

The Ohio Water Table

A Publication of the Water Management Association of Ohio

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Record Attendance at the WMAO Annual Conference

By Alex Covert, WMAO Conference Planning Committee Chair

The 43rd Annual Water Management Association of Ohio Conference, “Valuing Water: Exploring the interactions between people, markets, and water”, was held November 18 and 19, 2014 in partnership with the Ohio Lake Management Society.

The conference has seen a steady increase in attendance in recent years – this year, breaking the record with 213 attendees over the two-day period. Fifty-two presentations covered a multitude of water resource topics and included such titles as:

- Mind the Gap: The Federal Funding Gap Between Fundamental Research and Fundamental Solutions for Harmful Algal Blooms.
- Nature vs Nurture: What makes for an effective watershed group leader?
- The implications of environmental policy on nutrient outputs in agricultural watersheds.
- Healthy Water Ohio – A Strategy for Water Resource Management

Twenty-one water industry entities supported the conference as sponsors and/or exhibitors...Thank You!



WMAO President, Boris Slogar, presents James Mangus with the Ohio Water Hall of Fame Award.

- * Aqua Doc
- * Aquatic Control
- * BSA Environmental Services
- * Civil & Environmental Consultants
- * Davey Resource Group
- * Diversified Pond Supplies
- * DLZ
- * EMH&T
- * Environmental Remediation Contractor
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- * Fondriest Environmental, Inc.
- * Grays Aquatic Services
- * Gresham Smith & Partners
- * Hull & Associates, Inc.
- * ms consultants, Inc.
- * Muskingum Wtsd. Conservancy District
- * Ohio Water Resources Center
- * Source Molecular Corporation
- * Stantec Consulting
- * TetraTech, Inc.
- * URS Corporation



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Points of Interest:

- Efforts to improve septic systems to mitigate phosphorus loading may not be effective.
- Technical reports offer water quality information for major aquifers.
- \$2,000,000 in funding available for water management projects.

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President's Column

Boris E. Slogar, P.E.

A Rearview Mirror, Some Thank-You's, and a Look Ahead

So another year has come and gone and though I'm told that there are two things in life we can all be certain of – death and taxes – I have fortunately avoided the first of those certainties. As I sit writing this, I am amazed at how quickly 2014 has passed and just how much all of it seems like a blur. It all started with a hard charging winter that took our breath away and here we are right back in winter again.

Beginning with a look backwards: Much has been accomplished this past year. From educational and thought-provoking luncheon seminars to various division conferences and of course the annual conference and meeting in November, we have had many opportunities to congregate, share some ideas, and socialize. Steps were taken to place WMAO on a firm financial footing for the future and work continues in regards to growing WMAO's divisions and offering greater services and educational opportunities for all members.

In the “We Couldn't Have Done it Without You” category: There are many that have served WMAO well during this past year.

WMAO Division Directors put in many extra hours shaping WMAO's future while working towards growing their divisions. Specifically, Rob Kirkbride (Dam Safety), Alicia Silverio (Floodplain Management), Eugene Braig (Lake Management), Mark McCabe (Stormwater Management), Cindy Brookes (Watershed Management/OWPA) and Greg Nageotte (WMAO treasurer) worked tirelessly for all of us. Multiple meetings/brainstorming sessions were held that led to organizational improvements for the better and the recognition that there is much work yet to be done.

The WMAO annual conference committee put on an outstanding conference and this year's conference was chaired by Alex Covert and Kim Shaffer. The committee consisted of Craig Smith, Greg Nageotte, Kari Mackenbach, Scott Jerrome, Scot Hindall, Melissa Menerey, Tim Beck, and Joe Bonnell.



“...like to thank all of our WMAO members for taking an active role in WMAO and supporting its mission!”

Thanks go out to our executive board consisting of Alex Covert (VP), Peter Soltys (Past President), Greg Nageotte (Treasurer), and Stuart Ravary (Secretary) for assisting and guiding the work performed by the division work group noted above. Special regards go to our administrative backbone and that of course is Dana Oleskiewicz. Dana is the engine that keeps WMAO running smoothly.

Most importantly, we would all like to thank all of our WMAO members for taking an active role in WMAO and supporting its mission! Without you, there is no WMAO.

Looking ahead, we will build upon the successes of last year and learn from those opportunities for improvement that we know about. You can count on your leadership team to stay engaged and committed throughout 2015. There is so much to work on in all areas of our profession. Whether it is working towards healthy water and healthy watersheds or effectively managing stormwater, floodplains, and our water resources, WMAO is working hard to be the one resource that brings us all together.

Have a prosperous and memorable 2015!

Aashish Shrestha 2014 Poster Winner

Aashish Shrestha was the winner of the 2014 poster contest, including a \$100 cash award, at the recent WMAO Conference. He graduated with a Master's degree in Civil and Environmental Engineering at Youngstown State University. The title of his poster and the abstract are presented below. Aashish can be contacted at ashrestha03@student.yzu.edu for further information about his project.

"Scenario Analysis for the Impact of Hydraulic Fracturing on Stream Low Flows in Various Climatic Conditions: A Case Study of Muskingum Watershed in Eastern Ohio"

Abstract: The shale gas production in the United States is projected to increase by threefold and cover a significant portion of all natural gas produced by 2035. Since the natural oil and gas production through hydraulic fracking involves significant amount of water withdrawal, increased oil and gas production trend has raised a serious concern about its potential impact on water resources, especially during low flow periods. Most of the decisions during low flow period are based on hydrologic or biologic low flow conditions developed using historical records of climate data without expecting the water withdrawal for hydraulic frackings. This raises a serious question whether the low flow criteria are appropriate for a current situation of hydraulic fracking or not. On the other hand, unanticipated water withdrawal during low flows period pose serious threat for sustainable water supply from water supply reservoir. Therefore, two major objectives of this study are; 1) to analyze the stream low flows, especially when low flows is reinforced due to impending drought period and hydraulic fracking, 2) to analyze the water availability in water supply reservoir of Muskingum watershed in various level of water acquisition scenarios associated with hydraulic fracking and population projection in future. For this, Soil and Water Assessment Tool (SWAT) have been utilized. First, the SWAT model is calibrated and validated using observed streamflows from USGS stations. In the next step, various scenarios including baseline, current and future scenarios are analyzed using SWAT model. Baseline scenario corresponds to the baseline conditions of water availability without hydraulic fracking whereas the current scenario represents the water availability with current status of hydraulic fracking. Similarly, future scenario represents the water availability in immediate future with increased hydraulic fracking. In addition, the study provides the detailed water withdrawal policy and guidelines for water withdrawal during low flow periods.



Aashish Shrestha wins \$100 for best poster at the WMAO conference.

Tyler Gorham 2014 WMAO/WRFO Scholarship Recipient



Tyler Gorham receives \$1,000 WMAO/WRFO scholarship.

By Joe Bonnell, WMAO / WRFO Scholarship Committee Chair

Each year, WMAO awards a scholarship of \$1,000 to an outstanding college student pursuing a career in water resources management. This year we had several exceptional applicants but the selection committee unanimously selected Tyler Gorham as the 2014 WMAO Scholarship awardee. Tyler is a doctoral student focusing on environmental microbiology in the Division of Environmental Health Sciences in the College of Public Health at The Ohio State University. Tyler is currently involved in research related to the impacts of climate change on harmful algal blooms and drinking water quality. Tyler plans to apply his degree to addressing water resource issues in developing countries and to better understanding how water management practices affect water quality and human health. Tyler is also a member of the Buckeye Lake for Tomorrow board of directors and WMAO member. The WMAO Scholarship is available to Ohio residents attending or planning to attend a college or university pursuing a degree in a water resources related field. Go to wmao.org/wmao-scholarship/ for more information.

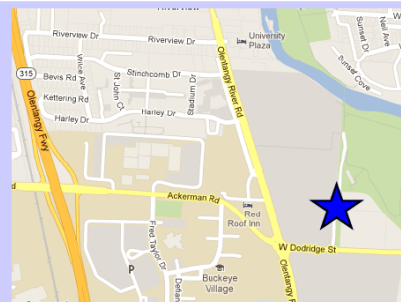
A Water Luncheon Seminar



► Presented by:
The Water Management Association of Ohio
and
The Ohio Water Resources Center

January 28, 2015; 11:30 a.m. - 1:00 p.m.

Wilma H. Schiermeier Olentangy River Wetland Research Park,
The Heffner Building, 352 Dodridge St. Columbus, OH 43202



From St. Rt. 315, exit east onto Ackerman Rd, continue past Olentangy River Rd onto W. Dodridge St, then left into Park driveway.

Project Groundwork and updates towards an integrated watershed solution: the Lick Run Valley Conveyance System

MaryLynn Lodor, Deputy Director, Greater Cincinnati Water Works, Metropolitan Sewer District of Greater Cincinnati

The Metropolitan Sewer District of Greater Cincinnati (MSDGC) is under a Consent Decree to reduce CSOs within their service area by two billion gallons annually before the end of 2018. The Lick Run Wet Weather Strategy is the largest in a suite of sustainable solutions that were submitted to the regulators as an option to achieve compliance with the requirements of the Consent Decree. The sustainable projects, which focus on integrated planning to develop CSO solutions that provide community benefits and help spur economic development in accordance with MSDGC's Communities of the Future framework, are an alternative to the default deep underground tunnel solution in MSDGC's Wet Weather Improvement Program. The alternative solution, including the VCS project, was approved by the regulators in May 2013 and MSDGC is moving forward with implementation.

Located at the confluence of the Lick Run and Mill Creek interceptors, CSO #5 is the single largest overflow in MSDGC's system and without control, discharges approximately 1.5 billion gallons annually to the Mill Creek. This 2,700-acre watershed currently includes approximately 350 miles of sewer lines that drain to a 19.5-foot-diameter combined sewer. During dry weather, wastewater flow from the basin is conveyed to the Mill Creek Wastewater Treatment Plant; however, during wet weather events, stormwater runoff overloads the system and triggers overflows directly into Mill Creek.

Due to the timeline set forth in the Consent Decree and the complexity of design and construction associated with the elements comprising the wet weather strategy for the watershed, the strategic sewer separation and site specific BMPs moved forward in advance of the VCS project. These elements were divided into a number of individual projects taking into account geography, hydraulics, constructability, maintenance of traffic, and cash flow considerations. Some of these projects have completed construction, others are currently under construction, and the remaining projects are at various levels of design.

Please register by January 21, 2014. Late or on-site registrations cost \$5 extra and are not guaranteed a meal. For registered engineers who need Professional Development Hours (PDHs), this presentation offers 1 PDH.

☐ WMAO Member (\$15) ☐ Nonmember (\$18) ☐ Student (\$7) Special meal? _____

Name _____

Organization _____

Address _____

City _____ State _____ Zip _____

Phone _____ Email _____

Please send form and check to: WMAO-Luncheon, 8440 E. Washington St. #206, Chagrin Falls OH 44023.

OR, register online with a credit card at: www.wmao.org

Proceeds from the luncheon benefit the continued operation of WMAO and our scholarships. Sponsorship opportunities are available for those interested in providing extra support. More information on sponsorship is available at www.wmao.org

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 highlights from a recently completed project conducted by Dr. Christopher Spiese, Assistant Professor in the Department of Chemistry and Biochemistry and Bryan Boulanger from Civil Engineering at the Ohio Northern University. If you are interested learning more about our research projects see the Ohio Water Resources Center webpage at wrc.osu.edu.



Figure 1. Student Joanne Berry sampling tile drainage (photo by: Ken Colwell, ONU)

The aim of the project titled “**Rural On-site Waste Treatment as a Source of Nutrients to a Eutrophic Watershed**” was to determine the extent to which residential on-site wastewater treatment in rural watersheds are source of nitrogen, phosphorus, and pathogenic bacteria. Identification of sources of nutrients into Lake Erie tributaries is critical for understanding how to control these loadings and ultimately maintain a long-term oligotrophic status in the Lake.

At six sites across Putnam County, Ohio, tile drainage water was sampled over the course of four months (Figure 1). Caffeine was found at all of the sites with mean \pm standard deviation concentrations ranging from non-detect at the control site to $0.74 \pm 1.1.4$ $\mu\text{g/L}$ in tile drainage effluents from sites having on-site wastewater systems. Because nitrogen is a large component of human waste, there was a significant positive relationship between nitrate and caffeine (Figure 2). Caffeine and total phosphorus on the other hand had a significant negative correlation (Figure 2). The study results are interesting, because the observed caffeine-total phosphorous correlation indicates that septic effluents are not significant contributors to phosphorus loadings within the rural watershed, but may contribute

to nitrogen loadings. Additionally, commonalities in nutrient fingerprints (total and speciated phosphorous and nitrogen) in groundwater and tile drainage highlight the complex relationships for nutrient and water quality management in irrigation drainage waters. Groundwater from a nearby well indicated a mean total phosphorous 0.39 mg P/L . A mean phosphorous tile drain concentration for the entire study was determined to be 0.4 ± 0.07 mg P/L . Taken together, our results indicate that efforts to improve or replace septic systems with an aim toward mitigating phosphorus pollution may be misguided or at least less effective than anticipated.

Principal Investigator:

Dr. Christopher Spiese is an environmental chemist and biogeochemist. His research area is an interdisciplinary program that incorporates chemistry, biology, geology, and limnology, but his main focus is on sulfur and phosphorus. He currently has projects examining the role of marine phytoplankton in the production of methylated sulfur compounds, the permeability of these compounds across cell membranes as well as project aimed at developing new methods for dissolved phosphorus analysis and water quality in the Blanchard River.

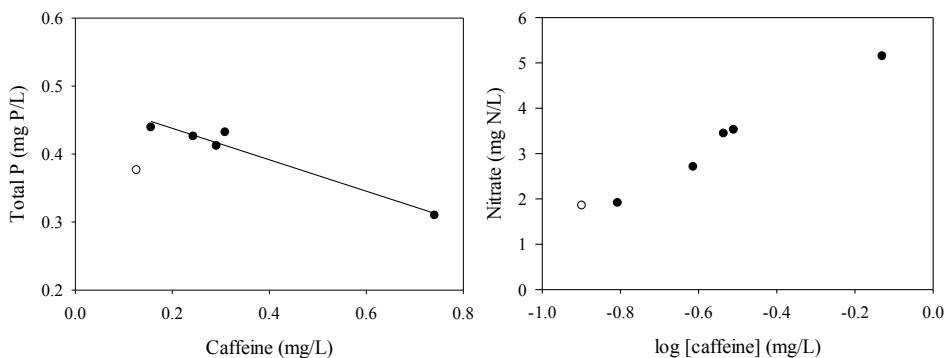


Figure 2. Correlations between caffeine and A) total phosphorus, B) nitrate. Points denote mean of all samples. Correlation coefficients were significant for total phosphorus ($p = 0.001$) and nitrate ($p = 0.0002$).

Identification
of sources of
nutrients to
Lake Erie...

Highlights from the conference include:

- Keynote speaker Dr. G. Dennis Cooke, Professor Emeritus, Kent State University, presented “Water Conflicts.”
- Attendees received a small bag of Belgian dark chocolate coins embossed with the WMAO logo.
- A third concurrent track on the first day was dedicated for the Ohio Lake Management Society’s annual conference.
- Thirteen awards were presented to recipients at the Awards Luncheon:
 - * WMAO Distinguished Service Award – James Hoorman, OSU Extension
 - * WMAO Wayne S. Nichols Award – Dan Mecklenburg, ODNR
 - * WMAO Ohio Water Hall of Fame – James Mangus, USGS-Retired
 - * ODSO Best Maintained Dam Award (Private Dam) – Silver Creek Dam, operated by Battelle Memorial Institute
 - * ODSO Best Maintained Dam Award (Local Public Dam) – Coldwater Wastewater Treatment Dam, operated by Village of Coldwater
 - * ODSO Past-President Award (2013-14) – Rob Kirkbride
 - * WMAO Peter G. Finke Science Day Award (7th-9th grade) – Lauren E. Phillips of Archbishop Alter High School in Kettering, Ohio
 - * WMAO Peter G. Finke Science Day Award (10th-12th grade) – Hannah G. Meller of Pettisville High School in Pettisville, Ohio
 - * Winner of the 2014 WMAO Scholarship – Tyler Gorham, a PhD candidate in Public Health – Environmental Health Science at The Ohio State University
 - * OLMS Innovation in Lake Management Award – Dr. Robert Davic
 - * OLMS Innovation in Lake Management Award – Dr. Elizabeth Buchanan
 - * OLMS Lifetime Achievement Award – Dr. G. Dennis Cooke
 - * OLMS President’s Award – Dr. Robert Carlson
- WMAO President, Boris Slogar, provided an overview on the Association’s successes in 2014.
- WMAO held its first ever “Careers in Water Resources” session in which students were able to interact and discuss careers with various water-related professionals.
- Aashish Shrestha, Youngstown State University, won the award of “Best Poster” with his presentation of “Scenario Analysis for the Impact of Hydraulic Fracturing on Stream Low Flows in Various Climatic Conditions: A Case Study of Muskingum Watershed in Eastern Ohio”

Thirteen awards were presented to recipients at the Awards Luncheon

The conference closed by presenting the 2014 Emmy Award winning documentary film, “Chasing Ice” - the story of one man’s mission to change the tide of history by gathering undeniable evidence of our changing planet.



Thank you to all who attended, presented, and sponsored the WMAO Conference. We hope to see you at next year’s conference on November 17 - 18, 2015!



Save The Date:
The U.S. Algal Toxin
Conference
April 29-30, 2015



Join colleagues from the United States and around the world to discuss the emerging concerns of algal toxins created by harmful algal blooms.



This two day conference will focus on those issues relating to algal toxins facing Utility Managers, Researchers, Consultants, Government Leaders and all Water Professionals involved in Water Treatment, Water Distribution and Watershed Management.

For more information, [contact us](#) or [visit our website](#).

Hosted By: [Akron Global Water Alliance](#) & [Netherlands Water Alliance](#)

Location: [The Student Union at The University of Akron](#)

[Sponsorship Opportunities Available](#)

CALL FOR ABSTRACTS

U.S. Algal Toxin Conference

Hosted by Akron Global Water Alliance (AGWA) and Netherlands Water Alliance

Abstract submission deadline: January 15, 2015

You are invited to participate in the 2015 U.S. Algal Toxin Conference hosted by the Akron Global Water Alliance (AGWA) and the Netherlands Water Alliance. Speakers and participants are anticipated to come from the United States and overseas including the Netherlands. The program will cover such topics as Watershed Management and Operational Techniques; Watershed/Raw Water Sampling and Analysis; Watershed Operational Products; Water Plant Management and Operational Techniques; Water Plant Operational Products; Distribution System Sampling and Analysis; Distribution System Emergency Preparedness; Distribution System Operational Products; Planning Tools & Techniques; Current U.S. Regulations and Legislation; and Research on Treatment Alternatives. To apply to present at this conference, [complete this form](#) and submit it by January 15, 2015.



Premier Stormwater Event in Ohio

May 6-8, 2015. Sandusky, Ohio,
Kalahari Resort and Conference Center

Get more information

Website: www.ohiostormcon.com

Email: hstark@ohioswa.com

- One of the nations largest stormwater conferences with average attendance over 600.

- Over 75 programs with national, state and local speakers.

- Tours

- EnviroCert Certification Review Classes and Exams

- Endless Networking Opportunities

Don't miss out on this event.

Sponsorship and Exhibitor Opportunities still exist.

Ohio EPA Ground Water Quality Technical Reports and Fact Sheets

By Chris Kenah, Geologist 4, Ohio EPA, Division of Drinking and Ground Waters

Since 1973, Ohio EPA has collected raw ground water samples in the Ambient Ground Water Quality Monitoring Program (AGWQMP). The long-term nature of the data makes it ideal for characterizing ground water quality and evaluating trends across the state. Using the AGWQMP results in conjunction with other available information, such as water quality data reported by public water systems, Ohio EPA is developing a series of technical reports and fact sheets to characterize the distribution of selected constituents in ground water. The technical reports provide water quality information for major aquifers, exhibit areas with elevated concentrations, and identify geologic and geochemical controls. This information is useful for water resource planning, evaluating local ground water quality and identifying areas where specific water treatment may be necessary. Parallel fact sheets, written for the general public, present material in a less technical format, address health effects, outline treatment options, and provide links to additional information. Currently, technical reports and fact sheets are available for fluoride, major aquifers, and redox processes. They are available under the publications tab of the Ground Water Quality Characterization Program page at epa.ohio.gov/ddagw/gwqcp.aspx

*...to characterize
the distribution
of selected
constituents in
ground water.*

A technical report and fact sheet on strontium are currently under review. Data analysis on temporal trends in chloride and nitrate is also under way, with the goal of understanding spatial distribution and temporal changes over the last several decades. Please check the web page to follow our progress. Contact Chris Kenah (christopher.kenah@epa.ohio.gov) or Mike Slattery (michael.slattery@epa.ohio.gov) for more information.

Five Star and Urban Waters Restoration Grant Program

2015 Request for Proposals announced November 5, 2014

The U.S. Environmental Protection Agency (EPA), USDA Forest Service (USFS), the US Fish and Wildlife Service (USFWS), the Corporation for National and Community Service, FedEx, Southern Company, Bank of America and PG&E are pleased to solicit applications for the 2015 Five Star/Urban Waters Restoration Program which is managed by the National Fish and Wildlife Foundation (NFWF). The grant program is offered in conjunction with the Urban Waters Federal Partnership which gives priority to projects located in underserved, environmentally overburdened communities.

NFWF anticipates that approximately \$2,000,000 in combined total funding will be available for projects such as: wetlands creation and restoration; green infrastructure and stormwater management; citizen's science and volunteer water monitoring; projects that reduce or eliminate trash from entering waterways; coastal habitat, riparian, urban forest restoration and other water quality protection and restoration projects in local communities.

This RFP closes February 2, 2015. For more information on this RFP go to:

<http://www.nfwf.org/fivestar/Pages/2015RFP.aspx>

*...priority to
projects located
in underserved,
environmentally
overburdened
communities.*

Annual Membership for 2015 to WMAO—ODSO, OFMA, OLMS, OSWA, and OWPA

Please join us again as we fulfill the WMAO mission. Your membership dues make it possible for WMAO and its Divisions to carry out important work protecting Ohio's water resources. Use the form below or renew online.

Membership 2015*

Water Management Association of Ohio



*Use this form to join or renew your WMAO membership, or online at: <http://wmao.org/join-wmao/>

Name: _____ Credentials: _____

Company: _____ Job Title: _____

Address: _____

City: _____ State: _____ Zip: _____ County: _____

Email: _____ Ohio Region (circle): Central NW NE SE SW Statewide

Phone: _____ Mobile Phone: _____

Additional Members and Emails (Organizational or Unlimited): _____

Division Affiliation (check one*):

*Members are in all Divisions. Select a primary, if applicable.

- ☐ None
- ☐ Ohio Dam Safety Organization (ODSO)
- ☐ Ohio Floodplain Management Association (OFMA)
- ☐ Ohio Lake Management Society (OLMS)
- ☐ Ohio Stormwater Association (OSWA)
- ☐ Ohio Watershed Professionals Association (OWPA)

Areas of Interest (check all that apply*):

*For dissemination of WMAO information.

- ☐ Agriculture ☐ Lake management
- ☐ Dam safety ☐ Mineral resource management
- ☐ Drinking water / wastewater ☐ Navigation and recreation
- ☐ Education ☐ Research and data management
- ☐ Floodplain management ☐ Stormwater
- ☐ Ground water ☐ Watersheds

Membership Annual Dues:

Individual	\$ 85
Organizational	\$ 250
Added individuals above 3 members	\$ 80
Unlimited	\$ 950
Citizen	\$ 30
Emeritus	\$ 25
Student	\$ 10

Individual = anyone interested in Ohio's water resources.

Organizational = an incorporated or unincorporated entity interested in Ohio's water resources with up to three (3) individual memberships.

Unlimited = an incorporated or unincorporated entity interested in Ohio's water resources with unlimited individual memberships, advertisement space in WMAO's newsletter, and recognition on the WMAO website.

Citizen = anyone with an interest in Ohio's water resources but not employed in a water-resource field, as a non-voting member with benefits limited to the WMAO newsletters and notification of activities.

Emeritus = any individual who is at least 65 years of age and who has been a member of WMAO for not less than five (5) consecutive years.

Student = any student currently enrolled in an accredited high school, technical school, college or university.

Amount Due:

Member Type: _____

Additional Members (organizational) _____

Ohio Water Education Program* _____

WMAO/WRFO Scholarship Fund* _____

OLMS Dan Kush Education Fund* _____

Total Enclosed: _____

*Donated contributions to OWEP and special Funds are fully deductible under federal income tax law. Membership dues are not tax deductible.

Apply for 2015 membership online at: <http://wmao.org/join-wmao/>

Or by check payable to **WMAO-Membership**; Or by credit card:

Credit card #: _____

Expiration Date: _____ CVV#: _____

Name on card: _____

Email for receipt: _____

Please submit completed registration form and dues to:

Water Management Association of Ohio
8440 E. Washington Street #206
Chagrin Falls, OH 44023

WATER MANAGEMENT ASSOCIATION OF OHIO

8440 E. Washington St. #206
Chagrin Falls, OH 44023

330-466-5631, admin@wmao.org
Dana Oleskiewicz, Administrative Director

www.wmao.org

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

VISION: The Water Management Association of Ohio will be the most effective and respected independent water resources organization in Ohio.

MISSION: The Water Management Association of Ohio promotes the comprehensive understanding, conservation and multifaceted use of Ohio's water resources.

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