water Quality of Lakes and Rivers, Point and Non-Point Source Pollution, and Green Infrastructure approaches to storm water management. In addition to the presentations, the workshop will include poster presentations by students and researchers from The Ohio State University.

The committee is soliciting abstracts for watershed related topics. Please visit www.ohiowea.org | About Us | Call for Abstracts

Workshop announcement and registration will be sent via email in August. Please contact Anil Tangirala - Chair, OWEA Watershed Committee (atangirala@msconsultants.com) or Nick Bucurel, Co-Chair (nbucurel@brwncald.com) for any questions, or details.

Anil Tangirala, atangirala@msconsultants.com
Nick Bururel, nbucurel@brwncald.com

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YOUNG PROFESSIONALS

by Nick Bucurel, YP Co-Chair

2014 One Water Joint Conference

The YP Committee is working with the Ohio AWWA YPs to plan events for the joint annual conference in 2014 and volunteers are needed! Please contact Alicia Adams (Alicia.Adams@stantec.com) if you're interested in assisting with this event.

Notable Happenings

On Tuesday March 18, local Southeast YPs and YP supporters acted as pretend interviewers for OSU's Society of Environmental Engineers and participated in mock interviews, reviewed resumes, and answered a multitude of questions from the students. Thank you to all who participated as the students were very appreciative that we helped better prepare them for their professional futures.

The Northeast YP Committee held a meeting on Tuesday April 15th at the Northeast Ohio Regional Sewer District (NEORS) Analytical Services laboratory. More than 15 YPs, including students from the newly formed CSU student chapter turned out

to learn about the water quality monitoring programs and array of specialized testing performed by the NEORS. The group was given a tour of the brand new state-of-the-art laboratory, and received 1.5 contact hours for the technical program. After the tour, the group met at Cozumel for continued networking. Special thanks go out to Mark Citriglia and all the NEORS Analytical Services staff who stayed late to make this event a success!

Contact your Section YP representative to become more involved in the Young Professionals Committee:

Northwest Section: Walter Ariss, walter.ariss@epa.ohio.gov

Northeast Section: Ashley Williston, awilliston@ctconsultants.com

Southwest Section: Kelly Kuhbänder, kelly.kuhbänder@strand.com

Southeast Section: Alicia Adams, alicia.adams@stantec.com

Special thanks to all the committee volunteers who make the YP committee vibrant! As always, if you have any suggestions or questions, please contact Nick Bucurel at: 216.606.1323, nbucurel@BrwnCald.com.



2014 Mock Interviews at Ohio State University



Tour of the NEORS Analytical Services Laboratory

PUBLIC EDUCATION COMMITTEE

by Tyler Linton, Chair

Hello. I am the new Public Education Chair. I am replacing Nancy Taylor after her several years of wonderful and dedicated service in this focus area for OWEA.

For those who do not know me, I am the current delegate for the Southeast Section. I work for a private consulting firm in Columbus, OH called Great Lakes Environmental Center, Inc. I am an aquatic toxicologist by education and training, and I specialize in water quality criteria development and NPDES compliance assistance.

One of the areas I am most passionate about that we do well at OWEA is education, and I firmly believe we all have a responsibility to inform the public of what we do and how we work together to preserve and enhance water quality within the State of Ohio. That responsibility is owed citizens of all ages, but particularly K-12, because they are our future.

So, with that said, I look forward to working cooperatively with you to fulfill our responsibility for Public Education to the best of our ability. I will support you in any such endeavors, and I would like to hear any ideas you have. I especially would like to hear of any desires you have to participate. You can start by contacting me or the Public Education Chair of your Section – see at <http://www.ohiowea.org/> under Sections. Otherwise, I intend to hold a brief “informal” gathering of all members interested in Public Education (and Outreach) at the 2014 One Water Conference at the end of August.

Regards, and hope to hear from you soon.

Tyler Linton, tlinton@glec.com



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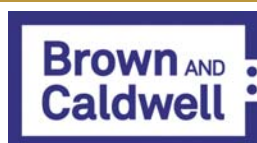
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OHIO'S DEVELOPMENT OF A STATE NUTRIENT REDUCTION STRATEGY AND NUTRIENT WATER QUALITY STANDARDS

by Dan Dudley, Ohio EPA, Central Office, Division of Surface Water

There is little doubt that water pollution attributed to excess nutrients is an issue in our State. The challenge facing federal, state and local governmental agencies is devising effective programs that restore impaired waters. This paper offers some observations regarding the roles of regulatory and supporting agencies in efforts to adopt nutrient criteria. It also presents a summary of the steps Ohio has undertaken to develop a State nutrient reduction strategy and to adopt nutrient water quality standards (WQS).

Ohio's Monitoring and Assessment Experience

U.S. EPA Region 5 and Ohio have enjoyed a good working relationship on matters relating to water quality monitoring and WQS since the 1980s. This was a result of a series of events that focused on the major water quality issues of the time. In the 1970s and early 80s, the need to have extensive justifications for every advanced wastewater treatment plant built using federal construction grants dollars provided the impetus and the funding to expand a fledgling biological monitoring program. Water quality and biological surveys provided the data necessary to determine attainable aquatic life uses and to demonstrate that advanced wastewater treatment, as opposed to secondary treatment, would be required to achieve the in-stream standards. The work done during those years laid the groundwork for later cooperative ventures with U.S. EPA including whole effluent toxicity case studies, stream regionalization and numerous national water body surveys. The stream regionalization project and long-term monitoring at reference locations allowed the development of numeric bio-criteria based on fish and macroinvertebrate assemblages.

In 1990, the bio-criteria were adopted into State WQS regulations as the means to measure attainment of Ohio's tiered aquatic life uses. Bio-criteria serve as the cornerstone of Ohio's Section 303(d) and 305(b) reporting methodology and, combined with the sheer number of locations sampled (nearly 10,000 sampling sites since 1980), it provides a robust assessment of water quality. The program has documented dramatic improvements in aquatic life attainment in Ohio's large rivers that is attributed to pollution controls at point sources and sediment reduction from nonpoint source runoff.

In the 1980s, only 21 percent of Ohio's large rivers attained aquatic life standards; today 89 percent of large rivers fully meet their aquatic life uses. While conditions in smaller rivers and streams have improved, approximately 40 percent of these smaller watersheds do not meet standards and nutrients are a cause of non-attainment more than half of the time.

These water quality improvements were the result of an effective State-federal co-regulator relationship borne from several key ingredients: 1) scientifically sound, cost-effective water quality assessment methods; 2) standardized information about the problem and issues; 3) the program's ability to demonstrate water quality improvements; 4) continuity in staffing and management; and 5) mutual trust. We intend to continue using this State-led co-regulatory model to address nutrient pollution. A summary of the ongoing work on strategy and criteria development is described in the following sections.

Ohio's Nutrient Strategy

The resurgence of nutrient pollution was evident in Ohio in the late 1990s. In response, Ohio EPA created a written protocol describing how the State's narrative water quality criteria could be applied in total maximum daily loads (TMDLs) and the management of nutrient sources. Here is an excerpt:

"The establishment of in-stream numeric targets is a significant component of the total maximum daily load (TMDL) process. The numeric targets serve as measures of comparison between observed in-stream conditions and conditions that are expected to restore the designated uses of the water body. The TMDL identifies the load reductions and other actions that are necessary to meet the target, thus resulting in the attainment of applicable water quality standards. Numeric targets are derived directly or indirectly from narrative or numeric water quality standards contained in Chapter 3745-1 of the Ohio Administrative Code (OAC).

This guidance summarizes Ohio EPA's authority for regulating the discharge of nutrients and developing TMDL implementation plans for nutrients, focusing on nitrogen and phosphorus in river/stream environments. This guidance was written at this time to address the immediate need to regulate discharges of nutrients through the TMDL program. U.S. EPA has identified state adoption of numeric water quality standards for nutrients as a priority and is in the process of developing recommendations. . . . Adoption of specific numeric water quality standards for nutrients in Ohio rules is probably two to four years away. In the meantime, the existing water quality standards provisions can be used to regulate the discharge of nutrients. The existing rule requirements for nutrients are general in nature and, therefore, must be applied on a case-by-case basis." (Ohio EPA, 2000).

The day-to-day application of this WQS guidance document drew upon an analysis of over 15 years of data available from the monitoring and assessment program, the network of least impacted reference sites and the stream regionalization project. A system of tiered aquatic life uses linked directly to numeric bio-criteria adopted in rule was also an important element. Although not labeled a strategy as such, the report titled "*Association Between Nutrients, Habitat, and the Aquatic Biota in Ohio Rivers and Streams*" (Ohio EPA, 1999) was the de-facto nutrient reduction strategy used by Ohio EPA for nearly 15 years. This report contained an analysis of nutrient chemistry, bio-criteria scores and habitat data from least impacted regional reference sites and other sites impacted by a variety of causes. It applied the results to develop the TMDL target values for total phosphorus and nitrogen (nitrate plus nitrite) in Ohio's five ecoregions.

Since 2001, Ohio has used its narrative WQS standard and the associated TMDL target values to generate nutrient load reductions in 40 of 64 watershed-scale TMDL reports approved by U.S. EPA. Ohio EPA can also show real-world river responses to some of the early phosphorus load reductions mandated by these TMDLs.

One example is the Upper Little Miami River in southwest Ohio. Based upon fieldwork conducted in 1998, the Exceptional Warmwater Habitat aquatic life use of the river was impaired or threatened due to excessive nutrients. The TMDL approved in 2002 called for a 60 percent reduction in total phosphorus loading and effluent limits were imposed on the major sewage plants. Follow-up monitoring done in 2011 showed compliance with permit limits, lowered in-stream phosphorus concentrations and a river in full attainment of its aquatic life use. Complete stream survey reports for these and other studies are available online at http://www.epa.ohio.gov/dsw/document_index/psdindx.aspx.

In 2009, Ohio initiated work on a more comprehensive nutrient reduction strategy in response to the recommendations of the Gulf Hypoxia Action Plan 2008 (Hypoxia Task Force 2008). Once again, U.S. EPA Region 5 provided valuable assistance in laying the groundwork to effectively coordinate with the other State resource agencies in Ohio (Ohio Department of Agriculture and Ohio Department of Natural Resources). As the lead agency for water quality, Ohio EPA prepared the initial drafts for review and input by others. The document was further revised in 2012 to address the eight-point framework for State nutrient strategies laid out in guidance issued by U.S. EPA (2011).

The final Ohio Nutrient Reduction Strategy was submitted in June 2013 (Ohio EPA 2013). Upon review by and at the request of U.S. EPA Region 5, Ohio EPA has prepared a two-year action plan to address the 11 significant issues raised in U.S. EPA's comments on the final submittal. The most challenging gaps to fill concern the adoption of numeric nutrient criteria, describing how water quality-based effluent limits are phased into National Pollutant Discharge Elimination System (NPDES) permit limits and the inclusion of logical adaptive management scenarios that are dependent upon the attainment of all designated water body uses.

Ohio's Trophic Index Criterion

Most existing numeric aquatic life water quality criteria are built on a sound technical basis owing to well-defined, dose-response relationships between individual pollutants and aquatic organisms. These relationships are so well defined as to allow confident predictions of environmental outcomes; hence, our administrative and regulatory infrastructure is largely predicated on tabular or algorithmic numeric criteria. However, unlike toxicants and oxygen-demanding materials, the effects of nutrient pollution on fish or macroinvertebrates are indirect, and therefore not predictable through simple dose-response curves, or highly deterministic models.

The published literature provides evidence of a reasonably predictable and consistent response between increasing nutrient concentrations and periphyton (reviewed by Hillebrand 2002), and between periphyton and dissolved oxygen concentrations (Morgan et al. 2006, Huggins and Anderson 2005, Miltner 2010). Ohio EPA conducted a nutrient criteria study predicated on tracing the steps from nutrients to periphyton (as given by chlorophyll-a), from periphyton to dissolved oxygen, and from dissolved oxygen to macroinvertebrates and fish. The objective was to identify benchmarks or thresholds at each step that would help define where a given water body is positioned along a continuum of enrichment. Results were published by Miltner (2010) and further explored in the context of Ohio EPA's water quality management system (Miltner 2011).

U.S. EPA Region 5 and Ohio EPA collaboratively developed the Trophic Index Criterion (TIC) -- a composite index that brings together the measures of nutrients, periphyton, dissolved oxygen, and biological assemblages by awarding points to successive ranges of each indicator, where the ranges are defined by benchmarks identified in the nutrient study. Hence, the TIC provides a structured method of aggregating data collected on Ohio's streams and rivers into a nominal scale that is essentially a translator for the condition of a water body relative to nutrient enrichment. As such, it can be applied independently to dictate the imposition of appropriate nutrient management programs including NPDES permits and TMDL. **Tables 1 and 2** (on page 24) present some details on the metric scoring system. Waters scored as threatened or impaired have total phosphorus TMDLs target concentrations set according to their habitat conditions and designated tiered aquatic life use (values range from 60 ppb to 300 ppb total phosphorus).

Remaining Challenges

There are wide-ranging views about how to address nutrient impairment in water bodies. Here are the steps being taken in Ohio to build consensus on an approach to Ohio's rules. Information about all these activities can be accessed on line at <http://www.epa.ohio.gov/dsw/wqs/NutrientReduction.aspx>.

1. Formation of ad hoc work groups on the important issues. Examples include:
 - a. Ohio Lake Erie Phosphorus Task Force, Parts 1 and 2
 - b. Director's Agricultural Nutrient Water Quality Working Group
 - c. Point Source Urban Runoff Work Group
2. Ohio Nutrient Forum – a visioning workshop open to the public with over 200 participants held in November 2011.
3. Early Stakeholder Outreach on Developing Rules to Reduce the Impacts of Nutrients in Surface Waters (public comments invited April – May 2013)
4. Technical Advisory Group for Nutrient Water Quality Standards (formed in November 2013)

There have been tangible results attributable to these outreach efforts. The public and media attention drawn to western Lake Erie's deteriorating water quality and the work of the Lake Erie Phosphorus Task Force prompted the General Assembly to pass the Ohio Clean Lakes Initiative, which provided funding for innovative agricultural best management practices (BMPs) in five northwest Ohio counties. The General Assembly is currently debating a bill that includes recommendations from the Directors' Agricultural Nutrient Water Quality Working Group. One recommendation includes licensure of fertilizer applicators and more complete record keeping. Ohio's agricultural community is working to raise awareness about nutrient issues through educational campaigns and funding research.

Technical Advisory Group and Next Steps

The Early Stakeholder Outreach on nutrient criteria rules provided an opportunity for point source aligned interest groups to express general support for the TIC while urging additional further consultation. That led directly to the formation of a 12 member Technical Advisory Group (TAG) with representation from point

continued on page 24

sources, the farm community, Lake Erie economic interests and environmental groups. Members and their affiliations are listed on **Table 3** (page 25). The TAG is charged with advising Ohio EPA as it drafts nutrient WQS rule and implementation language over the next year. TAG meetings are held monthly and agendas, meeting minutes and various work products are posted on Ohio EPA's web page (<http://www.epa.ohio.gov/dsw/wqs/NutrientReduction/NutrientTAG.aspx>). Although participation during TAG meetings is restricted to members and Ohio EPA personnel, the Agency encourages others to become invited observers and to contribute during "off-meeting" times. Contact Dan Dudley to become an invited observer (Daniel.Dudley@epa.ohio.gov).

TAG members as a whole and working in smaller work groups are examining TIC scoring issues, minimum data requirements and numerous implementation issues including TMDL calculations, NPDES permit averaging periods, interim limits and adaptive management cycles intended to phase in compliance with tight water quality based effluent limits. Monthly TAG meetings are currently scheduled to run through 2014. Plans call for selected TAG members and Ohio EPA staff to begin drafting rule language in a collaborative fashion later this year. Division personnel will use this working draft to prepare a second draft that will be released for general public review and comment (interested party review) in

2015. Another round of revisions will be made as appropriate and the rule package will be officially filed as proposed rules. At this stage the rules are subject to a final round of public comments as well as consideration by the General Assembly's Joint Committee on Agency Rule Review.

Conclusions

Although Ohio's TIC does not fully equate to the classic interpretation of numeric nutrient criteria, it is an important refinement to Ohio's nearly 15-year application of the existing narrative WQS criteria. By constructively engaging key stakeholders in drafting new rule language, Ohio has the opportunity to create a widely accepted diagnostic tool for nutrient impairment of aquatic life uses and the specific numeric TMDL targets upon which to assign load reductions. The long-running support for Ohio's monitoring and WQS program at U.S. EPA Region 5 and more recently U.S. EPA headquarters is important and appreciated. It is very important for U.S. EPA to have State agencies take the lead in adopting WQS that fit their unique circumstances regardless of whether a numeric or narrative methodology is applied.

Dan Dudley
Ohio EPA, Division of Surface Water
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Table 1. The Trophic Index Criterion (as currently proposed in draft form).

Biological Assemblages	Dissolved Oxygen	Benthic Algae	Nutrients [†]	Trophic Index Criterion
Meet applicable biocriteria (12)	Normal variation [‡] <6 mg/l (12)	<107 mg/m ² (8)	Concentrations typical of low disturbance systems (6)	Acceptable (38-22)
	Modest swings >6 mg/ (6)	107-183 mg/m ² (4)	Concentrations typical of healthy streams in working landscapes (3)	
Within the range of non-significant departure (6)	Wide swings >7 mg/l (1)	Enriched 183-320 mg/m ² (1)	Concentrations observed with high-intensity land use and WWTP loadings (1)	Threatened 21-14
Fail biological criteria (0)	Extreme swings >9 mg/l or swings >7 mg/l and minimum D.O. <WQS (0)	Thick to nuisance levels >320 mg/m ² (0)	Concentrations typical of highly disturbed systems; effluent domination; >50% chance of biological impairment (0)	Impaired 13-0

[†]See Table 2 for nutrient concentration ranges

[‡]Measured as the difference between the daytime maximum concentration and the morning minimum

Table 2. Trophic Index Criterion scoring for the nutrient component.

Total Phosphorus (mg/l)	Dissolved Inorganic Nitrogen (mg/l)				
	≤0.44	0.44-1.10	1.10-3.60	3.60-6.70	≥6.70
≤0.04	6	3	3	1	0
0.04-0.08	3	3	3	1	0
0.08-0.13	3	3	1	1	0
0.13-0.40	1	1	1	0	0
≥0.40	0	0	0	0	0

Table 3. Technical Advisory Group, Ohio Nutrient Water Quality Standards - Members and Alternates

Interest Group	Member	Affiliation	Alternate	Affiliation
Ohio Farming Community	Larry Antosch	Ohio Farm Bureau	Jack Irvin	Ohio Corn & Wheat Growers Assoc.
Ohio Farming Community	Tom Price	Price Farms Organics	Tom Menke / Bill Knapke	Menke Consulting / Cooper Farms, Ohio Pork Producers
Fertilizer Industry	Doug Busdeker	Ohio AgriBusiness Assoc. / The Andersons	Chris Henney / John Oster	OABA / Morral Co
Environmental Organization	Anthony Sasson	The Nature Conservancy	John Stark	The Nature Conservancy
Environmental Organization	Kristen Kubitza	Ohio Environmental Council	Kristy Meyer	Ohio Environmental Council
Water based recreation/tourism	Ron Wyss	Lake Erie Improvement Assoc.	Sandy Bihn	Lake Erie Improvement Assoc.
Point Source Technology Expert	Guy Jamesson	AOMWA / OWEA	Dale Kocarek	OWEA / Stantec
Nonpoint Source Technology Expert	John Lyons	Strand Associates, Inc.	Dave Ritter	AOMWA/NEORS
Small Publically Owned Treatment Facilities	Adrienne Nemura	Geosyntec	Gary Sheely / Steve Samuels	City of Lima / Frost, Bown, Todd LLC
Large Publically Owned Treatment Facilities	Elizabeth Toot-Levy	AOMWA / NEORS	Adam Sackenheim	AOMWA / Butler County
General Industry	John Meyer	Ohio Manufactures Assoc.	Michael Brom	Potash Corp., OMA
General Industry	Rob Reash	Ohio Electric Utility Group	Cheri Budzynski	Shumaker, Loop & Kendrick, LLP

NEORS, Northeast Ohio Regional Sewer District

AOMWA, Association of Ohio Metropolitan Wastewater Agencies

OWEA, Ohio Water Environment Association

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U.S. EPA 2011. Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions. Memorandum from N. Stoner to Regional Administrators dated March, 16, 2011.

Karl Gebhardt Selected as New Chief for the Division of Surface Water

Ohio EPA Director Craig W. Butler has tapped Karl Gebhardt to be the new chief for the Division of Surface Water and deputy director of water resources. Karl comes to Ohio EPA from the Ohio Department of Natural Resources (ODNR), where as a deputy director he served as the department's point person for water quality and water resource issues. Prior to that, he was chief of ODNR's Division of Soil and Water Resources, where he provided leadership to expand on-the-ground conservation practices and develop legislation that would help in the efficient and effective delivery of conservation programs for nutrient management.

"Karl will be a great asset to lead our Division of Surface Water. As deputy director, he will also coordinate efforts addressing water quality issues related to harmful algae and other nutrient issues affecting Lake Erie and Ohio's inland waters," Director Butler said. Gebhardt will work closely with the Agency's Division of Drinking and Ground Waters, Division of Environmental and Financial Assistance and others.

Gebhardt's career has spanned more than 40 years in natural resource management, public policy development and community relations in both the private and public sectors. He was one of the first employees in ODNR's Division of Natural Areas and Preserves in the early 1970s, and later became a legislative liaison. He held various management and policy positions at the Ohio Farm Bureau Federation and served as the first executive director for the Office of Farmland Preservation at the Ohio Department of Agriculture. In the private sector, he was the owner of Teater-Gebhardt & Associates for 12 years and a senior vice president with Paul Werth Associates, a Columbus public relations firm.

He has worked with a variety of professional organizations and advisory councils related to the environment. Gebhardt has a master's degree in public policy and management from The Ohio State University, a bachelor's degree in business administration from Franklin University and an associate degree in natural resources from Hocking College.



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- Nutrient Management
- Utility Management
- Sustainability



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Jerry Weimer,
Metropolitan Sewer District,
Cincinnati, OH

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WELCOME NEW MEMBERS

January 2014 to March 2014

Mariana Aboujaoude	Randy Elish	Rex Katterheinrich	Donna Moot	Sarah Sullivan
Matt Bauer	Nicodemo Filippelli	Ryan Kelly	Erin Mundorf	Ryan Theil
Kaye Y Bealer	Clifton Fletcher	Hillery Knight	Jeremy Neill	Bryan Robert Thomas
Tina Belz	Drew Forgrave	John Krinks	Geno November	Jordan Tokar
Michael Dennis Bennett	Gregory Frania	Stephanie Kunze	Matthew Oriani	Mark Raymond Vanauken
Arjun Bhushan	Melissa Gatterdam	Dennis Lamson	James Pemberton	Lauren W. Wasserstrom
Lee Bock	Cathy Glisic	Antonio Leigh	Christopher Pfeil	Jeff Watts
Joel Bogan	Stephanie Glossner	Philip A Lewis	Joseph Reese	Thomas Wenger
Dan Bogoevski	Roger Brian Green	Ernesto Javier Lopez	Rawley Ross	Kevin D White
Travis Clower	Daniel Hancock	Kari Ann Mackenbach	Terry Rubert	Richard Wojtala
John Clark Corn	Mark L Hemmerich	Zachary Markiewicz	Kevin Saunders	Jason Wolfarth
Brent Daniels	Katie Marie Heyob	Joseph B Martin	Patrick Shaposka	Christen Wood
Sandi Delph	Daniel Eugene Hoffman	Shawn Mason	Jay Shutt	Denis Zaharija
Joseph Derov	Andrew Howe	Timothy Miller	Megan M Smith	
Greg Devan	Andrew Hunter	Carrie Millward	Monica Sowders	
Xiaodi Duan	Denise Johnson	Valerie Dian Moore	Donald Stallman	

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.

REFER A NEW MEMBER TODAY Help grow Ohio's best water professional association.

Abstract Submittal Deadline:
Wednesday, June 18, 2014

call for abstracts



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Water Environment Federation
the water quality people®

Ohio Water Environment Association
Preserving & Enhancing Ohio's Water Environment

This conference is held by the Water Environment Federation in cooperation with the Ohio Water Environment Association.



Ohio WEA-AWWA 2014 Technical Conference & Expo

www.onewaterohio.org



Ohio Water Environment Association

Ohio Section American Water Works Association

Hilton Columbus Downtown

August 26-29, 2014

Greater Columbus Convention Center

Make Plans to Attend the First Ever Joint Ohio Water Professionals Technical Conference and Expo

History - How the Joint Conference Came to Be

Ohio's water professionals have long realized that there really is only "One Water." You may treat it for drinking, home, and industrial use or you may treat it after it has been consumed by people, used in homes, businesses and industry, or run off our streets and buildings, but we are all working with a finite resource.

The membership of the Ohio Water Environment Association and Ohio Section of the American Water Works Association attend many of the same conferences, work for the same utilities or consulting firms, and serve the same public and clients. OAWWA and OWEA have collaborated to attend Government Affairs Fly-Ins to discuss water issues with our country's legislators. The associations' sections and committees have worked together to hold meetings, encourage students to consider professions in the water field, and raise money for Water for People. It made complete sense to hold a joint water professionals conference.

In the summer of 2011, the conversation began. After several meetings, a Memorandum of Understanding was signed by the two organizations in early 2012. The sites of the Hilton Columbus Downtown and Greater Columbus Convention Center were selected in the summer of 2012.

And then the planning began. A Conference Committee of nearly 60 volunteers, equally representing both organizations, is working to bring you an educational and memorable conference experience.

You Are Invited to Attend

We hope you will take advantage of this unique opportunity to network with and learn from the best in Ohio's water quality community. An excellent technical program, expansive exhibit expo, and multiple networking events will await you.

Kurt Smith, Chair, Ohio AWWA
kurt.smith@arcadis-us.com

Mike Spriggs, OAWWA Conference Co-Chair
maspriggs@columbus.gov

Jill Taptich, OAWWA Conference Co-Chair
jetaptich@columbus.gov

Dan Sullivan, President, Ohio WEA
dan@sullivanenvtec.com

Rob Herr, OWEA Conference Co-Chair
rcherr@columbus.gov

John Newsome, OWEA Conference Co-Chair
jgnewsome@columbus.gov



@OneWaterOhio

TECHNICAL TRACKS

Drinking Sourcewater
Energy Sustainability
Green Technologies
Lab
Maintenance
Operations
Regulatory
Residuals/Recovery
Stormwater
Utility Management
Wastewater Collections
Wastewater Treatment
Water Distribution
Water Treatment
Workforce Development

Bringing more Ohio water
professionals together than ever before

ONE TIME ONE PLACE
ONE WATER OHIO



The two premier Ohio water associations are teaming up and working together to hold a joint water professionals conference in 2014.

The joint conference will be held August 26-29, 2014 at the new **Hilton Columbus Downtown** and **Greater Columbus Convention Center**, which are connected by a stunning glass skywalk.

Information and registration at www.onewaterohio.org



Diamond Sponsor



Emerald Sponsor



Ruby Sponsor



Sapphire Sponsor



*Sponsors as of 5/2/14 See page 44 for Conference Sponsor Program Details

TUESDAY, AUGUST 26

- 8:30 a - 5:00 p Golf Outing - Foxfire Golf Club
7:00 a - 10:00 p Registration - Hilton *sponsored by ARCADIS*
10:00 a - 4:00 p Management Development Seminar
10:00 a - 4:00 p Emerging Issues for Source Water Workshop
10:00 a - 4:00 p One Water Facilities Tours - Water & Wastewater
10:00 a - 4:00 p One Water Maintenance Tour
2:00 p - 5:00 p OWEA Ops Challenge *sponsored by OVIVO*
6:00 p - 9:00 p Exhibitor Setup - Conv Center Hall C
6:00 p - 10:00 p Welcome Gathering - Barley's

WEDNESDAY, AUGUST 27

- 6:00 a - 7:00 p Registration - Hilton *sponsored by ARCADIS*
7:00 a - 9:00 a Exhibitor Setup - Conv Center Hall C
7:00 a - 9:00 a Kick-Off Breakfast & Awards - Hilton
9:00 a - 4:35 p Technical Sessions - Four Tracks in C-Pod
9:00 a - 5:00 p Exhibit Exposition Open - Conv Center Hall C
9:00 a - 5:00 p Exhibit Tours (*earn Contact Hours Times TBA*)
9:00 a - 5:00 p OAWWA Tapping, Top Ops, Taste Competitions
9:00 a - 5:00 p OWEA Ops Challenge *sponsored by OVIVO*
9:00 a - 4:30 p Spouse/Guest Program
12:30 p - 2:00 p Lunch - Conv Ctr Hall C *sponsored by Terra Contracting*
5:00 p - 7:00 p Expo Social & Awards *sponsored by Brown and Caldwell*
5:00 p - 7:00 p OAWWA Meter Madness
7:00 p - 11:00 p Meet & Greet - Brothers *sponsored by CT Consultants*

THURSDAY, AUGUST 28

- 7:30 a - 6:30 p Registration - Hilton *sponsored by Hazen and Sawyer*
7:00 a - 8:30 a Continental Breakfast *sponsored by Stantec*
7:00 a - 8:00 a Cystal Crucible Breakfast *sponsored by Alloway*
8:00 a - 11:45 a Technical Sessions (6 Concurrent Sessions) - Hilton
9:00 a - 4:30 p Spouse/Guest Program
11:30 a - 1:30 p Lunch - Conv Center Hall C
1:30 p - 4:30 p Technical Sessions (6 Concurrent Sessions) - Hilton
4:30 p - 6:00 p OAWWA Business Meeting & Awards - Hilton
4:30 p - 6:00 p OWEA Membership Meeting & Awards - Hilton
6:30 p - 10:00 p One Water Gala - Hilton *sponsored by CDM Smith*

FRIDAY, AUGUST 29

- 7:00 a - 12:00 p Registration - Hilton *sponsored by Hazen and Sawyer*
7:00 a - 8:30 a Continental Breakfast *sponsored by Stantec*
7:00 a - 8:30 a OWEA 5S Breakfast *sponsored by Jones & Henry*
7:00 a - 8:30 a OAWWA Award Winners & Past Presidents Breakfast *sponsored by Burgess & Niple*
8:00 a - 11:45 a Tech Sessions (3 Concurrent Sessions) - Hilton
10:00 a - 12:00 p OAWWA Governing Board Meeting - Hilton
10:00 a - 12:00 p OWEA Executive Committee Meeting - Hilton
12:00 p - 1:00 p Joint Board Meeting Lunch - Hilton

Registration options:

Online: www.onewaterohio.org Phone: 614.488.5800
If you prefer to mail/fax a form, printable registration forms available online
Email: info@onewaterohio.org Fax: 614.488.5801
Conference Brochure *sponsored by Black & Veatch*



Ohio Section American Water Works Association



American Water Works
Association



Ohio Water Environment Association

Attendee Registration Fees	Early Rates End Aug 11	Late Rates Begin Aug 12
Tuesday Preconference Workshops (includes Lunch)	\$ 85.00	\$ 110.00
Tuesday Preconference Tours (includes Lunch)	\$ 85.00	\$ 110.00
Preconference Workshop Student	\$ 30.00	\$55.00
Full Conference Member	\$ 295.00	\$ 345.00
Full Conference Nonmember	\$ 395.00	\$ 445.00
Full Conference Member Retired (not working)	\$ 200.00	\$ 235.00
Full Conference Student (ID required)	\$ 50.00	\$ 75.00
Wednesday Only Member	\$ 170.00	\$ 195.00
Wednesday Only Nonmember	\$ 220.00	\$ 245.00
Thursday Only Member	\$ 170.00	\$ 195.00
Thursday Only Nonmember	\$ 220.00	\$ 245.00
<i>Budget Options - No Food, Beverage, or Events Included</i>		
Wednesday Technical Program/Expo Only	\$ 75.00	\$ 100.00
Thursday Technical Program/Expo Only	\$ 75.00	\$ 100.00
Friday Half Day Technical Program	\$ 50.00	\$ 75.00
Full Technical Program Only	\$ 200.00	\$ 275.00
Guest Ticket Kick-off Breakfast Hilton Wed	\$35.00	\$35.00
Guest Ticket Wed Brother's Reception	\$60.00	\$60.00
Guest Ticket Upscale Reception Hilton Thur	\$65.00	\$65.00
Spouse/Guest Program + 3 Event Guest Tickets	\$195.00	\$245.00
Spouse/Guest Program Activities Only	\$140.00	\$190.00
Exhibitor Registration Fees	Early Rates End Jun 26	Late Rates Begin Jun 27
Exhibitor (includes Conference Registration for Primary Exhibitor)	\$ 875.00	\$ 975.00
Extra Booth Attendant	\$ 85.00	\$ 85.00
Extra Booth Attendant Limited no Food/Bev	\$ 30.00	\$30.00
Golf Outing Fees		
Golf Registration Foursome		\$300.00
Golf Registration Individual		\$75.00
Sponsorship Levels		
Diamond Sponsor		\$3000.00
Emerald Sponsor		\$2000.00
Ruby Sponsor		\$1000.00
Sapphire Sponsor		\$500.00
Golf Hole Sponsor		\$250.00

Hotel Information

Hilton Columbus Downtown
401 North High Street
Columbus, Ohio 43215
614.384.8600



One Water lodging rate available Aug 25, 26, 27 & 28, 2014.

Rates from \$142/night + tax

Make your reservations via the link at www.onewaterohio.org

or Contact the Hilton Columbus Downtown directly

Cutoff date for reservations is Monday, August 11th.

Convention Center Information

Greater Columbus Convention Center
400 North High Street
Columbus, OH 43215
614.827.2500

Calling all Water & Wastewater Operators!

Don't Miss the First Ever Joint OWEA & OAWWA Conference

August 2014 - Columbus, Ohio
Register online at www.onewaterohio.org



More training and continuing
education opportunities than ever!
**OVER 18
HOURS AVAILABLE**



Over 18 Water & Wastewater Hours Available

Wed, Thur, & Fri Technical Program Schedule will be available June 1, 2014 at www.onewaterohio.org

Tuesday, 8/26

Preconference
Workshops and Tours
One Water Facilities Tours - W & WW
One Water Maintenance Tour
Management Development Seminar
Emerging Issues for Source Water

Possible CH/PDH: 5 - 6 hrs

Wednesday, 8/27

Expo - 150+ Exhibitors
Exhibitor Tours
Technical Sessions
WW Operations Challenge
Water Competitions

Possible CH/PDH: 5 hrs

Thursday, 8/28

Expo - 150+ Exhibitors
Technical Sessions
6 Concurrent Tracks
Water, Wastewater & Both
Contact Hours/PDH's available

Possible CH/PDH: 5.5 hrs

Friday, 8/29

Technical Sessions
3 Concurrent Tracks
Water, Wastewater & Both
Contact Hours/PDH's available

Possible CH/PDH: 3 hrs

Registration options are available to fit any training or continuing education need, from full conference, preconference workshops, or single day technical sessions.

Register online at www.onewaterohio.org



@OneWaterOhio



Attendee Registration Fees	Early Rates End Aug 11	Late Rates Begin Aug 12
Tuesday Preconference Workshops (includes Lunch)	\$ 85.00	\$ 110.00
Tuesday Preconference Tours (includes Lunch)	\$ 85.00	\$ 110.00
Preconference Workshop Student	\$ 30.00	\$55.00
Full Conference Member	\$ 295.00	\$ 345.00
Full Conference Nonmember	\$ 395.00	\$ 445.00
Full Conference Member Retired (not working)	\$ 200.00	\$ 235.00
Full Conference Student (ID required)	\$ 50.00	\$ 75.00
Wednesday Only Member	\$ 170.00	\$ 195.00
Wednesday Only Nonmember	\$ 220.00	\$ 245.00
Thursday Only Member	\$ 170.00	\$ 195.00
Thursday Only Nonmember	\$ 220.00	\$ 245.00
<i>Budget Options - No Food, Beverage, or Events Included</i>		
Wednesday Technical Program/Expo Only	\$ 75.00	\$ 100.00
Thursday Technical Program/Expo Only	\$ 75.00	\$ 100.00
Friday Half Day Technical Program	\$ 50.00	\$ 75.00
Full Technical Program Only	\$ 200.00	\$ 275.00

Contact **One Water Ohio** if you need assistance or information
614.488.5800 or info@onewaterohio.org

Water and Wastewater Competitions and Challenges

OAWWA Water Competitions

Water Tapping Contest
Water Taste Test Competition
Tops Ops Contest
Meter Madness

OWEA Operations Challenge

Process Control (*Tuesday*)
Laboratory
Safety
Collections
Maintenance

See Teams in Action Wednesday, Aug 27!

OAWWA Water Competitions

Pipe Tapping contest is a competition of skill in which three workers and a coach from each participating utility work against the clock to mount a tapping machine on a pressurized ductile iron pipe, tap a hole, insert a corporation stop, and attach a length of copper to a meter setting with a curb stop set at the correct angle in the middle. Each team will have 2 chances. One team from each Men's and Women's division with the best time overall with or without penalties wins.

Top-Ops is a fast-paced contest that pits teams of operators from different utilities against each other with questions in the area of water treatment. The winning team in each round will advance to the next level until a champion is determined.

Meter Madness challenges contestants to put together a completely disassembled meter against the clock. To make the contest more interesting, three to six miscellaneous parts are included in the bucket of meter components. Once the meter is assembled, it must operate correctly and not leak.

OWEA Operations Challenge

All teams will compete in all events. Each event will be judged and scored separately against established criteria.

Maintenance. Teams will be required to perform a variety of maintenance functions on a pump. There is a new pump this year and this will be the first time many of the teams will be competing on this pump.

Collection Systems. Teams will cut out a "cracked" section of gravity PVC sewer pipe with water circulating through it. Drill a hole in a piece of PVC pipe on a separate stand. Install a saddle connection with gaskets and two straps to represent a house connection. Cut and install the section with saddle and install the section with "flexible" repair couplings. The water tightness of the repair will be evaluated.

Safety. Teams will respond to an unconscious worker overcome by an unknown chemical in a manhole requiring rescue.

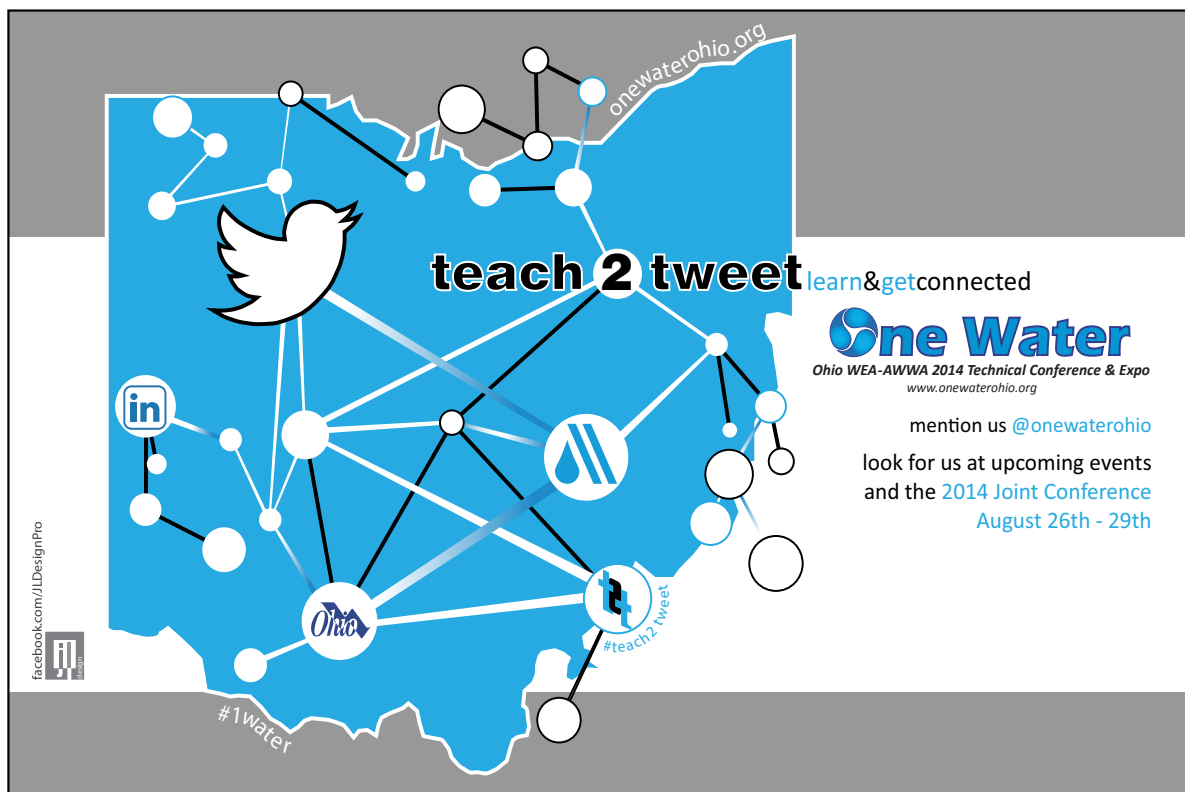
Process Control. Teams will solve problems including process control "story" problems and multiple choice theory and math.

Laboratory. The lab event will be a performance based seeded BOD set up. The proper steps for pH, seeding, labeling, DO on and results calculations of a seeded set will be judged on performance and speed. The steps will need to be performed from memory.

Each event will be timed separately and all team members are expected to participate.

OAWWA Water Competitions Contact:
Pat Crumley, pmcrumley@columbus.gov

OWEA Operations Challenge Contact:
Kim Riddell, kim@go-smith.com



teach2tweet learn & get connected

One Water
Ohio WEA-AWWA 2014 Technical Conference & Expo
www.onewaterohio.org

mention us @onewaterohio
look for us at upcoming events
and the 2014 Joint Conference
August 26th - 29th

#1water

facebook.com/ILDesignPro

Management Development Seminar

Tuesday, August 26, 2014 9:30 am - 4:30 pm

6 CH/PDH Includes Lunch

\$85 (register by Aug 11) \$110 (Aug 12 or later)

Seminar and Lunch at the Hilton Columbus Downtown

Speaker and Course Description

9:30 a - 11:30 a **Lean Six Sigma**

Tracy Owens, CQE,
Lean Practice Leader Ohio Six Sigma
Lean and Six Sigma have been used in manufacturing and service settings for over 30 years to improve products, increase customer satisfaction, and reduce costs. The State of Ohio has also embraced Lean Six Sigma in the public sector over the last few years, and the payoff has been significant. Process improvement and innovation will be accelerated, and sustainable results will be achieved more consistently and more often by learning how to use these techniques and applying them every day.



11:30 a - 11:45 a Break

11:45 a - 12:45 p **The People Pipeline: Workforce Development for a Changing Water Environment**

Mo Wright, President & CEO
RAMA Consulting Group
This session will challenge industry and emerging leaders to assess their current workforce development strategies and consider new approaches as the industry environment changes rapidly. Specifically the session will highlight a few emerging best practices in WD and encourage participants to work with a broad range of stakeholders to build a robust technical and professional development approach to sure up their organization's most valuable pipeline of all...The People Pipeline.



12:45 p - 1:15 p Lunch

1:15 p - 2:15 p **Reliability Centered Maintenance - RCM2**

Keith Kortz, President
Strategic Technologies, LLC.
RCM2 is not a software program. It is a process that is used to achieve desired levels of equipment reliability and process availability. The primary reasons for applying RCM2 are to attain desired levels of unit cost, product quality, safety and environmental integrity.



RCM2 achieves its success by effectively blending the most advanced and modern thinking on physical asset reliability with teamwork and the best of classical maintenance and operating practices and procedures. RCM2 is unsurpassed in preventing failure and the consequences of failure in all industries, and in its ability to train personnel on process and equipment functionality, causes of failure and failure consequence prevention.

2:15 p - 2:30 p Break

2:30 p - 4:30 p **Innovate How You Lead**

Maureen Metcalf, CEO
Metcalf & Associates, Inc.
How can leaders deal with the volume of change and uncertainty in our global world? How can they encourage others to do the same while concurrently meeting the needs of the overall team and organization? This presentation explores the process of becoming a more innovative leader by walking through the five elements of the innovative leadership model, then explores how each element contributes to the leader's ability to become more effective at dealing with complexity and uncertainty.



Emerging Issues for Source Water Workshop

Tuesday, August 26, 2014 9 am - 4 pm

5 CH/PDH Includes Lunch

\$85 (register by Aug 11) \$110 (Aug 12 or later)

Technical Sessions and Lunch at the Hilton Columbus Downtown

Technical Sessions and Tour

8:30 - 9:00	Registration
9:00 - 9:30	In-Stream Remediation Using Biofiltration <i>Jeff Kauffman, City of Columbus</i>
9:30 - 10:00	Waste Water Lab Certification and System Monitoring <i>Northeast Ohio Regional Sewer District</i>
10:00 - 10:30	Ohio River Valley Water Sanitation Commission (ORSANCO) Overview <i>Jerry Schulte, ORSANCO</i>
10:30 - 10:45	Break
10:45 - 11:15	Ohio Source Water Protection Program <i>Barb Lubberger, Ohio EPA</i>
11:15 - 11:45	Columbus T&O Event <i>Matt Steele and Rod Dunn, City of Columbus</i>
11:45 - 12:15	Cyanobacteria Toxin and Cell Propagation Through Six Lake Erie Treatment Plants <i>Nicholas Dugan, USEPA</i>
12:15 - 1:00	Lunch
1:00 - 4:00	Tour - Ohio EPA and Ohio Department of Agriculture Laboratories

Transportation Provided to:

The Ohio Department of Agriculture, Bromfield Building Auditorium, in Reynoldsburg, Ohio to the Ohio Environmental Protection Agency (OEPA) and ODA labs.

OEPA, Division of Environmental Services Laboratory

DES offers analytical services for most environmental analyses. Surface water, drinking water, wastewater, ground water, sediment, soil, tissue, air canister and air filter are examples of the types of samples we accept and analyze. The lab is divided into 3 sections performing inorganic (demand, microbiology, nutrients and metals), organic (semi-volatile, pesticide and PCB, and volatile organic compounds) and bioassay analyses.

Ohio Department of Agriculture Laboratory*

ODA's Animal Disease Diagnostic Laboratory is a full-service, all species animal disease diagnostic facility which provides diagnostic expertise to veterinarians for food animals, horses, small animals, and exotic species. The diagnostic lab also provides increasing support to Ohio's on-farm food safety programs, and is the only veterinary diagnostic lab in Ohio that is accredited by the American Association of Veterinary Laboratory Diagnosticians.

The Consumer Protection Laboratory

The Consumer Protection Laboratory is Ohio's premier food and agricultural testing laboratory. The laboratory tests food, feeds, fertilizers, pesticides, animal exhibition samples and race track samples. It is also state's the primary emergency response laboratory for biological and chemical terrorism in food and environmental products. On an annual basis, the laboratory tests close to 50,000 samples for over 250,000 tests.

*Should tours of the ODA laboratories not be available, OEPA staff will provide 60 minutes of presentations on topics such as drinking water laboratory certification and U.S. EPA's Discharge Monitoring Report-Quality Assurance Study Program.

Three Tours To Choose From: Water Facility, Wastewater Facility, and Maintenance

Tuesday, August 26, 2014 10 am - 4 pm 5 CH/PDH Includes Lunch

\$85 (register by Aug 11) \$110 (Aug 12 or later)

Water Facility Tour and More . . .

5 CH/PDH for Water

The **Parsons Avenue Water Plant** is a 50 Million Gallon per Day plant that supplies potable water for the south and southeastern portion of Columbus and parts of Franklin County. The plant source water comes from six radial collector wells. The plant utilizes lime and soda ash softening, pH adjustment, rapid sand filtration, disinfection, fluoridation, and corrosion control. The plant is monitored by a Supervisory Control and Data Acquisition computer. Most of the plant processes are monitored and controlled by programmable logic controllers.

Itinerary:

Depart Hilton Columbus Downtown

Parsons Avenue Water Plant

Lunch on the Bus

Olentangy River Wetland Research Park

Olentangy River Restoration Project

Scioto River Restoration Project

Return to Hilton Columbus Downtown



Wastewater Facility Tour and More . . .

5 CH/PDH for Wastewater

The **Jackson Pike WWT Plant** is a 68 MGD Advanced Secondary WWTP with peak secondary wet weather treatment capacity of 150 MGD. The plant collects sanitary and combined wastewater from the central City and NW Franklin County. The plant utilizes anaerobic digestion to stabilize residual solids, land applying both liquid and cake Class B sludge, and supplying raw sludge to a third party solids to energy facility as well as raw sludge to the City's Composting Facility. The plant is monitored by a Process Control System and controlled through a variety of Human Machine Interface Terminals and Workstations.

Itinerary:

Depart Hilton Columbus Downtown

Olentangy River Wetland Research Park

Lunch on the Bus

Olentangy River Restoration Project

Scioto River Restoration Project

Jackson Pike WWT Plant

Return to Hilton Columbus Downtown



Maintenance Tour

5 CH/PDH for Both: Water / Wastewater

This tour will include a stop at two pipe plants (both rigid and flexible) and will showcase a multitude of demos directly relevant to those who are responsible for the maintenance of their system, be it water or wastewater. Demos will include confined space entry, SCADA control, trench shoring, and power line safety.

Itinerary:

Depart Hilton Columbus Downtown

City of Columbus Sewer Maintenance

Operations Center

Lunch on the Bus

Hanson Pipe & Products

Ferguson Waterworks

Return to Hilton Columbus Downtown



And More . . . both facility tours will also include a tour of the Olentangy River Wetland, the Olentangy River Restoration Project, and the removal of a low head dam on the Scioto River just south of downtown Columbus.

The Olentangy River Wetland Research Park at The Ohio State University is designed to be one of the most comprehensive wetland research and education facilities in the nation at a major university. It is located on a 30-acre site owned by The Ohio State University, immediately north of the Columbus campus. Phase 1 of site development, which featured construction of two 2.5-acre deep-water marshes and a river water delivery system, was completed in 1994. Phase 2, completed in 1999, involved establishing the infrastructure for research and education of the site, including additional wetlands, experimental microcosms, and a visitors' wetland pavilion.

The two stream restoration projects are a part of the City of Columbus' efforts to improve the water quality of the Olentangy and Scioto Rivers through the central City.



**150+ Exhibitors, Contact Hour Tours, Exhibitor Presentations
Lunch Wed & Thur, Wed Expo Social, OWEA & OAWWA Competitions**



Register Soon. Exhibitor Early Bird Rates End June 26th!

Register Online at www.onewaterohio.org

Exhibitor Registration:

*Includes Full Conference Registration
for Primary Exhibitor*

Exhibitor (until June 26)	\$875
Exhibitor (beginning June 27)	\$975
Extra Booth Attendant	\$85
Extra Booth Attendant Limited no Food/Bev	\$30

Registration options:

Online: www.onewaterohio.org

Phone: 614.488.5800

If you prefer to mail or fax a form, printable registration forms are available online.

Email: info@onewaterohio.org

Fax: 614.488.5801

Bringing more Ohio water
professionals together than ever before

**ONE TIME ONE PLACE
ONE WATER OHIO**



@OneWaterOhio

@OneWaterOhio is following
our exhibitors. Are you?

Exhibit Expo

Wednesday, Aug 27, 2014

- ❖ Open 9 am - 5 pm
- ❖ Exhibitor Tours
- ❖ Lunch in Expo Hall
- ❖ Expo Social/Awards 5 - 7 pm

Thursday, Aug 28, 2014

- ❖ Open 9 am - 2 pm
- ❖ Lunch in Expo Hall

Exhibitor Recognition

- ❖ Conference Program
- ❖ onewaterohio.org
- ❖ OWEA & OAWWA Publications

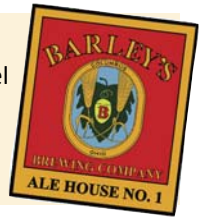
Registered Exhibitors as of 5/2/14

360water	Jacobs Associates
ACLARA	JDV Equipment Corporation
ADS Environmental Services	Johnson Controls, Inc.
Akron Electric, Inc.	Kaeser Compressors
AllMax Software, Inc.	Kemira
Alloway	Logan Clay Products
American Cast Iron Pipe Company	Lowell Corporation
ASC Group, Inc.	MTech Company
Association of Boards of Certification	M.E. Simpson.Co, Inc.
Badger Meter	MASI Environmental Laboratories
Bilfinger Airvac Water Technologies	Mid Atlantic Storage Systems, Inc.
BissNuss Inc.	Mississippi Lime Company
BL Anderson	Nelson Environmental Inc.
Boerger, LLC	Odle Inc. Coating & Painting
Brentwood Industries	Ohio EPA
BSI Online	Ohio RCAP
Buckeye Pumps Inc.	OHWARN
Cambridge Brass, Inc.	Parker Hannifin Corporation
CB&I Constructors, Inc.	Parkson
Chemco Systems, L.P.	Pelton Environmental Products
Chesley Associates, Inc.	Process Control Services
Cla-Val	Prominent Fluid Controls, Inc.
Corrpro Companies Inc.	Pure Technologies
Covalen	RecyClean
Culy Contracting, Inc.	Reed Manufacturing Company
Daman Superior LLC	REXA KOSO America
Data-Command	Rockwell Automation
Delaney & Associates Inc	Smith Environmental
DN Tanks, Inc.	Source 1 Environmental
Duke's Root Control, Inc.	Spectrashield Liner Systems
E & I Corporation	Sullivan Environmental Technologies, Inc.
E-Pump	T&M Associates
Electrolytic Technologies	Tank Industry Consultants
EnviroScience, Inc.	The Bergren Associates, Inc.
Evoqua Water Technologies, LLC	The Henry P. Thompson Co
F.S.R.C. TANKS INC.	Thermal Process Systems
Flygt, A Xylem Brand	Trojan Technologies
Gray Matter Systems	Trumbull
GRW Engineers, Inc.	UGSI ChemFeed, Inc.
H.R. Gray	Utility Service Co., Inc.
Hach Company	VeloDyne - Velocity Dynamics, Inc
Hanson Pressure Pipe	Waterworks Systems & Equipment, Inc.
Headworks, Inc.	WesTech Engineering, Inc.
HOBAS Pipe USA	Wilo USA & Netzsch Pumps
Industrial Control Systems	Xylem
Integrity Aquatic, LLC	YSI Inc
Integrity Municipal Systems	Zenner USA

WELCOME GATHERING

Tuesday, August 26, 6 to 10 pm at Barley's/Lower Level

Meet up with your fellow water professional colleagues from around the state and plan your conference experience. Appetizers provided. Beverages on your own.



KICK-OFF BREAKFAST

Wednesday, August 27, 7 to 9 am at the Hilton

Bring your appetite and your appreciation for the first set of 2014 OAWWA & OWEA award winners to the Kick-Off Breakfast. You will be welcomed to the City of Columbus to this first ever joint water professionals conference.



EXPO SOCIAL

Wednesday, August 27th - 5 to 7 pm Convention Center C-Hall

Take time to visit with more exhibitors, show your appreciation for the second set of 2014 OWEA & OAWWA award winners and find out who won the day's competitions. *sponsored by Brown and Caldwell*



MEET & GREET

Wednesday, August 27th, 7 to 11 pm at Brothers

Live music by **"The Slang"**, plenty of delicious "made from scratch" specialties and beverages, all in the fun environment provided by Brothers. Connect with new friends in the water industry or rekindle old friendships. Any late scoring results from the day's competitions will be announced at the Meet & Greet.

sponsored by CT Consultants

The Slang is a Columbus-based alternative/power pop rock band featuring Lead Vocalist and Guitarist John Bobo and Drummer Chip Burke. The musical talents of the duo have earned them invitations to several premier music conferences including MPMF, NXNE, and CMJ. The band has received airplay on local Columbus stations and the sound of these musicians has been used in various mainstream outlets including HBO, USA network, Troma Films and NBC.

The Slang has performed at major clubs throughout the Midwest. Known for their original songs, for this special Ohio WEA/AWWA event, **The Slang** will be performing songs from the 70s through today at the Meet & Greet.



ASSOCIATION MEETINGS

Thursday, August 28th, 4:30 to 6 pm at the Hilton

One of the few times the conference crowd will divide up as OWEA & OAWWA meet with their association members and hand out additional awards.



AWARDS

ONE WATER GALA

Thursday, August 28th, 6:30 to 10:00 pm at the Hilton



Enter the grand Hilton Ballroom for a fine evening of entertainment, food, and festivities. The final slate of OAWWA & OWEA award winners will be acknowledged for their excellence in the water quality field.

Background music provided by Stephen Davies. We'll top off the evening with the 'TG' Rivers Comedy Hypnosis Show, a hilarious, high-energy, and interactive entertainment that has universal appeal. Feel the excitement as members of the audience volunteer to use their imagination blended with creativity in this laugh-out-loud show! The volunteers will become the stars of the show. ('TG' Rivers, right) *sponsored by CDM Smith*

(Key Ohio and Columbus dignitaries have been invited - details TBA)

Stephen Davies (left) is a Upper Arlington High School senior and member of the High School Marching Band and Jazz Ensemble. His main influences include David Gilmour, Frank Zappa, Miles Davis and Charlie Parker.



GOLF OUTING

Tuesday, August 26th - 10 a.m. Shotgun Start at Foxfire Golf Club

Where: The Foxfire Golf Club
10799 Ste Rt 104
Lockbourne, OH 43137
614.224.3694

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

Breakfast *sponsored by Jacobs Engineering Group*
Keg *sponsored by Thermal Process Systems*
Lunch *sponsored by CH2M Hill*



\$300 Foursome/\$75 Individual includes:
Coffee/Pastries/Lunch/Beverages, Green Fees and Cart,
Driving Range, Awards Ceremony/Appetizers

Register online at www.onewaterohio.org

Foxfire Golf Club boasts 36 holes of championship golf, the Foxfire and the Players Club. The layout is a deft combination of traditional American golf and traditional British links design that provides the perfect complement to the original.

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GRW Engineers, Inc.
Hanson Pressure Pipe
MASI Environmental Laboratories
Source 1 Environmental
Star Pipe Products
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**Sponsors as of 5/2/14*

SPOUSE/GUEST PROGRAM

Wednesday-Thursday, August 27th & 28th

You are invited to participate in our fun-intensive One Water Spouse/Guest Program! Come along with us to One Water to join the adventures. Experience Columbus in all of its glory!

Tuesday, August 26 - North Market Tour

10:30 a.m. to 12:30 p.m.

Established in 1876, the North Market is Columbus' only remaining true public market. More than 30 merchants vend a wide variety of fresh, local, authentic food, plus an international selection of freshly prepared foods, authentic ethnic specialties, and distinctive gifts. Food and wine sampling. 35 distinct personalities in one incredible place.



Wednesday, August 27 - A Day at Easton Town Center 10:00 a.m. to 4:00 p.m.

Experience Columbus' premier shopping destination - Easton Town Center! With over 200 stores, restaurants, a 30-screen AMC and IMAX theatre, Easton offers a diverse retail mix in an open-air pedestrian friendly setting.



Thursday, August 28 - Unique Beautique

8:30 a.m. to 4:00 p.m.

Spend a wonderfully relaxing day at "UNIQUE BEAUTIQUE" and bring out your unique, natural beauty. The experienced and talented staff members will provide you with an exquisite selection of delightful pampering spa treatments.



Spouse Guest Registration Fees	Early Rates End Aug 11	Late Rates Begin Aug 12
Spouse/Guest Program Activities Only	\$140.00	\$190.00
Spouse/Guest Program + 3 Event Guest Tickets Wed: Kick-off Breakfast, Brother's Meet & Greet Thu: Hilton One Water Gala	\$195.00	\$245.00



Register Online at onewaterohio.org

First Name <i>(for name badge)</i>		Last Name	
Company Name			Title
Address			
City		State	Zip
Email:		Tel #:	
Member? <input type="checkbox"/> OAWWA <input type="checkbox"/> OWEA <input type="checkbox"/> Both # _____		Spouse/Guest Name <i>(if attending)</i>	

Conference Registration	Registration Type	by Aug 11	Begin Aug 12	Row Total
Full Conference includes: Technical Sessions, Expo Events, Kick-Off Breakfast, Wed/Thu Lunches, and Evening Networking Events	Full Conference Member	\$295 <input type="checkbox"/>	\$345 <input type="checkbox"/>	
	Full Conference Nonmember	\$395 <input type="checkbox"/>	\$445 <input type="checkbox"/>	
	Full Conf Member Retired <i>(not working)</i>	\$200 <input type="checkbox"/>	\$235 <input type="checkbox"/>	
	Full Conference Student <i>(ID Req'd)</i>	\$50 <input type="checkbox"/>	\$75 <input type="checkbox"/>	
Wed Only includes: Technical Sessions, Expo Events, Kick-Off Breakfast, Lunch, and Evening Networking Meet & Greet at Brothers	Wednesday Only Member	\$170 <input type="checkbox"/>	\$195 <input type="checkbox"/>	
	Wednesday Only Nonmember	\$220 <input type="checkbox"/>	\$245 <input type="checkbox"/>	
Thur Only includes: Technical Sessions, Expo, Continental Breakfast, Lunch, and One Water Gala at Hilton	Thursday Only Member	\$170 <input type="checkbox"/>	\$195 <input type="checkbox"/>	
	Thursday Only Nonmember	\$220 <input type="checkbox"/>	\$245 <input type="checkbox"/>	
Includes: Program Activities, Kick-Off Breakfast, Brothers, Hilton One Water Gala Events	Spouse/Guest Program + 3 Events	\$195 <input type="checkbox"/>	\$245 <input type="checkbox"/>	
Includes: Program Activities Only	Spouse/Guest Program Limited	\$140 <input type="checkbox"/>	\$190 <input type="checkbox"/>	
	Extra Wed Kick-Off Breakfast Ticket	___ x \$35 each		
	Extra Wed Brothers Meet & Greet Ticket	___ x \$60 each		
	Extra Thu Hilton One Water Gala Ticket	___ x \$65 each		

Preconference Workshops & Tours (select one if attending)				
Includes: Technical Session &/or Tours, Lunch, and Transportation if part of program. (10 am - 4 pm, 5 Contact Hours/DPH)	Emerging Issues for Source Water	\$85 <input type="checkbox"/>	\$110 <input type="checkbox"/>	
	Management Development Seminar	\$85 <input type="checkbox"/>	\$110 <input type="checkbox"/>	
	One Water Facilities Tour Water <input type="checkbox"/> Wastewater <input type="checkbox"/>	\$85 <input type="checkbox"/>	\$110 <input type="checkbox"/>	
	One Water Maintenance Tour	\$85 <input type="checkbox"/>	\$110 <input type="checkbox"/>	
Budget Options - No Food, Beverage, or Events Included				
Includes: Technical Sessions and Exhibit Expo Access Only	Wed Technical Program/Expo Only	\$75 <input type="checkbox"/>	\$100 <input type="checkbox"/>	
	Thurs Technical Program/Expo Only	\$75 <input type="checkbox"/>	\$100 <input type="checkbox"/>	
	Fri Half Day Technical Program	\$50 <input type="checkbox"/>	\$75 <input type="checkbox"/>	
	Full Technical Program Only	\$200 <input type="checkbox"/>	\$278 <input type="checkbox"/>	
TOTAL AMOUNT DUE				

Tickets will be taken for the events below.
Please check which events you plan to attend.

Included in Full and Wed Registration	Included in Full and Thur Registration
<input type="checkbox"/> Kick-Off Breakfast	<input type="checkbox"/> Thursday Lunch
<input type="checkbox"/> Wednesday Lunch	<input type="checkbox"/> Hilton Gala Reception
<input type="checkbox"/> Meet & Greet Brothers	

FORM OF PAYMENT	
<input type="checkbox"/> Check # _____	<input type="checkbox"/> P. O. # _____
<input type="checkbox"/> Credit Card - you will be emailed a secure link to enter your credit card payment. Or you may call the One Water Conference office with your credit card number.	
<input type="checkbox"/> I have read & agree to the One Water refund policy	

Make checks payable to:
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and mail to:

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1890 Northwest Blvd, Suite 210
Columbus, OH 43212-1671
T: 614.488.5800 F: 614.488.5801
E: info@onewaterohio.org

Ohio WEA-AWWA 2014 Technical Conference & Expo Attendee Notice of Cancellation and Refund Policy

Within 72 hours of the conference or no-shows the day of the conference will be billed in full and will not receive a refund. 72 or more hours prior to the conference will receive a 65% refund minus any credit card processing fees. 7 days or more prior to the conference will receive a full refund minus any credit card processing fees.

Register Online at onewaterohio.org

Company Name (as you would like listed in program)		
Address		
City	State	Zip
Primary Exhibitor Responsible for Exhibit:		
Email:	Tel #:	
Company Web Site:	Member of: <input type="checkbox"/> OAWWA <input type="checkbox"/> OWEA <input type="checkbox"/> Both <input type="checkbox"/> Neither	
Signature _____		Date: _____
(by signing you agree to the Exhibitor Terms & Conditions and Cancellation Policy posted at www.onewaterohio.org)		






Exhibitor Registration	Registration Type	Cost	Row Total
Includes One Full Conference Registration: Technical Conference Sessions, Expo Events, Kick-Off Breakfast, Wed/Thu Lunches, and Evening Networking Events, for primary exhibitor.	Exhibit Booth	\$875 <input type="checkbox"/> Early Bird Rate until 06/26/14	\$975 <input type="checkbox"/> Beginning 06/27/14
Add extra Booth Attendants - Max 2 Booth Attendant (\$85) includes lunch on Wed & Thur, plus the Expo Social on Wed.	Booth Attendant #1 Name _____	Booth Attendant \$85 <input type="checkbox"/> Booth Attendant Ltd (No F&B) \$30 <input type="checkbox"/>	
Booth Attendant Limited (\$30) allows participation in booth activities only NO FOOD OR BEVERAGE.	Booth Attendant #2 Name _____	Booth Attendant \$85 <input type="checkbox"/> Booth Attendant Ltd (No F&B) \$30 <input type="checkbox"/>	
One Wi-Fi Access Point avail per booth (one device). Please only select this option if you NEED onsite Wi-Fi. <input type="checkbox"/>			
Note Special Requests (subject to avail)			
Exhibitor Tour: If you would be interested in giving a 15 minute presentation at your booth, check here: <input type="checkbox"/>			
Extra Wed Kick-Off Breakfast Ticket(s)		___ x \$35 each	
Extra Wed Brother's Meet & Greet Ticket(s)		___ x \$60 each	
Extra Thu Hilton One Water Gala Ticket(s)		___ x \$65 each	
Ad in Conference Pocket Brochure Business Card Size Ad 3.5 in w x 2 in h		\$250 <input type="checkbox"/>	
Ad in Conference Pocket Brochure Double Business Card Ad 3.5 in w x 4 in h		\$500 <input type="checkbox"/>	
Add a Sponsorship to Your Registration	 Diamond Sponsor	\$3000 <input type="checkbox"/>	
	 Emerald Sponsor	\$2000 <input type="checkbox"/>	
	 Ruby Sponsor	\$1000 <input type="checkbox"/>	
	 Sapphire Sponsor	\$500 <input type="checkbox"/>	
	 Golf Hole Sponsor	\$250 <input type="checkbox"/>	
TOTAL AMOUNT DUE			

Exhibit Expo

Wednesday, Aug 27, 2014

- ❖ Open 9 am - 5 pm
- ❖ Lunch in Expo Hall
- ❖ Expo Social 5 pm - 7 pm

Thursday, Aug 28, 2014

- ❖ Open 9 am - 2 pm
- ❖ Lunch in Expo Hall

Exhibitor Recognition

- ❖ Conference Program
- ❖ onewaterohio.org
- ❖ OWEA & OAWWA Publications

The primary exhibitor may attend each of the ticketed events below. Please check which events you plan to attend.

- ☐ Wed Kick-Off Breakfast
- ☐ Wed Lunch - Expo Hall
- ☐ Wed Eve Meet & Greet - Brothers
- ☐ Thu Lunch - Expo Hall
- ☐ Thu Eve One Water Gala - Hilton

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- ☐ Credit Card - you will be emailed a secure link to enter your credit card payment. Or you may call 614.488.5800 with your credit card number.
- ☐ I have read & agree to the One Water refund policy

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Columbus, OH 43212-1671
T: 614.488.5800 F: 614.488.5801
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Ohio WEA-AWWA 2014 Technical Conference & Expo Exhibitor Refund Policy

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Sponsor Registration	Cost	Row Total
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 Emerald Sponsor	\$2000 <input type="checkbox"/>	
 Ruby Sponsor	\$1000 <input type="checkbox"/>	
 Sapphire Sponsor	\$500 <input type="checkbox"/>	
 Golf Hole Sponsor	\$250 <input type="checkbox"/>	
TOTAL AMOUNT DUE		

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Sponsorship Recognition

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- ❖ Conference Program
- ❖ Conference Web Site
- ❖ OWEA & OAWWA pre- and post-Conference Publications
- ❖ One Water Social Media

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FOUR PERSON SCRAMBLE

One Water
Ohio WEA-AWWA 2014 Technical Conference & Expo
www.onewaterohio.org

Register Online at onewaterohio.org

Where:	The Foxfire Golf Club 10799 Ste Rt 104 Lockbourne, OH 43137 614.224.3694	Date:	Tuesday, August 26, 2014	Format:	256 Golfers 32 Teams per Course Four Person Scramble
Cost:	\$300 Foursome \$75 Individual \$250 Hole Sponsor Sign	Times:	8:30 a.m. Registration Open 8:30 a.m. Driving Range Open 10:00 a.m. Shotgun Start	Includes:	Coffee/Pastries/Lunch/Beverages Green Fees and Cart Driving Range Awards Ceremony/Appetizers
		Prizes:			Long Drive Closest to the Pin Course Winners

Golf Team Contact First Name		Contact Last Name	
Company Name			Title
Address			
City		State	Zip
Email:		Tel #:	

One Water Golf Outing Tuesday, August 26, 2014 at Foxfire Golf Club		
# Team(s) of four golfers	___ x \$300 each	
# Individual Golfers	___ x \$75 each	
Hole Sponsor Sign	___ x \$250 each	
Print golfers names below:		
1.	2.	
3.	4.	
TOTAL AMOUNT DUE		
Course Preference (subject to availability): <input type="checkbox"/> Players Club <input type="checkbox"/> Foxfire <input type="checkbox"/> No Preference		

FORM OF PAYMENT
<input type="checkbox"/> Check #
<input type="checkbox"/> Credit Card - you will be emailed a secure link to enter your credit card payment. Or you may call 614.488.5800 with your credit card number.
Make checks payable to Ohio WEA/AWWA 2014 and mail to: Ohio WEA/AWWA 2014 Conference 1890 Northwest Blvd, Suite 210 Columbus, OH 43212-1671 T: 614.488.5800 F: 614.488.5801 E: info@onewaterohio.org



2014 Golf Chairs
Craig Charleston, craig@360water.com
Todd Pulsifer, tfpulsifer@columbus.gov

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Business Card	3.5 w x 2 h	not avail
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BLUEPRINT COLUMBUS: CLEAN STREAMS, STRONG NEIGHBORHOODS

by Hunter Kelly, City of Columbus; Eric Onderak, AECOM; Susan Ashbrook, City of Columbus

Blueprint Columbus is Columbus's bold approach to an age old problem: too much rain water ending up in sanitary sewers, causing basement back-ups and sewer overflows. Rather than just building tunnels to treat the symptom of too much water, Blueprint Columbus proposes to treat the cause by eliminating excessive inflow and infiltration (I/I) from both public and private sources. Blueprint Columbus will pair this with aggressive green infrastructure to clean stormwater. If successful, Blueprint Columbus will result in cleaner streams, improved neighborhoods, and new jobs.

Background

Columbus is under consent decrees with the Ohio EPA to eliminate sanitary sewer overflows (SSOs) and to control combined sewer overflows (CSOs). As first reported in Buckeye Bulletin, Issue 2, 2013, in 2005 Columbus submitted a plan to Ohio EPA to comply with the consent decrees. This plan front-loaded the CSO control work. When the current tunnel project, OARS, is completed, Columbus will have largely met its CSO requirements.

The rest of the City's 2005 Wet Weather Management Plan focused on SSOs. Controlling SSOs is more challenging for the City because the geographic area is so much larger (about 95% of the City is served by separate sanitary sewers) and the volumes are much less than in the combined sewers. Basically, this will result in more money spent to get far fewer gallons eliminated – a much poorer “bang for the buck” than the CSO work.

In 2012, the City asked Ohio EPA for permission to delay the SSO tunnel that was scheduled to start in 2014 while the City explored a new approach, using USEPA's integrated planning framework. See USEPA's June 5, 2012 Memo, “Integrated Municipal Stormwater and Wastewater Planning Approach Framework.” Ohio EPA and the City agreed that Columbus would submit an integrated plan on Sept. 15, 2015. See Buckeye Bulletin, Issue 2, 2013 for more information.

Blueprint Columbus is Born

Once the City had permission to develop an integrated plan, one

of the first steps the City took was to brand its new program. “Blueprint Columbus: Strong Neighborhoods, Clean Streams” was chosen. Columbus believes this tag line helps convey that this is more than just a sewer project. Unlike out-of-sight, out-of-mind tunnels, the proposed approach will impact local neighborhoods much more directly. This will be especially true as the City pursues elimination of private I/I. Developing this brand is part of an aggressive outreach and education effort that is underway. This includes a Community Advisory Panel, a City Internal Advisory Board, and door-to-door educational efforts.

The outreach effort is one part of a complicated approach to developing an Integrated Plan. See **Figure 1**, which shows the various components of developing the Blueprint plan.

The City has taken the basics of Blueprint, I/I removal, and green infrastructure, and separated them into four parts, which is referred to as the four pillars of Blueprint Columbus, shown in **Figure 2**.

1. Lining of sanitary sewers including City owned mainline sewers and the private laterals connecting homes/businesses to the sewer.
2. Redirection of rooftop water away from homes and other structures and into the right of way. This protects foundation drainage around the buildings.
3. A voluntary sump pump installation program to further protect foundation drainage.
4. Green infrastructure (GI) to address the quality and quantity of stormwater that has been directed to the right of way and the local stormwater runoff.

Pilot Area Technical Committee

The City created Pilot Area Technical Committee (PATC) working groups to investigate and develop a process for evaluating improvements to the level of service (LOS) within the existing storm system related to both water quality and stormwater protection.

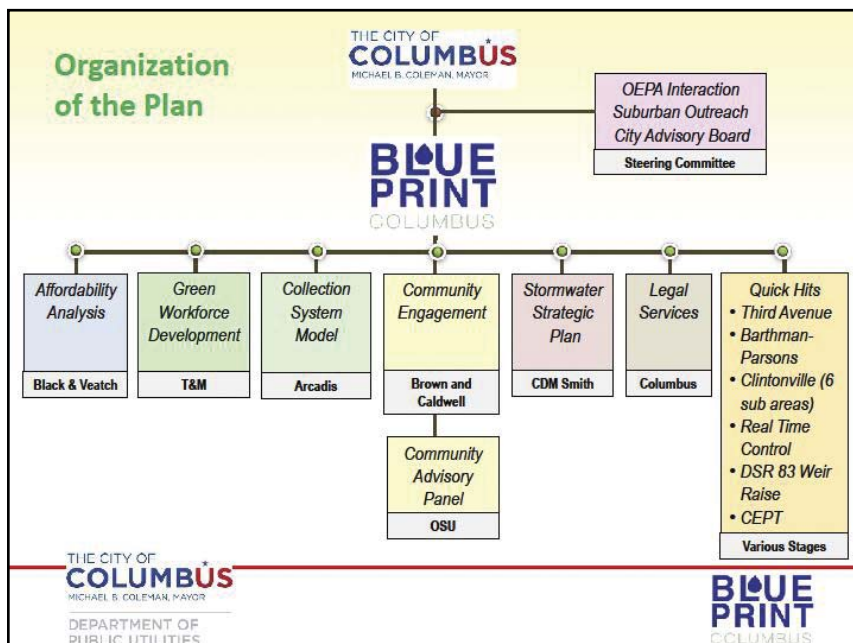


Figure 1: The various components of developing the Blueprint plan

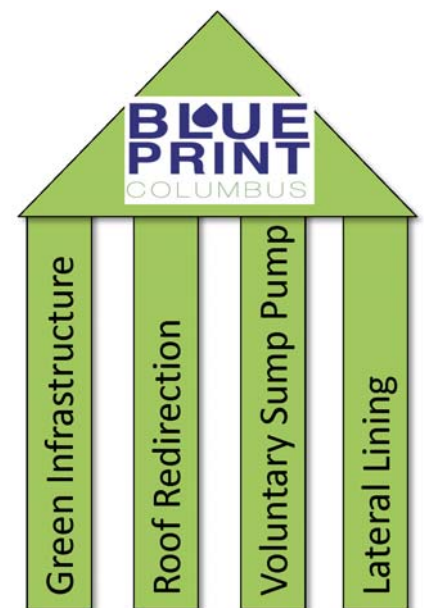


Figure 2: Four Pillars of Blueprint Columbus

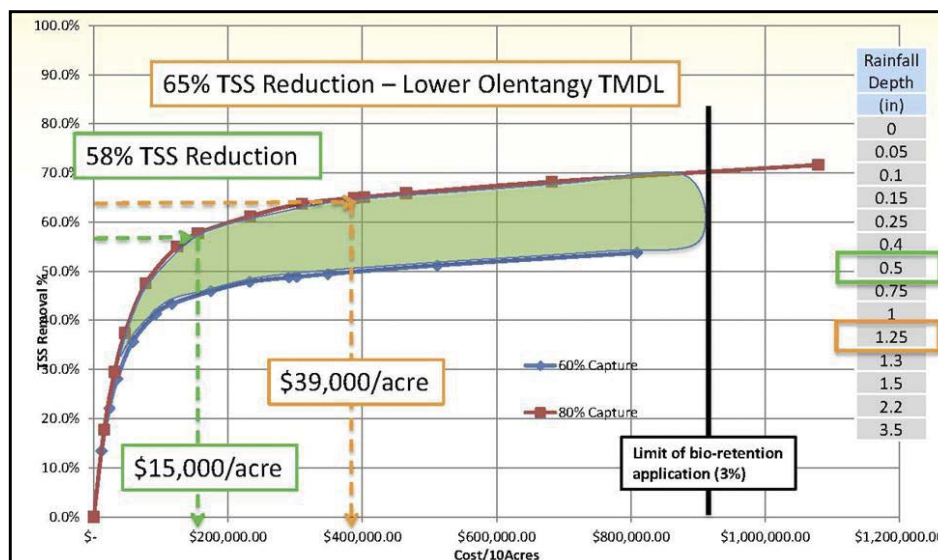


Figure 3: Example Cost Curve

The working groups evaluated the preferred methodology to use when determining the LOS and performed a technical analysis to simulate various storm system improvements intended to improve the LOS. In consideration of guidance provided by the City, the investigation was based on establishing performance curves that consider increased LOS related to storm system improvements against the cost of implementing those improvements. These curves can be used to determine a point beyond which additional improvements provide diminishing benefits relative to increased costs. Example cost curve - **Figure 3**.

After a thorough evaluation of the available models, the City selected the WinSLAMM modeling software to evaluate water quality, the PCSWMM modeling software to evaluate stormwater capacity, and the HEC-RAS modeling software to evaluate downstream channel conditions and peak flow impacts. These software were selected for their availability, widespread usage and technical support in the industry, and ability to produce results relatively easily and quickly given reasonable data sets. Many of the models examined for use were found to be more costly, less readily available and supported, and required significant data input and assumptions beyond the currently available information.

The consideration of LOS for water quality within this investigation included both regulatory standards and the quantifiable capabilities of GI to improve water quality in stormwater runoff. Using the WinSLAMM model, a technical analysis was completed to determine the benefits of providing increased stormwater benefit against the increase in cost. Construction of larger and more robust green infrastructure provides additional benefit by providing more available volume, but that benefit is reduced as the number of storms that are able to be treated by the larger volume is diminished.

Using TSS reduction as the primary stormwater quality metric, a cost curve was generated using different green infrastructure technologies, including pervious pavement and bioretention. **Figure 3** above shows the relationship between cost and TSS removal on a representative 10-acre residential area. This sample area was used to demonstrate the relationship between pollutant reduction and cost, but requires additional cost and water quality data to improve the accuracy of the figure.

The information on the cost-benefit analysis along with the detailed review of the proposed sites will help to guide the targeted water quality level of service.

The consideration of LOS for stormwater protection focuses on the capacity of the existing storm system relative to flooding recurrence intervals, and the incremental benefits associated with the consideration of both GI and gray infrastructure improvements. Across the City, the LOS related to storm system capacity can vary significantly depending on the nature of the existing storm system. Using the PCSWMM computer program, a technical analysis has been completed to determine the ability of GI to mitigate those impacts and even improve the level of stormwater protection. Addition of GI for water quality benefit has the potential to provide additional flooding protection, even on an incremental level. There is also a consideration of the potential for stream degradation in association with storm system improvements. Preliminary analysis using HEC-RAS indicated that significant erosion on a global basis throughout downstream reaches is likely not a concern, but individual areas may be subject to harmful erosion with increased peak flows. Evaluation of site specific erosion potential within urban streams will be conducted if increased peak flows are identified through any of the storm system improvements.

Vacant Lot Repurposing Pilot

One of the most exciting aspects of Blueprint is the possibility that we may be able to derive enough stormwater benefit from repurposing abandoned homes and vacant lots into stormwater management areas to justify that investment. We are currently conducting a pilot program on the South side of Columbus to help us quantify the costs and benefits.

The City of Columbus Land Redevelopment Office works to redevelop properties that have abandoned and vacant homes; working with this office has helped to identify available properties for further evaluation. The properties owned by the Land Redevelopment Office were evaluated to determine their potential stormwater benefit, feasibility for construction, and potential impact to the neighborhood. Sites that offered the most stormwater benefit while positively impacting the neighborhood were initially identified for the evaluation of concepts.

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A total of five sites were identified as having the most potential to provide stormwater benefit while integrating with the surrounding community. These sites varied from existing vacant and abandoned residential lots to the location of the former South Side Settlement House. These sites are located adjacent to areas of significant redevelopment in the City of Columbus, including nearby Nationwide Children's Hospital, the under construction South Side Community Center, and recently completed South Side Medical Center. The addition of these stormwater features and public green spaces will help to enhance the neighborhoods and spur additional growth and development to that already underway.

A number of different green infrastructure technologies were examined and proposed for use among the five selected locations. These technologies include:

- ◆ Bioretention cells
- ◆ Bioretention with trees
- ◆ Bioswales
- ◆ Underground stormwater storage
- ◆ Pervious pavement

The five proposed locations have a total site area of approximately 2 acres and are estimated to treat approximately 25 acres of tributary acres between them. The minimum target for treatment is approximately 0.75 inches of rainfall in a single event (equivalent to the Ohio Department of Natural Resources water quality volume). These sites would receive approximately 12 million gallons of runoff in the typical year with an estimated 80% solids reduction in the discharge volume.

While four of the sites will perform stormwater management while providing neighborhood beautification, the fifth site is proposed to be a park that integrates stormwater controls into public amenities. The proposed park is planned to have a pervious basketball court, playground, seating area and shade structures, and open spaces mixed with pervious walking paths. Consultation with additional

departments including Recreation and Parks and Public Services has been integral to the development of the park and to the coordination with other ongoing projects. This park will also offer an opportunity to educate the community on the goals and benefit of Blueprint Columbus by highlighting the different technologies and materials used in the park construction. A preliminary site plan for the proposed park is shown in **Figure 4**. Additional feedback and discussions with the local neighborhood will help to shape the final park design.

The Department of Public Utilities developing a stormwater park that looks and feels like any other park has been very well received. Our plan is to carry this pilot into our next pilot phase of overall Blueprint Columbus, thus combining the four pillars and the vacant lot repurposing.

Additional Updates

The use of green infrastructure and I/I removal is a large piece of the puzzle to solving wet weather issues, but Columbus is still making use of targeted gray infrastructure improvements when determined to be cost-effective. A Chemically Enhanced Primary Treatment (CEPT) facility at the Southerly Wastewater Treatment Plant is currently under design and when constructed, will provide treatment and disinfection for up to an additional 110 MGD during rainfall events, on top of the 330 MGD already available at Southerly. Maximizing in-system storage, using real-time control at the Alum Creek Storm Tanks, will provide a reduction in overflows based on improved system operation. Blueprint Columbus seeks to utilize these targeted projects along with eliminating excessive inflow and infiltration (I/I) from both public and private sources and the use of aggressive green infrastructure to provide clean streams and strong neighborhoods.

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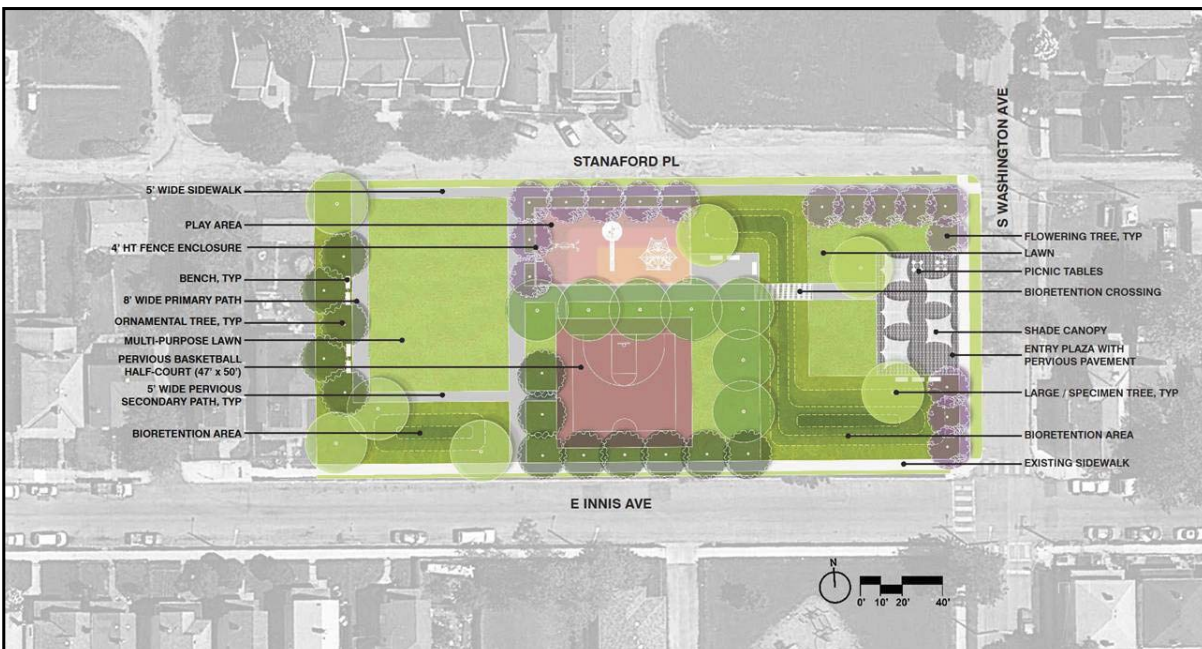


Figure 4: A preliminary site plan for the proposed park

LAND APPLICATION CONSIDERATION FOR SMALL AND LARGE UTILITIES

by Eric Dresbach, Owner W.D. Farms, Inc.

The following *Points to Ponder* are concerns or ways to reduce your cost of land application, whether it is hired out to custom applicators or done in-house.

1. Lowest bid is not always the cheapest. This path could lead to project delays due to underfunded or overbooked contractors with poor equipment, or change orders due to misunderstood terms and conditions of the contract. Checking of references should be part of the utilities due diligence *before* awarding a contract.
2. You cannot fix something if you do not know how it works. The utility needs to understand the application cost and how to reduce them. Time is money! The applicator has large and expensive equipment, thus needs to be productive. Therefore, the applicator needs to continually move product, apply product, and move to the next contract.
3. Quality does not cost; it pays. If you hire a bad contractor that does not move product when needed, utilities have to move to "Plan B" which drives up cost. Also, your farmers are upset and could cost the utility their reputation and thus, their land base. Land application is a 3 legged stool and for a program to be successful, everyone involved has to be successful - the utility, the contractor, and the land owner.
4. Dumb specifications cost money.
 - a. KISS - Keep It Simple Stupid - does this really need explanation?
 - b. Don't require a license that is not available.
 - c. Don't require something that is impossible to achieve or something with expensive investment with no benefit.

These items don't return anything to the utility; rather, all it does is increase cost, and cut out good, reputable operators who won't even submit a bid because they don't want the hassle.

5. Don't include specifications that have "unknowns." Specifications should be specifications. Specify who does the biosolids sample collection and who covers the costs of testing, who will get the permits, who acquires the land base, who does the soil samples and those costs. The unknowns cost money and anticipating these costs causes stress to all parties and causes change orders (see Point #1.)
6. Do not "cast past sins" upon future contractors. Examples are:
 - a. Past records and permits need to be re-done . . .
 - b. Bad operators = loss of land base (see Point #3).
 - c. Overbearing guidelines that are hard to follow or implement because they are trying to correct history, not improve operations.
 - d. Not enough land base permitted (again, see Point #3). The utility should plan on 4 to 5 times more acres permitted over annual land base needed.

7. Write bid specs for the lowest AND best bid; not just the lowest bid. This allows flexibility to be able to choose the contractor that will fulfill the needs of the utility.

The following are factors that determine a "good" operator and should, in turn, influence costs that ultimately determine the bidding price that the utility should consider. The factors that we look at in our operation for liquid application:

1. "Time to load" includes all time on and off road and can vary widely.
 - a. Do we have to back into a loading station or can we pull through? This factor affects the total time of operation.
 - b. Are driveways wide enough? The driveways need to be wide enough, so not to tear up grassy areas.
 - c. Is the traffic flow slowed or interrupted? Interruptions in flow can be caused by city employees or visitors; they need to respect the work flow of the contractor.
 - d. How long is length from the storage to the truck loading site? The shorter the length, the better because it's easier to set up and tear down and less opportunity for spillage from the hoses.
2. Does the city provide pumping? Are the lines 4 inch or 6 inch? Loading needs to be done at more than 1,000 gallons per minute. The product needs to "flow" - too thick, it will not pump quickly and increase carry-back, by not draining out of the tanker. If the product is too thin, it will cause increased transportation costs and storage costs with a lower value product.

Time to the field, or "road time," also varies widely. Miles traveled is only part of the time needed when considering road time. The utilities should use careful selection to locate fields that are easier to access with minimum amount of setbacks and neighbors, amount of traffic, traffic lights, stop signs, and crossing traffic. All these variables will add time, and thus expenses. An example of this scenario: a semi-truck and tanker costs approximately \$100 per hour or approximately \$1.70 per minute. To explain, an additional stop sign from a speed of 50 miles per hour to complete stop adds 5 minutes per stop and two stop signs (same sign each way) equals approximately ten minutes, thus \$17 per load or \$.003 per gallon or \$3,000 per one million gallons moved. Time is money and little things add up!

Field site issues that affect application include access for trucks, especially driveway width, field lanes, or safe area to unload on the road. Off-loading on the road is my least favorite option because it has the most danger for employees and the public. Field size will influence efficiencies. A small field is 20 acres or smaller and a big field is 70 acres or more. Either size can influence spreading times, either by multiple passes in small fields per tanker load or multiple tanker loads to complete one pass in a large field. If a permitted field is surrounded by houses and split by a creek, the amount of available acres to spread are significantly reduced compared to a field without neighbors, yet both cost the same amount to permit.

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For a utility to have a good land application program, you need to have a great relationship with your farmers! This relationship will increase your choices of sites.

Storage is also part of the cost and goodwill with farmers. If you have to move product when field conditions are bad, you will upset the landowner by causing damage to the field. Utilities need six months to one year of storage with planned hauls of twice per year. This program should have three options of land base available per year, including a summer window of application on wheat ground. This particular window is preferred by applicators and farmers both. There is no rush either trying to plant in spring or after harvest before winter weather starts. Another cost related to only having a small amount of storage is the constant cost of the contractor to move-in and move-out to do small amounts. Under sizing storage is stressful to the utility and reduces the window for the applicator to do timely application.

Good communication is the key to all project success. It should not have to be said, but it needs to be stressed: utilities need to have a good, consistent point-of-contact person. A contact person is an individual who understands team work and looks out for the overall outcome. They also need to provide updates on storage capacity, any utility plant updates like construction projects, and any other financial deadlines. The contact person should have a working knowledge of driveway needs, value working conditions, keep land permits up-to-date, initiate paperwork on bio-solids testing, and keep results on file with OEPA.

An applicator should stay in communication with the utility. An applicator contractor will ask for progress reports on storage or gallons to be hauled, monitor fields for soil conditions, maintain contact with farmers, monitor weather, both short-term and long range projections, as well as manage the information that is provided by the contact person. Other conditions that the contractor should monitor include neighbors to the land application area, outdoor events planned during the application window, and water well locations. A contract applicator also needs to explain setback requirements to the farmer so that there are no questions about areas ineligible for application.

The farmer and/or the landowner should have contact info for the applicator. This person needs to provide any other information or concerns before application; the concerns should be vented before application, not during or after the fact. Note: information can flow either way . . . the applicator, the farmer, or the utility can start a discussion. Just don't wait until the last minute.

Reducing Costs

Utilities continually ask us, as the contractor, "What can we do to reduce costs?" One strategy is to sell the product as a soil amendment. For the product to have value for a farmer, the following items influence the product's value as a soil amendment:

1. The product needs to be consistent - consistent percent solids content, consistent nutrient value, and consistent supply.
2. Product needs a good testing program with documentation of results.

3. The product needs to be explained in "pounds of NPK per 1,000 gallons." The testing program needs to produce this result.
4. Product needs economics calculated and priced on current fertilizer prices.
5. The value of the product will only be perceived as good as the application.
6. Who will sell the product (the contractor or the utility)? Who will collect the revenue from the sale (contractor or utility)? Who will decide which land will be used? These factors will influence the viability of participating as a contractor.
7. Who is responsible for the land permitting (contractor or utility)? This will influence time and cost invested in the project.
8. If the contractor is doing the land permit process, they will need to establish long term relationships and thus, the length of the contract can be a determining factor in how the product is marketed.

FYI - Present fertilizer prices have decreased up to 50% from 2012 along with the price of corn; therefore, corn producers will have less interest in buying bio-solids. The farmer that understands the value of organic fertilizer is the farmer that should be your market. The selling point of organic fertilizer is overall dollar value, slow release of nitrogen, micronutrients, organic matter, and perhaps, increased biological activity.

Current fertilizer prices (Feb 2014) - See **Table 1** below.

An example would be as follows: The sample analysis is 12-18-1/1,000 gallons or \$15.44/1,000 gallons minus a percentage of unavailable of N & P due to application methods and soil temperature.

Contract Roadblocks Equals Increased Costs

1. Performance bonds cost money. They are not needed, very hard to enforce, or collect. They drive up the price and push away possible bidder candidates. The savings realized by eliminating this could be 5 to 10%.
2. Prevailing wage greatly increases cost and paperwork for both parties. The savings by eliminating this requirement could be as much as 10%.
3. Fuel surcharge: if the fuel cost is unknown, the contractor will have to make all costs higher to account for a possible fuel price surge. Fuel surcharge language in the contract will allow the contractor to plan should the price of fuel spike again. With fuel surcharge language, the risk is managed for the contractor. For this specific area of the contract, here is an example:
 - a. Pricing is based on \$3.00 per gallon fuel using DOE (Department of Energy) website for Midwest prices. This price is released on Monday at 5 pm. This charge will be assessed during the weekly or monthly billing cycle.

Nitrogen (N) 28% N - \$375/ton	Phosphorus (P)18-46-0 - \$600/ton	Potassium (K)0-0-60 - \$460/ton
67¢/lb.	39¢/lb.	38¢/lb.

Table 1: Fertilizer Prices Feb 2014

- b. Some utilities use 1% increase for 10¢ change in price; others use 1.5% for 10¢ change in price.

DOE price \$3.45 - \$3 base (contract base price) = \$3.45 ... or five 10¢ brackets
Price per gallon: If the price is \$3.00 to \$3.10 = 1.5% increase, therefore, the contract price is increased 1.5%
Price per gallon: If the price is \$3.40 to \$3.50 = 7.5% increase in contract price.

- c. The 1.5% truly reflects the increased cost of fuel
- d. The opposite is also a good management practice for both the utility and the contractor. If base price is too high and fuel drops below base, the utility loses, unless there is a negative fuel surcharge. With lower than expected fuel prices, the utility and the contractor can both save money as the cost of operation is less than predicted. A negative fuel surcharge clause can assist both parties and encourage efficient operations. Bottom line: If fuel cost is unknown, the contractor will pass on increased cost into the bid. The city will take the risk but will have a method to compensate the contractor without change orders and conflict and only pay the cost of the fuel without a “fudge” factor.

How to choose a quality operator

These are the items that should be considered by the entity issuing the contract. As a public entity, one should be conscious of who you are doing business with and thus, check all aspects of their work. Items to check include, but are not limited to the following:

1. List of past work: who, what, where, when, and project time;
2. References from utilities: satisfaction of job completion;
3. References from farms: satisfaction of application, soil condition before and after application;

4. Industry reputation: within the application industry, throughout the community;
5. Inspect base of operations: look at their headquarter operation and you will gain a sense of their operational philosophy and work product;
6. Visit a working job site: seeing a job site in action will provide a sense of human and equipment management;
7. Inspect equipment: Quality of equipment, age of equipment, tire size on applicator because compaction is a big issue with farmers;
8. Gallons of thru-put per hour of application, this equals days of operation. Faster means less days needed to complete project.;
9. Housekeeping: clean operations equals attention to detail; review their mission statement: is it a job or a passion . . . ?; review their business philosophy - always do what is right or just get it done fast . . . ?
10. Ability to run with minimal soil disturbance to attract no-till farmers to program; and
11. Incorporation to provide good odor control for neighbors and to satisfy OEPA regulations.

A well written bid specification package that includes a plain spoken contract with good details will provide guidance to bidders. Leave out undue and burdensome specs that contribute nothing to improve safety or flow of operations, but will only increase costs to both parties. Do not change specs mid-contract as it is detrimental to both sides, as well. Hire a quality applicator. Remember, one bidder is not a competition, so encourage multiple quality bidders to help utilities meet their goals.

Eric Dresbach, Owner of W.D. Farms, Inc., has over twenty five years experience bidding utility contracts.

ericd@wdfarmsinc.com



ROLL CALL

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David Parkinson, PE, joins CT Consultants as a Senior Project Manager. His responsibilities will include staff management, project development, and technical support. In addition, he will assist clients with developing and managing projects to address a wide variety of infrastructure needs.

Mr. Parkinson has more than 30 years of experience in the successful delivery of design and construction management projects related to water, wastewater, stormwater, roads and other services required of the public sector. His primary career focus has been on managing the planning and design work for civil and municipal infrastructure projects, including managing project budgets, schedules and staffing; supervision of technical staff; overseeing the preparation and review of construction contracts, plans, specifications and tender documents; and managing contract administration and construction inspection staff.

Dave is a registered Professional Engineer in Ohio, West Virginia, Colorado, and Arizona. He is a member of the Water Environment Federation (WEF) and American Public Works Association (APWA).

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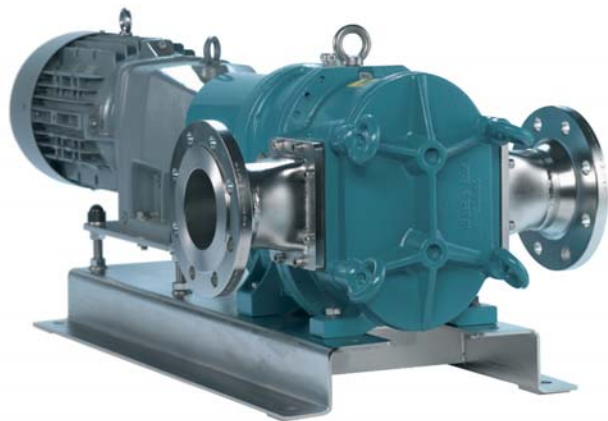
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VILLAGE OF MIDDLEFIELD WASTEWATER TREATMENT PLANT

The Village of Middlefield is located in northeast Ohio, in Geauga County. It has a population of 2600 people, occupying 1700 acres. Middlefield is the 4th largest Amish settlement in the world and is home to a large number of businesses, including 24 restaurants and 27 manufacturing facilities. There are 15,000 commuters to Middlefield daily as a result of this. Middlefield is home to Kraft Maid and the Middlefield Cheese Company.

Middlefield had its first permanent residents in 1799, and its first hotel was built in 1818. It became incorporated in 1901 - and had no utilities. The first sewer lines were dug by hand in 1956, and an air lift station and Imhoff cone were installed that year as well.

A septic tank was installed at the lift station in 1972 to keep solids from flowing into the river when the station failed. Two lagoons were added to the treatment process in 1973, and the Imhoff tank was doubled in size in 1974.

The large lagoon was split in 1982 to allow for cleaning without loss of treatment. A second lift station was installed downtown in 1986, and handled about 80% of the town's flow. The original air lift station was replaced in 1988; this location handles about 20% of the town's flow.

A package plant was constructed in 1992. This plant included 500,000 gpd activated sludge, coarse bar screen, grit removal, grinders and UV disinfection. The upgrade allowed for 45 days of sludge storage. The lagoons were retained and used, and the Imhoff cones handled about 20% of the flow.

The Imhoff tanks were taken offline in 1992. The flow for the WWTP at that time was 470,000 gpd. An increase in housing and business in the area during the 1990's created increased flow to the wastewater treatment plant, and ARCADIS conducted an I&I

study in 2001. The study showed that a larger wastewater treatment plant was needed for the village. After evaluation of service area, current facility, receiving stream, solids handling, staffing needs, regulatory compliance and financing – a plan was developed and presented for approval.

The large lagoons were cleaned out in the fall of 2005 and closed down. Construction of the new facility was started in 2006. In 2008, the Eagle Creek splash pad was installed. The septic tank from the air lift station was located and removed.

In April of 2008, enough of the new facility was completed to start treating flow. The package plant was abandoned at this time, while construction of the new facility continued. Construction was completed in September of 2008, with a design flow of 1.0 mgd and a peak flow of 2.0 mgd. The design allowed for expansion to 1.5 mgd and 3.0 mgd. The new plant included activated sludge, screening, grit removal, three treatment tanks, two clarifiers, three tertiary filters, and a 2.3 million gallon EQ tank. The old facility is used for sludge storage, providing 360 days of storage.

Middlefield currently treats 650,000 gpd, and all reportable parameters have been reduced since the construction of the new facility. The TSS and CBOD's are undetectable at times as a result of the improved treatment, and the ammonia, Oil and Grease, and phosphorus levels are now low as well.

The new plant handles storm events well, and reduces sludge production (from 100 dry tons to 70 on average). There is room for expansion of the facility as the Village grows, allowing it to be able to meet the increasing demands of a thriving community.

The current staffing of the facility is shared with the water treatment plant. There are two full time operators (one goose removal expert) responsible for operation and maintenance of the wastewater treatment plant and the water treatment plant, as well as grounds maintenance, alarm responses, and care and maintenance of the lift stations and booster stations.

Mike Cipolla
Chief Operator, Middlefield WWTP and WTP
mcipolla@middlefieldohio.com



Middlefield Laboratory



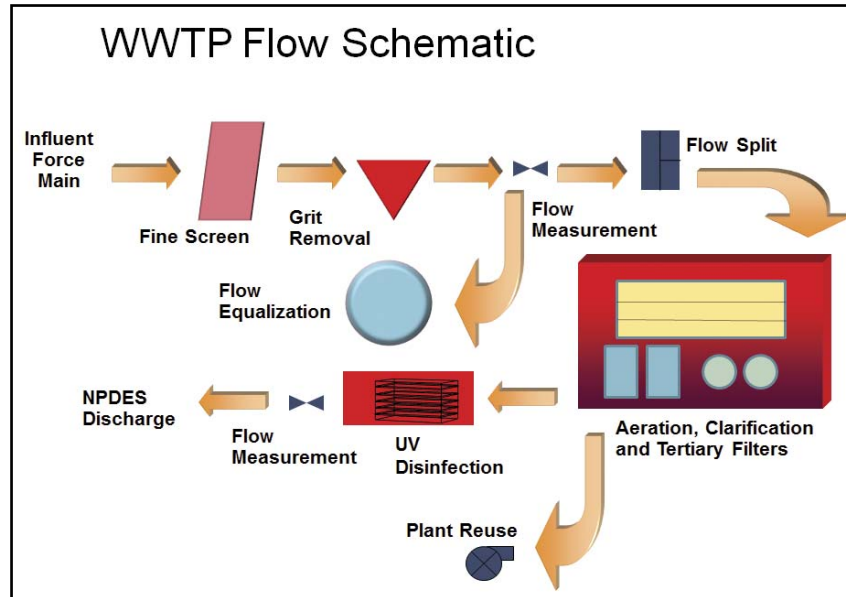
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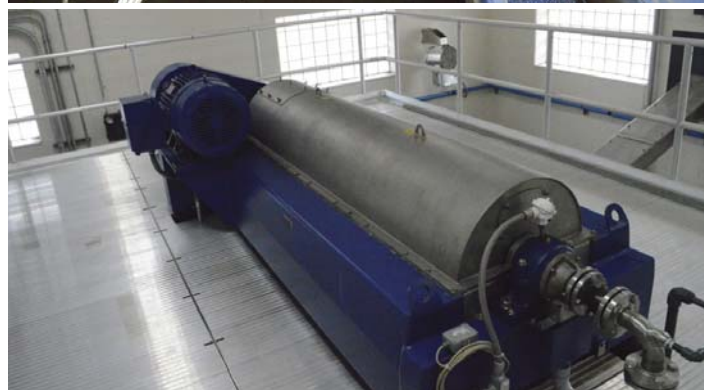
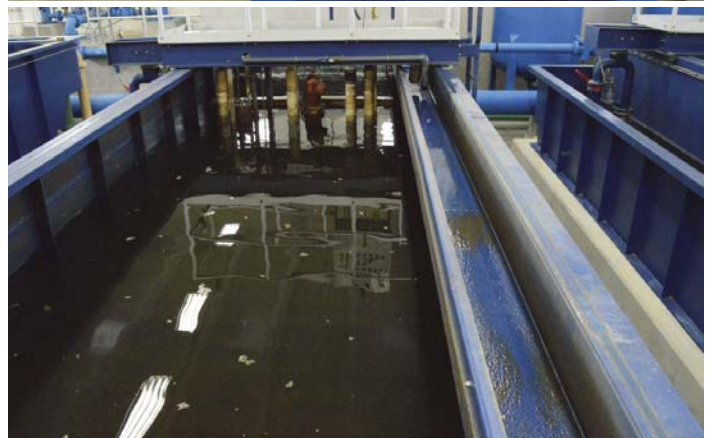
(left) Mike Cipolla, Chief Operator for WWTP and WTP



(center, right and next page) Middlefield Wastewater Treatment Plant



Middlefield Flow Schematic





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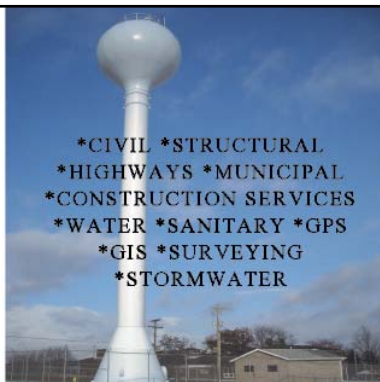
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SUSTAINABILITY MEANS IT'S AFFORDABLE AND COMPETITIVE

by Clemens Halene, Chief Operating Officer, quasar energy group

Every year I attend multiple conferences and trade shows across the country. Although each features different keynotes, themes and goals, I've noticed a common trend nationwide in the wastewater industry: the desire to achieve sustainability.

"Sustainable" is a broadly tossed around term with wildly ambiguous definitions that vary based on the context and the speaker. Sustainability often gets confused with being "green" - these words, in my opinion, are not interchangeable. "Green" is a philosophical, charitable, socially conscious state - doing what is environmentally sound because it is environmentally sound. "Green" is a moral decision.

While "sustainable" is more pragmatic and capitalist in nature - it's an activity performed because it costs less and is better than the other options. It's something we can do over and over again without consequences. In this context - specifically without environmental or fiscal consequences.

There will, and there must always, be early adopters who will spend more to be green because it is the environmentally sound decision. These are the pioneers necessary to move technology from prototype to production. The Federal government and many state governments have historically played the role of early adopter or facilitator when it comes to developing and strengthening our national energy infrastructure. Historically, the Federal government has subsidized more than \$446 billion in developing oil and gas and \$185 billion in nuclear energy (PEW Charitable Trusts). Ohio's Alternative Energy Portfolio Standard (AEPS), SB 221, is designed to perform a similar function on a much smaller and less expensive scale - to move green electricity technologies toward sustainability by 2025 when the subsidies expire. There is, however, an initiative pending in Ohio's legislature to "freeze" the AEPS at 2014 levels, halting innovation in its tracks.

It was the vision of quasar energy group to be that pioneer in anaerobic digestion technology in the United States; to impact the sustainable future of organic waste management and energy generation. Anaerobic digestion allows microorganisms to break down organic waste in the absence of oxygen, creating biogas, which can be captured to use for electricity, pipeline quality natural gas, and motor vehicle fuel. In 2006, when quasar was formed, application of high solids anaerobic digestion was scarce in the U.S. We were the early adopter who took the risk to feed innovation.

Over the last eight years three primary anaerobic digestion applications have evolved. The first is agricultural-based: siting the digester directly on the agricultural land, facilitating manure management while accepting additional organic waste into the digester. The second type is at a merchant site: where material is transported to and from a stand-alone anaerobic digestion facility. The third application is on-site at wastewater treatment plants and can be developed one of two ways: either through new construction on-site or integrated into the current facility (retrofit). This provides plant superintendents the opportunity to reinvent their operation and change the future of wastewater management. The current infrastructure is aging and supervisors are faced with a decision: fix the current facilities or explore new methods of resource recycling, such as high-solids anaerobic digestion.

For emerging technologies to achieve sustainability, there needs to be a clear path toward independence - toward becoming an affordable and competitive solution. quasar's first anaerobic digester on The Ohio State University's OARDC campus in Wooster, Ohio cost \$5 million to build. Today we could build the same plant for \$3 million sustainably. Anaerobic digestion is becoming an immediate solution to biosolids management needs that will save money and allow wastewater treatment plants to become competitive - a goal of any thriving business.

This need is ever-apparent in the wastewater industry. Wastewater treatment plants are operating with decades-old infrastructure in need of repair while simultaneously facing shrinking budgets and fluctuating populations. But the stressors don't end there. With more attention being drawn to nutrient overloading in our watersheds, facilities will be required to reduce pollutant loading and management mandated by the Clean Water Act. However, achieving these goals with 1950's technology is not likely or affordable.

Traditional anaerobic digestion technology installed at treatment plants has typically only been able to handle about 1.5% solids material. High-solids anaerobic digestion technology runs 8 to 10% solids with the capability of running up to 14%. This is achieved through a combination of 21st Century mixing and material handling such as pumping systems, solids receiving, and heat exchangers.

Anaerobic digestion technology provides plant supervisors with a sustainable biosolids management method. This commercially-available technology does more than apply a band-aid to infrastructure woes. It shapes a future for the industry that goes beyond disposing of a city's sewage solids. It is sustainability in the purest sense of the word: the opportunity to reduce operating costs, produce energy, and make a positive impact on the future of the environment.

In 2013 quasar completed its flagship high solids anaerobic digestion retrofit project at the City of Wooster's Water Pollution Control Plant. In the fall of 2011 the city decided to proactively look for opportunities to address findings and orders from Ohio EPA to make improvements to the plant, which included solids handling upgrades. The facility was rapidly aging and the existing digesters were in poor condition. It also didn't have the capacity to handle the volume of solids being generated from the plant. The water pollution control staff decided to face the issue head-on and proactively seek a solution. The City collaborated with URS to conduct an evaluation of the facility and issued an RFP to identify a solution that made the most business sense. Anaerobic digestion was chosen as the best and lowest-cost option.

After completing Phase 1 of the project the immediate benefits to the city were significant. Anaerobic digestion now produces 100% of the electricity needed to operate the digester and treatment plant while generating excess energy. The city no longer had to dispose of its digested biosolids from the wastewater treatment plant. The facility also began taking in more organic material generating additional revenue for the city due to a significant increase in capacity. The private public partnership has future plans to build a CNG fueling station, creating an additional revenue stream and

another economic driver for the region. This is part of two more phases that are in the works to optimize resource recovery while providing economic development opportunities and cost savings for the community.

It was because of the forward-thinking vision of the City of Wooster that these milestones were achieved. The decision makers in Wooster understood that sustainability goes beyond being “green”: it’s about making their operation affordable, reliable and sustainable for years to come.

The Wooster project is just one example of a paradigm shift that is happening in the wastewater industry. It is rapidly changing from a business of waste disposal to one of resource recovery.

Historically, the role of wastewater treatment plants has been to manage the collection, treatment, and disposal of wastewater. However these plants are now positioned to stretch beyond traditional functions and become an outlet for revenue beyond inherent functions. Infrastructure updates can uncover the value hidden in municipal waste streams. This task is sustainability in its purest sense: to remain operational and competitive while capitalizing on available resources.

This revenue potential lies within the energy output capabilities of the wastewater facilities. Of the 14,780 wastewater treatment plants in the country, only 76 (biogasdata.org) are energy exporters, generating more energy than they consume. Every one of these plants could become energy exporters with the integration of high-solids anaerobic digestion. Creating energy from these facilities is vital, as wastewater treatment plants are currently

responsible for 3% of the total electricity usage in the United States. There is potential for this statistic to change dramatically. According to recent industry analyses, heat and embedded energy in biosolids contain enough energy to meet up to 12 percent of U.S. electricity demand.

The opportunity is there to reclaim and repurpose valuable nutrient resources while stabilizing operating costs and stimulating regional impact. Some projections forecast that by 2030 there will be a global shortfall of 40% between water supply and water demand. Nutrient overloading is causing distress in watersheds across the country. Efficient water reuse can be achieved by deploying clean water technology at wastewater treatment plants.

The wastewater treatment industry is just that: an industry. It is a business that should be run efficiently, effectively, lean and smart. It is a pivotal time for wastewater treatment plants. The infrastructure decisions made now will significantly impact cities, ratepayers and the future of the industry. The Wooster project illustrates that this future is imminent. We’ve gone beyond the development stage. The early adopters have taken the risk and the reward has been proven.

A sustainable future is here. Opportunity has fed innovation that has given the industry the ability to be both green and sustainable. And that is significant.

Clemens Halene
Chief Operating Officer
quasar energy group

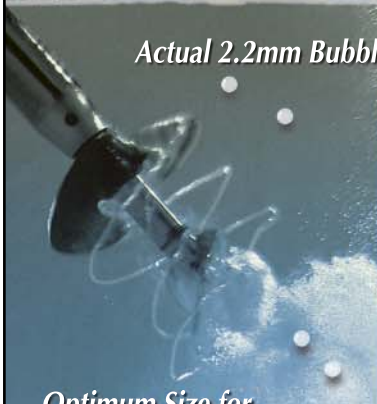


High solids anaerobic digestion retrofit project at the City of Wooster's Water Pollution Control Plant

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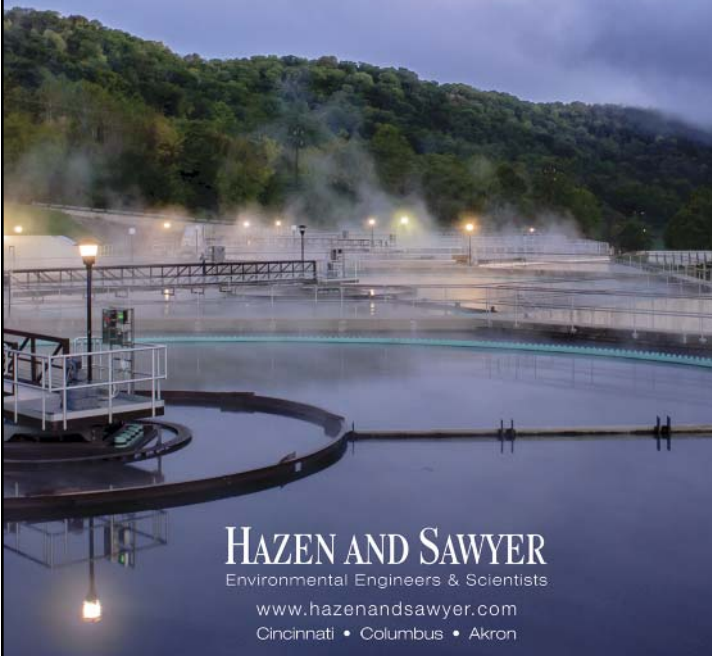
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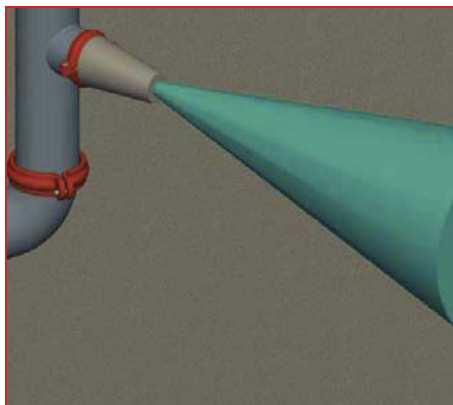
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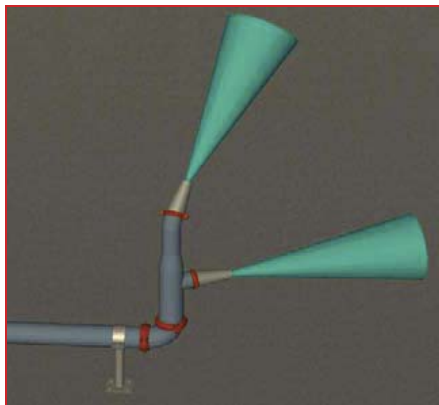
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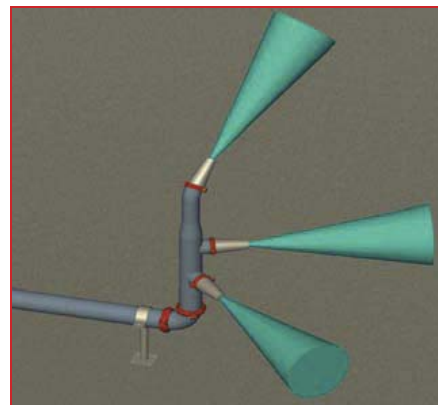
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SINGLE ZONE MIXING FOR SHALLOW TANKS



DOUBLE ZONE MIXING FOR DEEP TANKS



TRIPLE ZONE MIXING FOR VERY DEEP TANKS

HYDRAULIC SLUDGE MIXING APPLICATIONS

- ♦ Digester mixing
- ♦ Mixing anaerobic digesters
- ♦ Sludge holding tanks
- ♦ Aerobic Digester Mixing
- ♦ Equalization tanks
- ♦ Variable liquid level tanks

MIXING SYSTEMS, INC.

- ♦ Preferred provider of submerged jet aeration and jet mixing systems
- ♦ Single, double and triple zone mixing
- ♦ No rotating equipment in digesters

HYDRAULIC SLUDGE MIXING BENEFITS

- ♦ Energy efficient
- ♦ Stainless steel nozzles
- ♦ Nozzles hardened to a Brinell hardness of 450+
- ♦ Chopper pumps
- ♦ CFD mixing analysis

MIXING SYSTEMS, INC.

7058 Corporate Way, Dayton, OH 45459-4243

Phone: 937-435-7227 ♦ Fax: 937-435-9200

Web site: www.mixing.com

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