

The Ohio Water Table

A Publication of the Water Management Association of Ohio

No. 148 / Quarterly

TerrAqua, an Affiliated Student Organization with WMAO, Receives Rachel Carson Award

Submitted by **Karina Peggue**, President, TerrAqua



TerrAqua is an organization housed within the School of Environment and Natural Resources at the Ohio State University and is predominantly a water science-based organization. TerrAqua is the first Affiliated Student Organization (ASO) in membership with the Water Management Association of Ohio (WMAO). They received the Rachel Carson Award on October 3rd at the Civic Engagement Banquet. The Civic Engagement Banquet is an annual event designed to promote the concept of “Education for Citizenship”.

The Office of Student Life’s Social Change recognizes and awards students and organizations for making changes and providing service to better both Ohio State University and surrounding communities. Awards are nomination-based and are named after notable philanthropists. The Rachel Carson Award is named after the author of the book *Silent Spring* (1962), a sensational book that brought to light the hazards of chemical pesticides, such as DDT, and educated the public about misinformation spread by the chemical industry.

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Pictured left to right: Eugene Braig (Advisor, WMAO Board Member), Hannah Comune (Vice President), Karina Peggau (President), Rylie MacDonald (Secretary).

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TerrAqua received the Rachel Carson award on behalf of their work with a local Columbus community, the residents

at Hidden Lake Condominiums. During the summer and early fall seasons for several years, TerrAqua students have been taking monthly samples at Hidden Lake, a privately-owned spring-fed quarry in western Columbus. The students keep track of trends in water clarity, level height, color, and temperature in accordance with the Ohio Lake Management Society's (OLMS) Citizen Lake Awareness and Monitoring (CLAM) program. OLMS is a division of the Water Management Association of Ohio.



Not only do students learn valuable water quality assessment skills, but citizens of Hidden Lake also gain valuable insight on water quality and how to monitor it. Residents at the Hidden Lake Condominiums have been active participants in monitoring water quality, often visiting with TerrAqua students and inquiring about the health of their private lake. TerrAqua plans to continue monitoring the lake this summer and educate the community about lake management and care.

President's Column

Craig Smith, WMAO 2018-2019 President

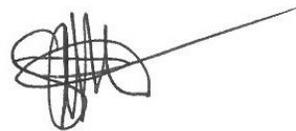


The start of the new year is a time to reflect on the past year. When I think about last year one thing comes to mind – October's WMAO / NALMS Conference in Cincinnati. The presentations and speakers were fantastic, as always, as was the work of the Conference Planning Committee. The conference the committee members did their usual stellar jobs despite all the complications presented by staging a joint conference in an unfamiliar venue on a rainy day. Thank you, Dana, Eugene, Kim, Scott, Alex, Greg, and Anthony, for all your hard work.

I also need to thank the officers and directors for their service. You are a dedicated group of professionals that bring experience, intelligence, and wit to our meetings. Thank you. And don't let it go to your heads. Seriously.

It's also a time to look ahead. We have a lot to look forward to this year. Later this month we'll resume the luncheon series with a presentation on USGS's gage network, provided they're back to work by then. In March we'll resume our partnership with the Environmental Professionals Network for a session on emerging contaminants. In April OFMA will host the ASFPM Conference in Cleveland. The Ohio Stormwater Conference will be in Sharonville in May. And the Fall Conference returns to Columbus in November. In between OWPA, OSWA, and the rest of the Divisions will offer multiple educational, training, and networking opportunities.

All in all, 2018 was all right. 2019 will be, too.



*"...time to look ahead.
We have a lot to look
forward to this year."*

WMAO / EPN Spring Meeting
Tuesday, March 5, 2019

Nationwide and Ohio Farm Bureau 4-H Center
Ohio State University, Columbus Ohio

Emergent Contaminants and Our Water Resources

Special Keynote:
Laurie Stevenson, Ohio EPA

Presenters:
Wayne Carmichael, Wright State University
Andy Lindstrom, U.S. EPA
Sarah Lowe, NOAA

\$40 includes EPN breakfast, student registration is free
\$300 Exhibit Booth + 1 registration
\$100 Sponsor

***Hosted by the Water Management Association of Ohio in collaboration
with the Environmental Professionals Network, Ohio Water
Resources Center, and TerraAqua***

[Agenda and Online Registration](#)



CALL FOR ORGANIZATIONAL PARTNERS!!!

If you are active in the Ohio Stormwater Industry - please consider becoming Our Organizational Partner.

The Ohio Stormwater Association reaches thousands of professionals in the Stormwater industry through our events and our partnership on the annual conference.

2019 OSWA Organizational Partnership Levels:

- \$5,000 - OSWA Platinum Level Organizational Partner
- \$1,000 - OSWA Gold Level Organizational Partner
- \$500 - OSWA Silver Level Organizational Partner

Organizational Partners receive the following benefits:

- Your logo on the OSWA website
- A link to your website from the OSWA website
- Your logo in the OSWA newsletters and email updates
- Your logo displayed at all OSWA events/presentations/webinars

See attached request letter for details.

Email Bob Lentz to sign up or with questions: lentzb@stormwaterdistrict.org.

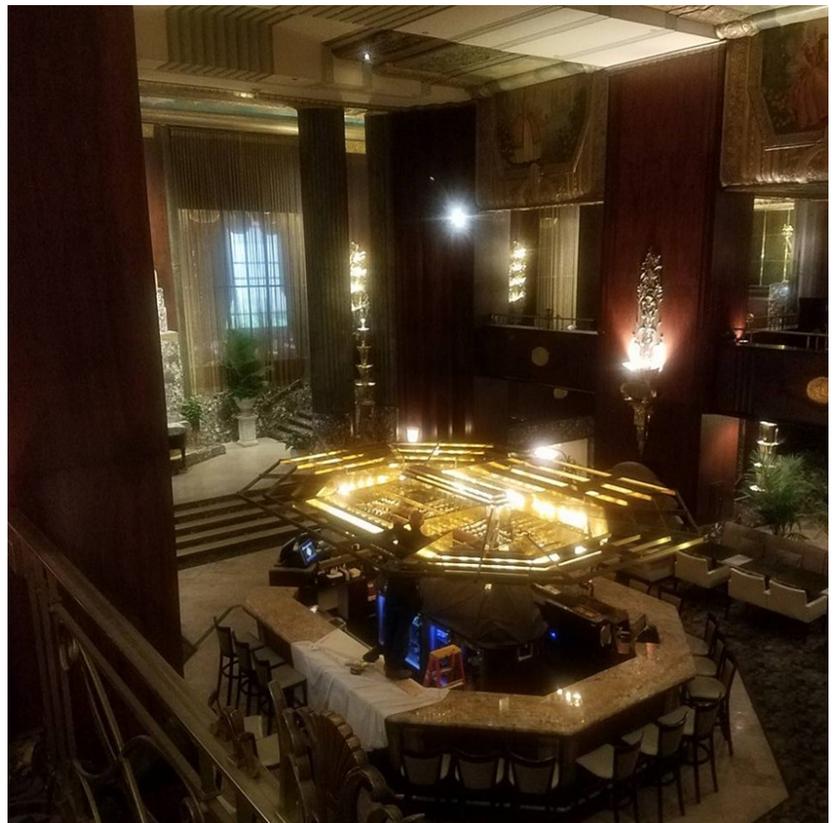
Innovation in Water Resource Management



47th Annual WMAO Conference was held on Wednesday, October 31, 2018

*At Hilton Netherland Plaza and Duke Energy Convention Center
in Cincinnati, Ohio*

2018 provided WMAO with the unique opportunity to combine our annual conference with the 38th annual international symposium of the North American Lake Management Society, 30 October - 2 November 2018 in Cincinnati. The Ohio Lake Management Society (OLMS: a division of WMAO) partnered with the Indiana Lakes Management Society as conference hosts. Many of WMAO and OLMS's board members worked on the host committee. WMAO held its dedicated sessions, social, and awards events on October 31st. Conference programming was augmented by workshops, field trips, a tour of Rhinegeist Brewery, live classical music, and general comradery of Ohio's water-management professionals with an audience of international attendees.



Art Deco architectural masterpiece, the Hilton Netherland Plaza, provided an opulent setting (photo credit: Doug Kane). Plenary and conference sessions were held at the Duke Energy Convention Center, Cincinnati, OH.



2018 Award Recipients (Left to Right): Lisa Daris - R. Livingston Ireland Award; Harry Kallipolitis - Wayne S. Nichols Award; Greg Lipps - Distinguished Service Award; Chris Crawford - Technician of the Year; Michael Miller - Ohio Water Hall of Fame; Dave Sicker - Voices in Water Award; Shawn Spence - OLMS Lifetime Achievement (posthumously - accepted by AquaDoc representative); Justin Chaffin - OLMS Innovation in Lake Management Award; Linda Merchant-Masonbrink - OLMS Presidents' Award; and Four Mile Creek Site 10 - ODSO Best Maintained Dam Award (accepted by Preble SWCD representatives). Not shown: Lake Arrowhead Dam - ODSO Best Maintained Dam Award and Jim Shoemaker - WMAO President's Award. (photo credit: Anthony Sasson).



Associated field trips included a visit to The U.S. EPA's Experimental Stream Facility in Milford, OH (photo credit: Doug Kane).



Thomas More University's Biological Field Station on the Ohio River in Crestview Hills, KY also provided excellent field experiences for attendees (photo credit: Eugene Braig).



*Dr. Chris Lorentz, Thomas More University, shows off a juvenile Ohio-endangered hellbender salamander (*Cryptobranchus alleganiensis*) (photo credit: Doug Kane).*



Meeting on Halloween gave Kent State University graduate student Jordyn Stoll the opportunity to dress as a Secchi disk and pose with Dr. Doug Kane, OLMS President.



Halloween also provided opportunity for conference sponsor AquaDoc's mascot frog to make an appearance (photo credit: Doug Kane).



*NALMS was provided a unique opportunity to participate in the sponsorship of a performance of the oratorio *Voice of the Lake* by award-winning composer Margaret Brouwer (standing in green sweater) held at Cincinnati's 21c Museum Hotel, just a couple blocks away (photo credit: Lisa Borre).*



Thank you to our generous sponsors!





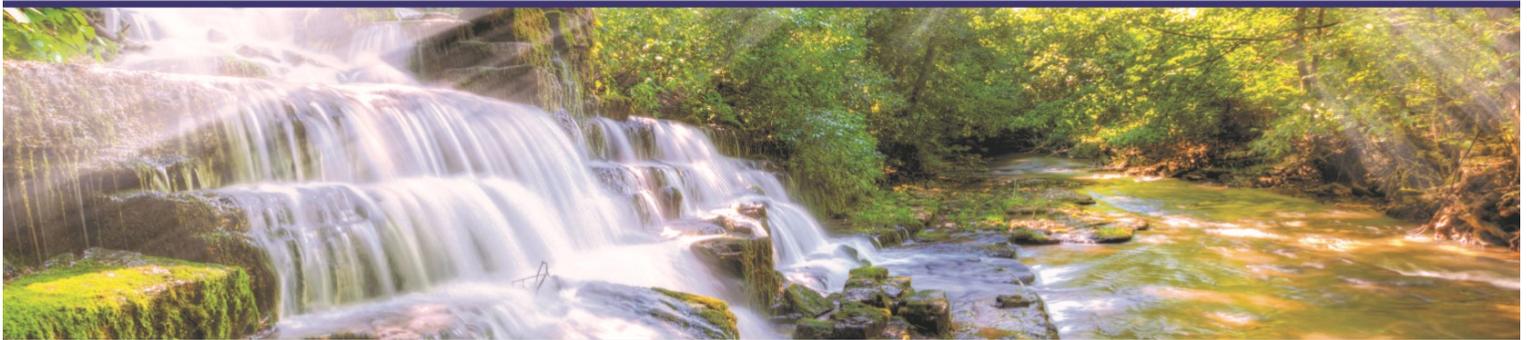
2019 Ohio Stormwater Conference

Stormwater and
Watershed Management

One of the Largest Regional
Stormwater Conferences in the United States

May 8-10, 2019

Sharonville Convention Center
Sharonville, Ohio
www.ohstormwaterconference.com



Ohio EPA Offering Nearly \$3 Million Total in Grants for Nonpoint Source Reduction

Proposals due by February 15, 2019

Ohio EPA is requesting proposals for implementation projects to reduce nonpoint source pollutants, such as nutrients, sediment and bacteria; improve stream and riparian habitat; or reverse the impacts of stream hydromodification. Nearly \$3 million in grants is expected to be available.

This an opportunity to fund effective action on important priorities such as nutrient reduction within the Western Lake Erie Basin. Proposals should be linked to critical areas identified in Ohio's watersheds such as projects that improve water quality in Ohio streams from nonpoint sources of pollution. Projects that measurably reduce nutrients, eliminate impairments, or restore impaired stream segments are more of a priority than general nonpoint source pollution prevention projects.

"Ohio EPA is continuing its comprehensive science based and data driven strategy to reduce the total amount of nutrients entering Lake Erie," said Ohio EPA Director Craig W. Butler. "Through this funding we are prioritizing innovative projects in high priority areas within the Western Lake Erie Basin that will measurably reduce nutrient and sediment losses, or restore coastal wetlands."

"One of the more difficult challenges of cleaning up Lake Erie is finding the necessary financial resources," said Adam Sharp, executive vice president, Ohio Farm Bureau Federation. "Clean Water



Act funding to address nonpoint sources in the Western Lake Erie Basin will help farmers help the lake. Ohio EPA's decision to target this challenge is a wise decision."

"Ohio's corn and wheat farmers are appreciative that dollars are being made available to help us implement science-based practices that build upon the tremendous body of work the farming community has already accomplished to improve water quality in Ohio," said Tadd Nicholson, executive director of Ohio Corn & Wheat Growers Association.

Eligible applicants include Soil and Water Conservation Districts; local municipalities, counties and townships; county and municipal park districts; nonprofit conservation and watershed organizations; and land-managing state agencies.

"As we continue to focus on a comprehensive plan of action to improve water quality in Ohio, particularly in the Western Lake Erie Basin, this funding gives us more opportunities to help tackle the challenges," said President Harold Neuenschwander of the Ohio Federation of Soil and Water Conservation Districts. "I encourage innovation and collaboration to ensure the grants are maximized to gain the greatest effectiveness," concluded Neuenschwander.

Applicants proposing projects consistent with recent nutrient initiatives such as the Western Lake Erie Collaborative, Ohio Nutrient Reduction Strategy, Ohio Domestic Action Plan and/or the state's approved Nonpoint Source Management Plan are particularly encouraged. Proposed projects must be identified within a U.S. EPA approved 9-element nonpoint source implementation strategy.

"We appreciate the efforts by Ohio EPA to use tools within their authority to target harmful algal blooms and sedimentation of our rivers and Lake Erie," said Kristy Meyer, Vice President of Natural Resources Policy from the Ohio Environmental Council Action Fund. "While funds are not the only solution, coupling this investment with Great Lakes Restoration Initiative, Farm Bill, and Clean Lake 2020 will certainly support more projects that are geared towards increasing water quality and the creation of healthy watersheds across Ohio."

Applicants proposing projects consistent with recent nutrient initiatives such as the Western Lake Erie Collaborative, Ohio Nutrient Reduction Strategy, Ohio Domestic Action Plan and/or the state's approved Nonpoint Source Management Plans are particularly encouraged.

"We're committed to supporting the great work of our local partners to improve water quality across Ohio," said Kirk Hines, Chief of the Ohio Department of Agriculture Division of Soil and Water Conservation. "We hope groups and organizations take advantage of these resources which can really make a difference."

These grants provide up to 60 percent of total project cost and have a maximum three-year term. Local participants must provide 40 percent of total project cost either through in-kind services and/or cash. Grants are expected to be awarded to applicants in late spring 2019 and will be in effect for three years.

Project proposals are due to Ohio EPA by Feb. 15, 2019. The application form for these water quality grants, as well as directions for applying, is available online at www.epa.ohio.gov/dsw/nps/index.aspx.

Research Highlights from State of Ohio Water Resources Center

The Ohio Water Resources Center is a federally authorized center situated at the Ohio State University. We fund State relevant water related research. Below are the highlights from a recently completed Center project conducted by Dr. Steven Buchberger, Professor and Head of the Department of Civil Engineering, Architectural Engineering, and Construction Management at the University of Cincinnati. The project titled, **“Improved Estimates of Peak Water Demand in Buildings: Implications for Water-Energy Savings”**, aimed to quantify water and energy savings resulting from hot water use in residential plumbing systems serving households with efficient fixtures. A key step in the analysis involved development and application of a novel Water Demand Calculator (WDC, see Figure 1) by graduate student Toritseju Omaghomi.

An estimate of peak water demand is the most crucial factor for sizing a building’s water distribution system. Hunter’s design curve has been used for this estimation since 1940. However, with changes in fixture performance and consumer water use habits over time, Hunter’s iconic design curve significantly over-estimates peak water demand for indoor hot and cold-water uses. Buchberger and Omaghomi compared peak water demand in a 2-bath home and the resulting pipe sizes from the WDC against the traditional Hunter’s curve. They simulated instantaneous indoor hot water use and evaluated the energy delivered and lost within the household distribution system for a one-year operating period. Results show that premise plumbing systems with efficient water fixtures can be substantially smaller in scale (i.e., reduced pipe diameters, meters, heaters, softeners) than the plumbing systems serving standard less efficient water fixtures. Simulation of instantaneous water and energy consumption in a typical 2-bath residential unit shows that annual savings for both water and energy can approach 30 percent each when rightly-sized plumbing is coupled with efficient fixtures (Figure 2).

The overriding importance of this project is the verification that reduced pipe sizes provide safe, sustainable and efficient premise plumbing to complement water conservation and promote energy savings in

↓ Select Units ↓

PROJECT NAME : DATE TIME

FIXTURE GROUPS	[A] FIXTURE	[B] ENTER NUMBER OF FIXTURES	[C] PROBABILITY OF USE (%)	[D] ENTER FIXTURE FLOW RATE (GPM)	[E] MAXIMUM RECOMMENDED FIXTURE FLOW RATE (GPM)
Bathroom Fixtures	1 Bathtub (no Shower)	0	1.0	5.5	5.5
	2 Bidet	0	1.0	2.0	2.0
	3 Combination Bath/Shower	0	5.5	5.5	5.5
	4 Faucet, Lavatory	0	2.0	1.5	1.5
	5 Shower, per head (no Bathtub)	0	4.5	2.0	2.0
	6 Water Closet, 1.28 GPF Gravity Tank	0	1.0	3.0	3.0
Kitchen Fixtures	7 Dishwasher	0	0.5	1.3	1.3
	8 Faucet, Kitchen Sink	0	2.0	2.2	2.2
Laundry Room Fixtures	9 Clothes Washer	0	5.5	3.5	3.5
	10 Faucet, Laundry	0	2.0	2.0	2.0
Bar/Prep Fixtures	11 Faucet, Bar Sink	0	2.0	1.5	1.5
Other Fixtures	12 Fixture 1	0	0.0	0.0	6.0
	13 Fixture 2	0	0.0	0.0	6.0
	14 Fixture 3	0	0.0	0.0	6.0

Total Number of Fixtures 0

99th PERCENTILE DEMAND FLOW = 0.00

↑ CLICK BUTTON ↑

Figure 1. Input Template for Water Demand Calculator.

modern buildings. It is expected that results from the new approach of estimating peak water demand will lead to significant water and energy savings without loss of performance in the water delivery system. The WDC has been incorporated into the 2018 Uniform Plumbing Code. The WDC app is available free of charge from IAPMO: <http://www.iapmo.org/Pages/WaterDemandCalculator.aspx>

Researcher Profile: Professor Buchberger's teaching interests include surface water hydrology and reliability-based design. His research interests include mathematical modeling of water demands and water quality in municipal distribution systems; estimating peak water demands in buildings; characterization and control of nonpoint pollutants; water and energy management for sustainable urban environments.

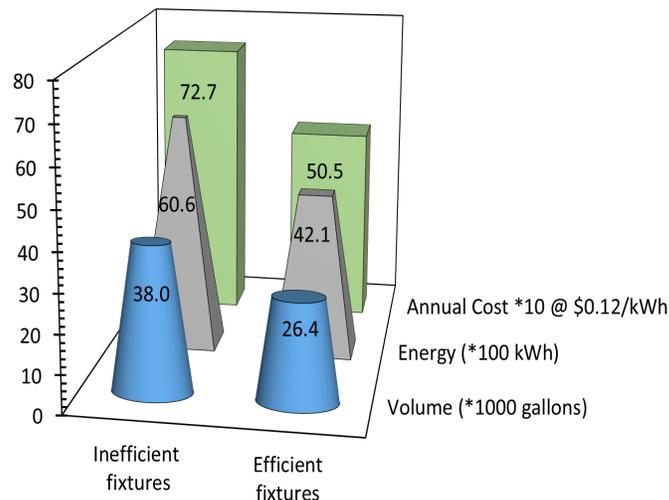


Figure 2. Annual hot water volume, energy consumed and energy cost in a 2-bath home with inefficient and efficient water fixtures.



**Huntington Convention Center
Cleveland, OH**

www.asfpmconference.org

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The Water Management Association of Ohio (WMAO) is the one organization dedicated to all of Ohio's water resources.

VISION: To be recognized statewide as the go-to community for people who manage and safeguard Ohio's water resources.

MISSION: To support Ohio's water resource professionals with essential information, education, and networking opportunities

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