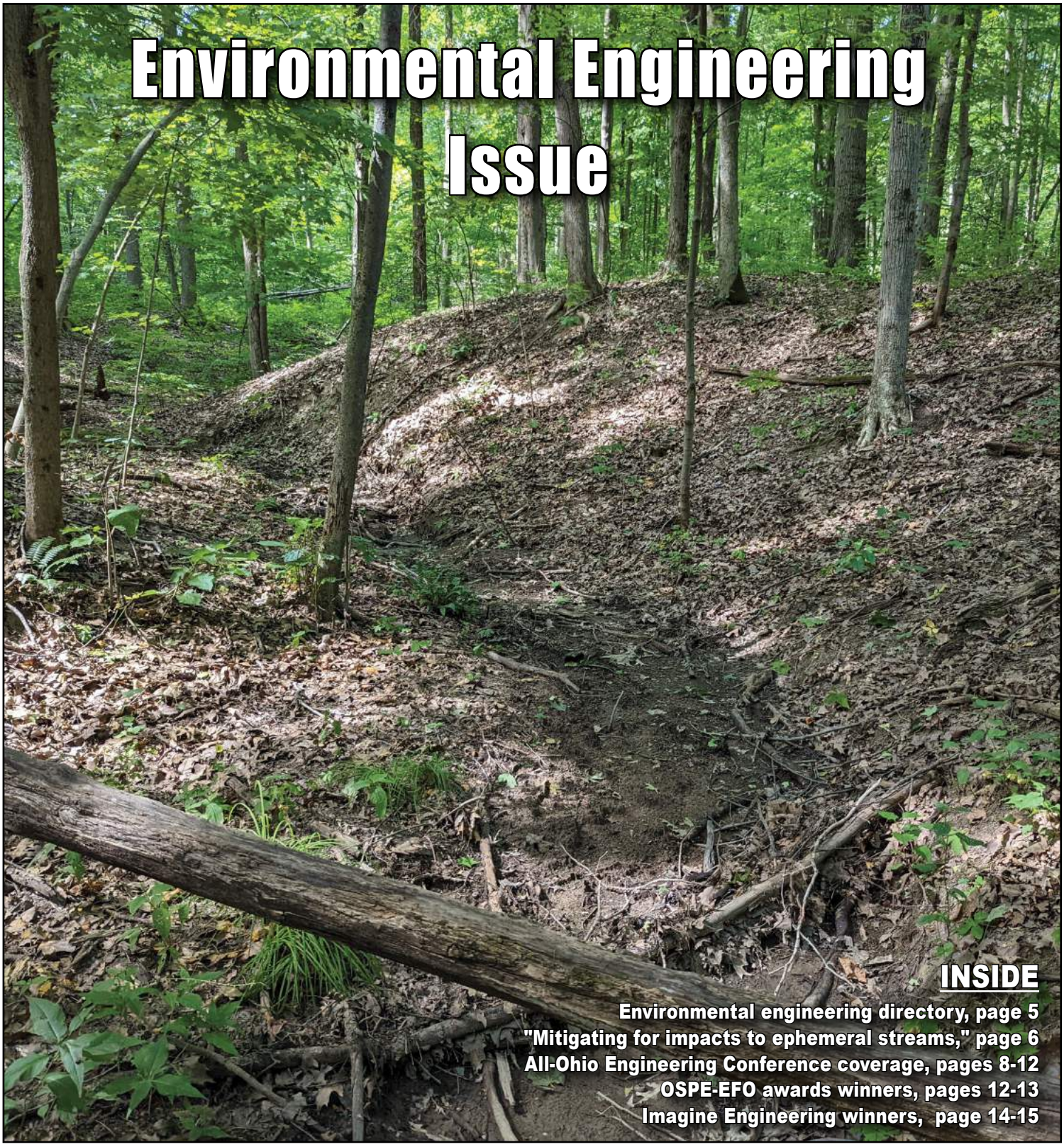
Ohio ENGINEER

Volume 82/Issue 2 | *The Official Publication of the Ohio Society of Professional Engineers* | 2022



Environmental Engineering Issue

INSIDE

THANK YOU, SPONSORS!

The Engineers Foundation of Ohio's top sponsors* for fiscal year 2022:

Gold Sponsors
American Electric Power Foundation
Louis Perry, PE & Joan Perry

Silver Sponsors
Anonymous
L. Steve Day, PE, FNSPE
Dennis Irwin, PhD, PE, FNSPE
Howard Jones, PE, FNSPE
Tina L. Sutermeister, PE, FNSPE
Fred Tito, PE, FNSPE & Jacquie Tito

Major Supporter
Ohio Society of Professional Engineers

Fall CPD Conference
Daniel J. Lauletta, CFP, Skylight Financial Group
Terracon

EFO Benefit Golf Outing
DLZ
ms consultants, inc.
Cornell Robertson, PE, PS, Franklin County Engineer
Greg Ruff/Wells Fargo Advisors
Sands Decker
Ottinger & Associates
Joseph V. Warino, PE, PS, FNSPE

President's Club
Agnes Benedict
Jack Duffy & Associates, Inc.

President's Club (cont'd.)
Randy Keitz, PE
Roger Kolloff, PE
ms consultants, inc.
Owen March, PE
Ron Miller, PE & Leslie Miller
Cornell Robertson, PE, PS, Franklin County Engineer
Trane Cleveland

Sustaining Donors
Patricia Babington
David Dexter, PE, FNSPE
Franklin County Chapter, OSPE
Gatekey Engineering, Inc.
Invotec Engineering
M Engineering
Ohio University
Travis Rhoades, PE
John Robertson, PhD, PE
Walter Roehrs, PE, FNSPE
Richard Smelker, PE
Richard Wand, PE
Rodney Wilson, PE & Candace Wilson
Scott A. Wilson, PE

Scholarships
Auxiliary to the Franklin County Chapter of OSPE
Dayton Chapter, OSPE
Franklin County Chapter, OSPE

**** $200 or more***

NSPE-OH OHIO SOCIETY OF PROFESSIONAL ENGINEERS

OFFICERS

Chett Siefring, PE
President

Travis Rhoades, PE
President-Elect

Kevin Ernst, PE
Past President

Howard Jones, PE, FNSPE
Secretary

Tony Grgas, Jr., PE
Treasurer

Aurea Rivera, PE, PMP, PMI-ACP
Vice President of Member Services

Joseph Warino, PE, PS, FNSPE
Vice President of Legislative & Government Affairs

Rodney Wilson, PE
Vice President of Education

Kevin Ernst, PE
NSPE House of Delegates

Tim Schaffer
Executive Director & Publisher

Holly E. Ross Flanigan
Editor

For more information, contact us at:
Ohio Society of Professional Engineers
400 South Fifth Street, Suite 300
Columbus, Ohio 43215

Voice (614) 223-1144
Members Toll Free (800) 654-9481
E-mail OSPE@OhioEngineer.com
Website www.OhioEngineer.com

The Ohio Engineer (ISSN 0194-9276) is published quarterly by the Ohio Society of Professional Engineers. **Postmaster:** Send address changes to Ohio Engineer, 400 South Fifth Street, Suite 300, Columbus, OH 43215. Annual subscription rate $25 (included in OSPE membership dues). The Ohio Society of Professional Engineers is not responsible for the authenticity or accuracy of information provided herein. Published opinions and statements do not necessarily reflect the opinion of OSPE. Products and services advertised, other than those offered as OSPE member benefits, do not carry the endorsement of OSPE. Publisher reserves the right to decline any advertisement that is deemed inappropriate. The sales representative for Ohio Engineer does not have final authority to determine whether an advertisement may be placed in Ohio Engineer. The ultimate determination as to the appropriateness of any advertisement is subject to the discretion of the OSPE Public Relations Committee and the publisher acting in accordance with the guidelines established by OSPE.

LEADERSHIP VIEWS

by Rodney Wilson, PE, President, Engineers Foundation of Ohio

Tax-deductible donations to EFO support a better Ohio

I feel we have something important in common. I believe in fostering the development and growth of individuals by advocating for their education. I believe that doing so improves their lives and supports the communities in which they interact and live. *What about you?*

In fact, I serve with the Engineers Foundation of Ohio – and I donate to EFO – because *I want to help EFO* have a positive impact on students, professionals, the engineering community and Ohio. EFO carries out its mission – to promote engineering education in Ohio – all the way from elementary school through college and into professional life! In fact, our programs are the incremental building blocks that individuals need to effectively progress in their engineering educations.

Some of EFO's youngest program participants may someday grow up to become professional engineers! But *everyone* who is exposed to an EFO program receives the benefits of STEM-oriented education – and especially engineering. In innumerable ways, EFO programs, which are supported by Ohio Society of Professional Engineers' members, are instrumental to the betterment of communities and Ohio.

EFO programs are largely funded by tax-deductible donations. If you agree that EFO provides invaluable services to individuals and Ohio, I invite you to make a gift to our honorable Foundation.

Why does Ohio need EFO?

The recent passage of the Infrastructure Investment and Jobs Act (IIJA) will create wonderful opportunities for the engineering profession. All phases of traditional engineering will be involved – project planning, design, manufacturing and construction. Research and, of course, long-term maintenance will also be key phases of engineering work associated with the implementation of the IIJA. This bill uses an expanded definition of infrastructure, so other opportunities may be open for engineers. Any engineering work performed in Ohio must protect the public health, safety and welfare and, therefore, it will require (according to the Ohio Administrative Code) the "personal professional knowledge and direct supervisory control and responsibility" of professional engineers who will seal their work. Thus, the great need and responsibility of the PE is inherently established.

The IIJA is a *huge investment* for the U.S. and Ohio and – like many other bills passed by Congress – it effectively demonstrates the critical need for developing the next generation of professional engineers. This speaks directly to the importance of supporting EFO and its quality engineering education programs.

Why does EFO need your support?

To support engineering education at every stage, EFO is dependent on the generosity of individuals and corporations that donate to its General Fund, Scholarship Fund, and Ohio Engineering Education Endowment (OEEE) Fund, which is used to support all programs.

Starting in the second grade, EFO offers the Imagine Engineering program. The associated coloring contest asks the students to demonstrate what they learned about engineering through this fantastic program. The money to operate Imagine Engineering is paid entirely out of the EFO General Fund. Imagine

See "Donate for a Better Ohio," page 3

On the cover:

An ephemeral stream in Ashtabula County near the Grand River. Ephemeral streams do not flow constantly; they flow for only short durations during and after precipitation events or snow melt. Ohio R.C. Chapter 6111 was recently changed to address how impacts to ephemeral streams may be mitigated in Ohio. ***See feature article, page 6, for details on how to determine the amount of mitigation required.*** *Photo credit: Greg Snowden, MS, PWS, CERP.*

Governors DeWine & Beshear revamp plans to shrink the Brent Spence Corridor

by Ohio Department of Transportation & Kentucky Transportation Cabinet

Ohio Governor Mike DeWine and Kentucky Governor Andy Beshear revealed in mid-July updated bridge maps detailing new lane configurations and revamped plans to deliver the Brent Spence Bridge Corridor Project with fewer property impacts.

"It has been important from the beginning to make sure we're meeting the needs of today and tomorrow while also being mindful about the impacts this project has on surrounding properties," said Governor DeWine.

"Our teams have gone to great lengths to shrink property impacts while still delivering a solid solution to the traffic congestion issues in the region," said Governor Beshear.

The passage of the Bipartisan Infrastructure Law earlier this year provided a once-in-a-lifetime funding opportunity to forge ahead on the Brent Spence Bridge Corridor project. The Ohio Department of Transportation (ODOT) and Kentucky Transportation Cabinet (KYTC) began a thorough review of former plans for a second bridge, as well as improvements to the entire eight-mile corridor between the Western Hills Viaduct in Ohio and Dixie Highway in Kentucky.

The revised plans for the new companion bridge show a dramatically reduced footprint. In 2012, the Federal Highway Administration (FHWA) approved a plan for a new companion bridge to the west of the existing Brent Spence Bridge that will address capacity and mobility issues that have plagued interstate traffic using I-71/75 to cross the Ohio River between Ohio and Kentucky.

Based on significant community engagement, as well as a thorough technical analysis, the footprint of the new bridge has been significantly reduced from the alternative approved in 2012. Initial plans included two 14-foot shoulders on each deck of the new bridge and expanded shoulder widths on the existing bridge. The new bridge was planned to cover nearly 25 acres and span nearly 150 feet in width. Revised plans show the new bridge at almost half the size of the 2012 footprint – covering approximately 14 acres and 84 feet in width. Updated maps show widened emergency shoulders on the existing Brent Spence Bridge to safely stow stalled vehicles, and 12-foot shoulders are provided on the new companion bridge. Additionally, interstate and local traffic are separated – the new companion structure will carry I-71/75 traffic; local traffic will use the existing Brent Spence Bridge.

"We felt good about where we were a decade ago because that solution provided additional capacity that reduces congestion and improves travel throughout the corridor," said ODOT Director Jack Marchbanks. "We feel even better about this revision because it dramatically reduces the footprint of the new bridge and completely separates interstate and local traffic."

Save one commercial property, some railroad-owned land, and the negotiation of two utility owned properties, all parcels needed for the project have been acquired on the Ohio side of the project.

"For decades, the Kentucky Transportation Cabinet has completed ongoing maintenance work to ensure the safety and long-term viability of the Brent Spence Bridge," KYTC Secretary Jim Gray said. "The Brent Spence plays a critical role in the solution being put forward and we are excited that our partners in Covington and other local municipalities in Kentucky have voiced their support for our current plan."

In Kentucky, right of way activities have been divided into two categories – impacts north of 12th Street and impacts south of 12th Street. In both sections, the number of impacted parcels was reduced significantly following the 2022 plan revisions. In the southern portion, there are 38 impacted properties -- one of which is a residential relocation. All property owners in the area have been contacted. Plans in the northern section are under review.

While bridge construction tends to be the public focus of the project, the bridge project only accounts for approximately one-third of the corridor project. A new website, **https://brentspencebridgecorridor.com/**, will provide information about the full corridor and to keep the public up to date on current planning and progress. provides detailed information on interstate plans in Ohio, Kentucky, and both river crossings. Those interested in receiving regular project updates are encouraged to sign up for regular email updates to receive information on project status.

The project team is currently working on a second federal grant application and will continue to work with project partners on refining current plans, which call for breaking ground by the fall of 2023.

Modern truss bridge model

From "Donate for a Better Ohio," page 1

Engineering is further supported by the efforts of OSPE chapter volunteers who explain and demonstrate engineering to the second-grade students.

I was so happy to meet some of this year's Imagine Engineering coloring contest winners at our annual Awards Luncheon in Columbus this past June. They were so proud! They should be because their drawings of engineering work were amazing.

For middle school students, EFO sponsors Ohio MATHCOUNTS – an exciting math competition. These sixth, seventh and eighth-grade kids are eager to compete at this age and enjoy friendly competition to "show their stuff." They can progress from regional competitions to the state level and, ultimately, the national finals. While program registration fees fund student participation in MATHCOUNTS, the EFO General Fund pays for essential staff support in helping run the Ohio program. This program is also supported by many volunteers. MATHCOUNTS, co-founded by the National Society of Professional Engineers in 1983, improves students' problem-solving skills and builds confidence in their thinking abilities. These qualities foster young minds and may attract them into engineering.

As president of EFO, I had the privilege of participating in the "Ohio MATHCOUNTS Celebration of Achievement," at which Ohio's top six mathletes and their coaches were recognized. And in May, at the national MATHCOUNTS finals in Washington, DC, Ohio eighth grader Jiahe Liu of Beachwood Middle School won the written competition! In addition, the Ohio team placed 19th out of 56 teams, including teams from the 50 U.S. states, five territories and the District of Columbia. Like the Imagine kids, I met some of the Ohio MATHCOUNTS students at our Awards Lunch in June. It was great to see their enthusiasm for math, and I remain in awe of their remarkable minds.

The next engineering education building block that EFO provides is for high school students. Through the General Fund, EFO publishes "Engineering Your Career," a pamphlet and online resource used by guidance counselors, educators, parents/guardians and students to help students decide if a career in engineering is right for them.

The remaining two EFO building blocks are the scholarship program for high school seniors and the Engineers Leadership Institute program for practicing engineers.

There are numerous scholarships available to students entering an ABET-accredited engineering curriculum. Many EFO scholarships were started by engineers or surviving families of engineers. All require an application from the student and minimum qualifications have been established. EFO scholarships continue to exist thanks to generous donors who want to help promising students attain their engineering educations. Anyone can support the scholarship program through donations to the Scholarship Fund or by establishing a legacy bequest.

The Engineers Leadership Institute was created to provide leadership and management training to upwardly-mobile engineers. The goal is to give our engineers the competitive edge they need to elevate themselves and their businesses. This program requires a registration fee to attend but the program would not be available without additional financial support from EFO.

How can you support EFO?

If you are, as I am, inspired to support EFO, please consider making a financial contribution. EFO is a tax-exempt nonprofit organization under Internal Revenue Code section 501(c)(3). Your contribution will be tax-deductible to the fullest extent provided by law. Please contact your tax advisor for further information.

Send your donation to the Engineers Foundation of Ohio, 400 S. Fifth Street, Suite 300, Columbus, Ohio 43215. (Make it a tribute/memorial gift by providing the name of the person you wish to honor and a name and address for a gift notification.) Or contribute online by clicking the "Donate" button at the bottom of the www.OhioEngineer.com homepage.

EFO can also help you set up a legacy bequest if that's your wish. This is a tremendous opportunity to support the future, and EFO would be most grateful for your forward thinking. Please contact us at 614-223-1177 or efo@ohioengineer.com for assistance.

National Society of Professional Engineers members may make a voluntary contribution to EFO when they renew their dues. Look for the EFO dues check-offs supporting the EFO General Fund and EFO Scholarship Fund on your NSPE dues renewal.

It is important for each of us to donate our time and resources to this outstanding organization.

After all, what is more noble than fostering the growth of Ohio students, Ohio engineers and their communities?

Environmental Engineering Directory

A box indicates that the firm is an ***Ohio*ENGINEER** *advertiser while an "M" indicates firm has OSPE members on staff.*

ACI Plastics – *M*
Mark Boos, PE
2945 Davison Road
Flint, Michigan 48506
810-767-3800
mboos@aciplastics.com
www.aciplastics.com

Civil & Environmental Consultants, Inc. – *M*
Dustin Doherty, PE
250 W. Old Wilson Bridge Road, Suite 250
Worthington, Ohio 43085
614-540-6633
ddoherty@cecinc.com
www.cecinc.com

Coyle SWPPP Professionals – *M*
David Coyle, PE
8366 Princeton Glendale Rd., Suite B4
West Chester, Ohio 45069
513-942-2333
dwalton@coyleswppp.com
www.coyleswppp.com

Henkel of America – *M*
LD Pierce, PE
10487 Township Road 109
Van Buren, Ohio 45889
419-306-6170
ldpierce@piercehaven.com
www.henkel.com

ms consultants, inc. – *M*
Tom Mosure, PE
2221 Schrock Road
Columbus Ohio 43229-1547
614-898-7100
ebusch@msconsultants.com
(Emily Busch)
https://www.msconsultants.com/

ms consultants is a multidiscipline engineering, architecture, and planning firm for public and private clients. Founded in 1963, ms is now in its third generation of family ownership. ms provides local and national expertise from its 11 offices within Indiana, North Carolina, Ohio, Pennsylvania, South Carolina, and West Virginia.

Mote & Associates, Inc. – *M*
Jerry McClannan, PE
214 West Fourth Street
Greenville, Ohio 45331
937-548-7511
jmcclannan@moteassociates.com
www.moteassociates.com

Ohio EPA, DAPC – *M*
Michael Hopkins, PE
50 West Town Street, Suite 700
Columbus, Ohio 43215
614-644-3611
www.epa.ohio.gov
mike.hopkins@epa.ohio.gov

Osborn Engineering – *M*
Steve Koch, MBA, PE
130 East Chestnut Avenue, Suite 401
Columbus, Ohio 43212
614-325-2109
skoch@osborn-eng.com
www.osborn-eng.com

Rodney Wilson, PE – *M*
1640 Brightwood Road, SE
New Philadelphia, Ohio 44663
330-339-3973
rodcan@roadrunner.com

Purdue University – *M*
Keith Hood, PE
9624 Wolf River Place
Fort Wayne, Indiana 46804-6584
260-432-2902
knhood@aol.com

Rana Energy Consulting, LLC – *M*
Rajendrasinh Rana, PE
965988 Roundstone Place
Dublin, Ohio 43016
614-600-9860
raj.d.rana@gmail.com

S&ME, Inc. – *M*
Nathan Abele, PE
6190 Enterprise Court
Dublin, Ohio 43016
614-793-2226
nabele@smeinc.com
https://www.smeinc.com/

SSOE Group – *M*
Vince DiPofi, PE
1001 Madison Avenue
Toledo, Ohio 43604
419-255-3830
hlee@ssoe.com (Hannah Lee)
www.ssoe.com

As an internationally ranked architecture and engineering firm, SSOE is known for delivering unparalleled client value that advances the AEC industry. They have been named a “Great Workplace” (Great Place to Work®) and one of the “Best AEC Firms to Work For” (BD+C). Over the company’s 70-year history, it has earned a reputation for providing quality project solutions to high-tech and general manufacturing clients in the semiconductor, automotive, battery, food, chemical, and glass industries.

Terracon Consultants, Inc. – *M*
Yogesh Rege, PE
304-951-7874
yogesh.rege@terracon.com

Terracon is an employee-owned multidiscipline consulting firm comprised of more than 5,000 curious minds focused on solving engineering and technical challenges from more than 175 locations nationwide. Our talented employee-owners provide on-time and real-time data driven insights to create an unmatched client experience that spans the lifecycle of any project, any size, anywhere. Start to explore with us by visiting terracon.com.

TTL Associates – *M*
Robert Ruse, PhD, PE
1915 North 12th Street
Toledo, Ohio 43604
419-214-5050
tpedro@ttlassoc.com
(Timothy Pedro)
www.ttlassoc.com

Established in 1927, TTL Associates provides environmental & geotechnical engineering along with testing / inspection services. Our markets include federal, state & local government, commercial , industrial, energy and brownfield clients. TTL is a verified SDVOSB, an Ohio EDGE firm and a certified Veteran Business Enterprise. We are pleased to support the Ohio Professional Engineers.

Westlake Science & Technology – *M*
Alan Olson, PE, F.NSPE
2917 North Bay Drive
Westlake, Ohio 44145
440-570-1345
alan.oh.44145@gmail.com
www.westlakescience.com

by Vince Messerly, PE, President, Stream and Wetlands Foundation, Lancaster, Ohio

Mitigating for impacts to ephemeral streams

On April 6, 2022, the 134th Ohio General Assembly passed House Bill 175. The legislation was signed by Governor DeWine on April 21 and went into effect on July 21, 2022. The law updates sections 3745.114, 5709.09, 6111.01 and 6111.31 of the Ohio Revised Code ("ORC") and establishes sections 6111.011, 6111.311 through 6111.316. The law's text maintains Ohio EPA's ability to protect ephemeral streams and aligns Ohio EPA's regulatory authority with federal jurisdiction (Waters of the United States or WOTUS). It helps ensure that Ohio's ephemeral streams are not used as a dumping ground for debris and waste and strikes a balance between protecting Ohio's waterways and providing consistent state regulations to support economic development. The changes to the ORC will provide needed clarity for the regulated business community while ensuring the continued protection of water quality.

The legislation incorporated several provisions that revised various aspects of Ohio law focused on wetland and stream regulations and compensatory mitigation generally required under Sections 404 and 401 of the Federal Clean Water Act and Ohio's isolated wetland law (ORC 6111). These updates include the addition of criteria by which Ohio state agencies may participate on the Ohio Interagency Review Team, requirements for the Ohio EPA to review and adopt wetland and stream mitigation standards within 24-months of the effective date of the legislation, and the establishment of a property tax exemption for land owned by 501(c)(3) non-profit entities organized specifically for conservation purposes.

However, arguably the most important aspects of the legislation are updates made to the definition of waters of the state. Ohio law now excludes those ephemeral stream features that are not federally jurisdictional, as determined by the U.S. Army Corps of Engineers. Notably, wetland protections were not affected by this legislation; ORC still provides that ephemeral features that meet the definition of wetlands (as per the *1987 Corps of Engineers Wetlands Delineation Manual* and applicable regional supplements) are still regulated as waters of the state.

Temporary impacts to ephemeral streams

If the impacts to ephemeral stream are temporary, the permit applicant shall do the following as per 6111.313(2):

(a) Restore any ephemeral feature that is a water of the state that is impacted upon completion of the temporary impact;

(b) Restore the flow regime to that of the pre-impact ephemeral flow regime or better;

(c) Restore the physical integrity of the ephemeral feature that is a water of the state to its pre-impact or better condition;

(d) Provide at least three high resolution color photographs taken at the restored area, including one facing upstream, one facing downstream, and a closeup that clearly depicts the substrate composition and size for each restored ephemeral feature that is a water of the state. Photographs shall accurately depict the quality of the ephemeral feature that is a water of the state and shall not include excessive cover that would prevent the observation of substrates, such as leaf litter, snow, or ice.

(e) Continue to conduct monitoring or implement additional measures to meet performance standards if the restoration areas are not meeting restoration performance criteria within two years following the completion of restoration activities.

Permanent impacts to ephemeral streams

Mitigation requirements for permanent unavoidable impacts to federally jurisdictional ephemeral streams were also updated by the legislation. If authorized impacts to ephemeral streams exceed 3/100ths of an acre of streambed (equivalent to 1,307 square feet), the director may require the applicant to implement one of the following to offset the impacts (please see ORC sections 6111.311 through 6111.314 for more details):

(a) Provide mitigation by constructing an equivalent area of channel at a one-to-one ratio using the required area of mitigation (A_{MIT}) or site-specific measurements for the ephemeral feature[1] that is a water of the state being impacted to provide a geomorphically stable feature within the impacted eight-digit hydrologic unit watershed.

(b) Provide bioretention on the project site in accordance with the *Rainwater and Land Development Manual* utilized by the Ohio EPA, using the calculated A_{MIT} or using site-specific measurements. Performance and monitoring of performance shall be no more than normally required for a bioretention structure.

(c) Provide increased volume and surface area to the water quality volume (W_{QV}) using the required volume of mitigation (V_{MIT}) or site-specific measurements. The W_{QV} shall be increased by the required V_{MIT} without increasing the maximum W_{QV} discharge. Drawdown times may be increased proportionally. The additional required surface area may be in the form of a wetland shelf as part of a wet extended detention basin sized using the rainwater and land development manual. Where no onsite stormwater detention is planned, surface water storage volume with slow discharge may be provided using the required volume of mitigation as the temporary storage volume. When mitigation will be conducted using storage practices, performance and monitoring of performance shall be no more than normally required for a particular storage structure.

(d) Provide equivalent area of channel at a one-to-one ratio using the required A_{MIT} or site-specific measurements for streambed area calculations by purchasing credits at an approved wetland mitigation bank or in-lieu fee mitigation program for the ephemeral feature that is a water of the state being impacted within the impacted eight-digit hydrologic unit watershed. If there are no mitigation bank credits or in-lieu fee

mitigation credits within the mitigation bank service area that includes the impacted eight-digit hydrologic unit watershed, credits may be purchased from another provider in the state. When mitigation will occur at an approved stream mitigation bank, through an in-lieu fee mitigation program, or through a payment to the Department of Natural Resources, the amount purchased shall be acquired based on the acreage of streambed impacted (valley length times the bankfull width) and proof of acquisition shall be sent to the director of environmental protection before an impact may occur.

(e) Provide equivalent area of channel at a one-to-one ratio using the required A_{MIT} or site-specific streambed measurements for area calculations by contributing funds to the Department of Natural Resources for the purpose of stream improvement activities to address acid mine drainage or other water quality impacts. This mitigation may occur outside of the eight-digit hydrologic unit watershed where the impacts will occur.

Applicable formulas

- DA = Drainage Area (acres)
- L_V = Valley Length (ft.)
- W_S = Width of stream (ft.)
- A_{IMP} = Area of Impact (ft.2) = W_S x L_V
- W_{BKF} = 14.7 x (DA/640)0.38
- W_{SW} = Width of Streamway (ft.) = 147 x $(DA/640)^{0.38}$
- A_{SW} = Area of Streamway (ft.2) = W_{SW} x L_V
- A_{MIT} = Area of Mitigation = $A_{SW}/2$ for streams with slope less than or equal to 2%
- A_{MIT} = Area of Mitigation = $A_{SW}/5$ for streams with slope greater than 2% and up to 4%
- A_{MIT} = Area of Mitigation = $A_{SW}/8$ for stream with slope greater than 4%
- V_{MIT} = Volume of Mitigation (ft.3) = A_{MIT} x 1-ft.

The streamway width or "W_{SW}" is the frequently flooded area adjacent to the stream of interest for the analysis of mitigation requirements and is based upon the concept of the streamway (Ward and Trimble, 2004; ODNR, 2006; Ward et al., 2008). The bankfull width equation is derived from relationships for eastern U.S. streams (Dunne and Leopold, 1978) and data from Ohio streams (Sherwood and Huitger, 2005) as modified by the Ohio Department of Natural Resources, Division of Soil and Water Conservation. Calculated bankfull widths may be used in place of site-specific bankfull width measurements to standardize and simplify the calculation (see References).

Ohio EPA has developed a guidance document to aid applicants that have proposed impacts to ephemeral streams in applications for Section 401 Water Quality Certifications. The guidance document can be found at https://epa.ohio.gov/static/Portals/35/401/MitOptions-EphemeralStreamImpacts.pdf.

Example calculation for area of mitigation (A_{MIT})

A proposed project contains a portion of an ephemeral stream that is 430-feet long with a stream width of 4-feet. This channel was identified as a federally jurisdictional ephemeral stream or WOTUS. It has been determined that impacts to the ephemeral stream cannot be avoided and the stream will be permanently impacted. This ephemeral stream has a slope of 2.3 percent and a drainage area of 18-acres.

Mitigation calculations:

- L_V = 430 feet
- W_S = 4.0 feet
- W_{SW} = 147 x $(18/640)^{0.38}$ = 37.8 feet
- A_{IMP} = 4.0 ft. x 430 ft. = 1,720 ft.^{2} = 0.039 acres (greater than 0.03 acres, therefore mitigation is required)
- A_{SW} = W_{SW} x L_V = 37.8 x 430 = 16,254 ft.^{2}
- Slope = 2.3%, therefore for this example A_{MIT} = A_{SW} divided by 5
- A_{MIT} = $A_{SW}/5$ = 16,254 ft.^{2}/5 = 3,251 ft.^{2} = 0.075 acres

The applicant may complete either options (a), (b), (c), (d), or (e) to fulfill the required compensatory mitigation (A_{MIT}) of 0.074 acres (3,223 ft.^{2}) for the proposed impact.

Ohio EPA contact information

For more information regarding stormwater BMP design or mitigation options (a), (b), or (c), contact Jason Fyffe at Jason.Fyffe@epa.ohio.gov or 614-265-6685.

For more information regarding 401 Water Quality Certifications or mitigation options (d) and (e), contact Anna Kamnyev at Anna.Kamnyev@epa.ohio.gov or 614-644-2020.

About the author

Vince Messerly, PE, has more than 30-years of experience in the environmental engineering field and has served as the president of the Stream + Wetlands Foundation (S+W) since 2002. Vince, an NSPE-OH member, is a recognized industry expert in issues related to permitting and mitigating impacts to Waters of the United States (WOTUS) in the state of Ohio. Vince actively participates in numerous associations, often providing valuable insight to regulatory agencies and members of state and national legislatures as they work to develop environmental policies.

Since their establishment in 1992, S+W, a non-profit company based in Lancaster, Ohio, has been an innovative leader in wetland and stream habitat restoration. Their work is funded primarily through payments received from permit applicants who are required to provide compensatory mitigation for unavoidable impacts to aquatic resources. Since their inception, they have provided compensatory mitigation for nearly 1,600 permit applicants, that have resulted in an estimated $15 billion in infrastructure and economic development.

References

Ward, A.D., and S.W. Trimble (2004). Environmental Hydrology, Second Edition, Lewis Publishers, Boca Raton, FL, 462 pp.

ODNR, 2018 Rainwater and Land Development. https://epa.ohio.gov/divisions-and-offices/surface-water/guides-manuals/rainwaterand-land-development

Ward, A.D., J.L. D'Ambrosio, J.D. Witter, A.D. Jayakaran, and D. Mecklenburg (2008). Floodplains and setbacks. Agriculture and Natural Resources Fact Sheet AEX-455-02. The Ohio State University Extension, Columbus, OH. 7 pp.

Dunne, Thomas and Luna Leopold (1978). Water and Environmental Planning, W.H. Freeman and Company, 818 pp.

Sherwood, J.M., and Huitger, C.A., 2005, Bankfull Characteristics of Ohio Streams and Their Relation to Peak Stream-flows: U.S. Geological survey Scientific Investigation Report 2005-5153, 38 pp.

Rosgen, David, Applied River Morphology, 1996, Wildland Hydrology, Pagosa Springs, CO.

2022 OSPE Conference features in-person & virtual elements

ALL-OHIO ENGINEERING CONFERENCE
JUNE 9-11, 2022

The **2022 All-Ohio Engineering Conference**, held June 9-11, included both in-person and virtual elements to satisfy the social and continuing education needs of OSPE's membership.

The Conference theme was "**Onward & Upward**," which speaks to the ideal of forging ahead while overcoming obstacles – in this case, post-pandemic challenges, including impacts on the workforce. This theme also alludes to reaching for one's goals, and in doing so, acquiring new skills, new methods and new resources, and sometimes seeking new opportunities. (Metaphorically, and often literally, where there is no road forward, PEs are known to make one.) The 2022 Conference – largely via several of its seminars – addressed the "Onward & Upward" theme.

OSPE President **Chett Siefring, PE**, hosted the Conference and Professional Education Committee Chairman **Dennis Irwin, PhD, PE, FNSPE**, led the effort in finding and approving seminars. OSPE's leadership team is grateful to the 14 speakers and 19 generous sponsors and advertisers for making the three-day event successful.

For the first time since the onset of the COVID pandemic, the All-Ohio Engineering Conference included in-person programs on Thursday. Members attended the OSPE and EFO annual meetings, and NSPE Treasurer Robert H. "Bob" Price, PE, FNSPE, installed the officers of both organizations at the Presidents' Party that evening. Also, the reinstitution of the Awards Luncheon allowed nominees to celebrate their recognition and OSPE and EFO awards winners to make acceptance speeches before a gathering of members and families. EFO scholarship winners and student program winners were also recognized for their achievements.

The 12 virtual CPD (continuing professional development) hours – presented over two days as high-quality, educational TV programming with commercial breaks featuring sponsor recognition – featured timely topics with speakers who are experts in their respective fields.

On Friday, PEs learned how the pandemic impacted the AEC industry's recruitment and retention of a diverse workforce and policies that will help mitigate challenges. In addition, participants learned about multi-criteria decision-making methods, funding for Ohio's electric vehicle charging infrastructure, requirements for Ohio engineering firm licensure (ethics seminar), landslide stabilization with micropiles and drilled shafts, and phosphorous removal in wastewater treatment plants. On Saturday, the participants learned about Intel's investment in Ohio and developments in advanced air mobility, space and electronic propulsion, Ohio University's carbon-neutrality goal, teaching engineering ethics to college students (ethics seminar), how Ohio is becoming a leader in the advancement of UAS/drone technology, water and wastewater funding opportunities through the Infrastructure Investment and Jobs Act, and application of the Ohio Ethics Law (ethics seminar).

PE participants shared feedback for the 2022 Conference noting the variety of quality speakers and presentations, the format, the organization and time management, and the convenience.

Participants remarked:

- "Thanks for another great conference."
- "Well run and good speakers/presentations. Good diversity of topics."
- "Ethics talks were exceptional. Best I have heard due to the relevant examples."
- "The virtual aspect is appealing to eliminate travel time and cost. Well rounded contrast of different subject matter tends to better maintain my interest and attention and is appropriate for multi-discipline engineering field."
- "One of the best conferences so far. Great job. Love to Zoom. Some of the best presentations yet!"
- "Good timing. Moved along well."
- "I liked the in-person gathering."
- "Interesting to hear about EV and infrastructure plans and funding approach."
- "The topics were great! Also liked hearing from the Ohio Board."
- "Great presentation and topics. Zoom/on-line is extremely easy from my study."

Thank you to the members of OSPE's leadership team and the speakers and sponsors for producing a successful 2022 All-Ohio Engineering Conference.

In the kick-off seminar, "Diversity Leads to Better Engineering," Zweig Group provided data about the state and future of engineering design, recruitment and retention. Engineers learned about the AEC industry's path towards diversity, how the pandemic impacted recruitment and retention, and how employers are mitigating recruitment/retention challenges. Zweig Group speakers included, top to bottom, Managing Partner Jamie Claire Kiser, JD, MBA (founder of ElevateHER), Research Director Christy Zweig Niehues, MBA, and President & CEO Chad Clinehens, PE, MBA.

< Engineers who select or prioritize project alternatives must consider multiple, conflicting objectives. Their decision must accurately reflect the priorities of stakeholders. In a session titled "When Choosing is Difficult & a Spreadsheet is Not Enough, MCDA Consulting Founder Gina Beim, PE, MS, MBA, talked about multi-criteria decision-making methods and applications that make selecting and prioritizing project alternatives manageable and transparent. Because it takes uncertainty into account, multi-criteria decision-making may prove especially useful in challenging times.

< In "EV 101," DriveOhio Communications & Policy Director Luke Stedke, MPA, discussed the background, funding details, and program guidance for the electric vehicle charging infrastructure program established in the Bipartisan Infrastructure Law (BIL) of 2021. Ohio's National Electric Vehicle Infrastructure (NEVI) formula allotment will provide $140 million over five years for DC "fast chargers" along designated Alternative Fuel Corridors.

JobsOhio director Glenn Richardson, MBA, MME, discussed "Intel, Flying Cars & the Electrification of Everything" at the 2022 All-Ohio Engineering Conference. Richardson taught conference participants about the economic growth drivers in advanced manufacturing and aerospace sectors. This seminar highlighted the opportunities brought about by the Intel project and gave insight into developments in advanced air mobility, space, and electric propulsion. It also touched on sustainability, industry 4.0 and talent. As managing director of advanced manufacturing and aerospace for JobsOhio, Richardson is responsible for leading the state's economic development network to help existing Ohio manufacturing and aerospace companies grow, and to attract new companies to the state. >>>

< Dennis Andersh, MSEE, CEO and president of Parallax Advanced Research, presented "The State of Ohio: A National Leader in Flight." Attendees learned Ohio is quickly becoming a U.S. leader in the advancement of UAS/drone technology and about opportunities to fill infrastructure needs for smaller aircraft.

< Elaine Goetz, PhD, EIT, CEM, LEED AP O&M, Ohio University's director of energy management and sustainability, talked about OU's work towards becoming carbon neutral by 2050. Conference participants learned the main barriers to reaching carbon neutrality at OU and similar institutions.

< AGES Geotechnical Project Manager/ Laboratory Manager Sebastian Lobo-Guerrero, PhD, PE, presented on landslide stabilization with deep foundation elements, such as micropiles and drilled shafts.

< In a session titled "Optimizing for Phosphorous Removal in Wastewater Treatment Plants," Environmental Specialist Jon van Dommelen, PE, of the Ohio EPA Compliance Assistance Unit taught participants methods for getting biological nutrient removal wastewater treatment plants in compliance without feeding chemicals. According to van Dommelen, process control is the key; ammonia, nitrate, and orthophophate testing are essential.

< Jerry Rouch, the Ohio EPA's deputy director for infrastructure funding, presented "Water & Wastewater Funding Opportunities Through the Infrastructure Investment and Jobs Act." Previously, he led environmental and financial assistance for the Ohio EPA.

Quality ethics education

State Board of Registration Executive Director John Greenhalge, MBA, discussed "Ohio Requirements for Engineering & Surveying Firm Licensure." This seminar was worth one hour of ethics and rules credit.

Susan Willeke, training and communications manager for the Ohio Ethics Commission, took a "deep dive" look into the Ohio Ethics law by highlighting each area of the law and focusing on its specific applications.

< Deb McAvoy, PhD, PE, PTOE, associate professor in Ohio University's Department of Civil Engineering, presented "Teaching Engineering Ethics." McAvoy explained how she prepares engineering students to face nuanced and complex ethical situations in the workforce. Referencing Ohio Administrative Code 4733-35, McAvoy taught seminar participants the complexities of historical ethical dilemmas and how engineering ethics can be taught without relying on historical case studies.

Onward & Upward

2022 ALL-OHIO ENGINEERING CONFERENCE

ANNUAL MEETINGS - JUNE 9
12 VIRTUAL CPD HOURS - JUNE 10-11

Thank you, sponsors!

Platinum

A & A Engineering Civil & Structural
American Electric Power
Northeast Chapter, OSPE
Ohio University, Russ College of Engineering & Technology
Terracon Consultants, Inc.

Silver

DGL Consulting Engineers, LLC
Middough, Inc.
Sigma Technologies, Ltd.
SSOE
Stantec
TTL Associates, Inc.

Bronze

Dayton Chapter, OSPE
Shaffer, Johnston, Lichtenwalter & Associates, Inc.
Tetra Tech, Inc.
The University of Toledo, College of Engineering

Contributor

Michael A. Avellano, PE, SE, PMP

Advertisers

A & A Engineering Civil & Structural
American Electric Power
BSI Engineering
Cuyahoga Community College
Dayton Chapter, OSPE
Northeast Chapter, OSPE
Ohio University, Russ College of Engineering & Technology
Shaffer, Johnston, Lichtenwalter & Associates, Inc.
Terracon Consultants, Inc.
Toledo Chapter, OSPE

To sponsor the 2023 Conference, please call OSPE at 1-800-654-9481.

ENGINEERS FOUNDATION OF OHIO
Engineers Leadership Institute

ONLINE 10 CPD HOURS

Educator **David Bayless, PhD, PE** — past director of the Robe Leadership Institute at Ohio University's Russ College of Engineering — will teach you to influence others, to improve team performance & cohesion, and situational leadership.

The Engineer As Leader - Spring 2023 - efo@ohioengineer.com

NSPE-OH™ OHIO SOCIETY OF PROFESSIONAL ENGINEERS

WELCOME, NEW MEMBERS

Welcome to these new NSPE-Ohio members from May 5 through August 16, 2022:

Akron District Chapter
Todd E. Ebert, PE

Dayton Chapter
Richard Lee Allen, PE
James A. McGarry, PE
Robert Rudolph, PE

Franklin County Chapter
Taylor Arens, PE
John C. Buchanan, PE
Craig Christopher Flynn, PE

FCC (cont'd.)
Norberto Nunez Morales, PE
Andrew Schmit, PE

Northeast Chapter
Joseph Scanlan

Southwest Ohio Chapter
Austin DeWitt Burfield, PE
Mitchell F. Magee, PE

Toledo Chapter
Matthew Franchetti, PE

ENGINEERS FOUNDATION OF OHIO
December Seminar Series

"THANKS FOR THE AWESOME TRAINING."
-2021 PARTICIPANT

Enjoy a new & interactive project management seminar on December 5, 2022.

ONLINE 6 CPD HOURS

VIRTUAL PROGRAM
Attend from the warmth & comfort of your home or office.

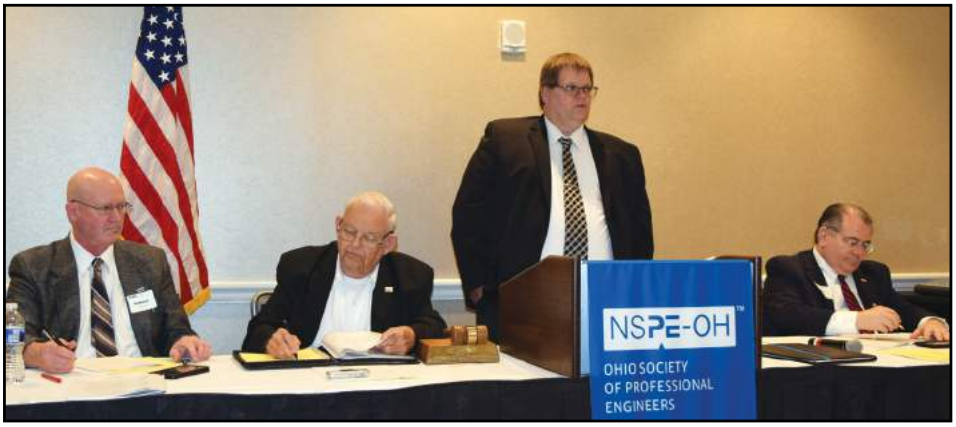
For more information, email efo@ohioengineer.com

OSPE & EFO host annual meetings

ALL-OHIO ENGINEERING CONFERENCE
JUNE 9-11, 2022

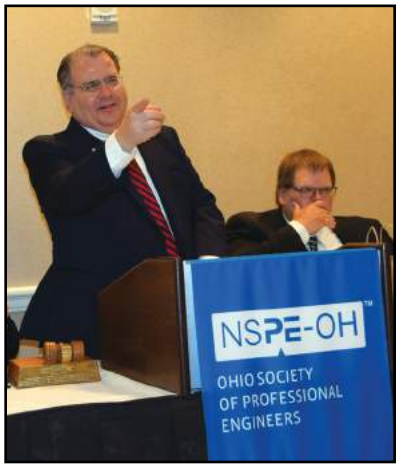
At the 2022 OSPE and EFO Annual Meetings held in Columbus in June, both organizations' members elected their respective boards for fiscal year 2023. Also, the incoming OSPE and EFO presidents presented the retiring presidents with commemorative gavel plaques in gratitude for their year of service, and remarks were made by State Board of Registration Chairman and OSPE member Walid Gemayel, PE, and NSPE Treasurer Robert H. "Bob" Price PE, FNSPE. Later that evening, at the Presidents' Party, Price installed both organizations' boards and provided an exciting update about NSPE's plans for the future of the organization. (See more photos, page 12.)

NSPE Treasurer Robert H. "Bob" Price, PE, FNSPE, makes remarks on behalf of NSPE. Price has served in a number of capacities for NSPE and the Texas Society since the late 1980s. From 2012-2015, he served as a public member of the Texas Board of Professional Land Surveying. He was also previously appointed to the Texas Commission on Fire Protection.



At the OSPE Annual Meeting, President Chett Siefring, PE, (standing) conducts business with Treasurer Tony Grgas, PE (far left), Secretary Howard Jones (second from left), and Executive Director Tim Schaffer (far right).

< At the OSPE Annual Meeting, State Board of Registration for Professional Engineers and Surveyors Chairman Walid Gemayel, PE, makes remarks on behalf of the regulatory board. An OSPE member, Gemayel is a senior vice president and partner at American Structurepoint. He said Ohio is decoupling experience from the PE exam.



OSPE Executive Director Tim Schaffer thanks the members of the 2021-2022 OSPE Board of Directors for their service.

EFO President Rodney Wilson, PE, makes his report at the EFO Annual Meeting. Reflecting on EFO's many successes, he remarked that EFO is an "outstanding organization," and he lauded the merits of its programs for professionals and students. >>>

Gavel Plaque Presentations: In photo 1, OSPE incoming president Travis Rhoades, PE (left), presents a gavel plaque to retiring president Chett Siefring, PE, CPESC. In photo 2, EFO incoming president Aurea Rivera, PE, PMP, PMI-ACP (left), presents a gavel plaque to retiring president Rodney Wilson, PE.

OSPE & EFO install officers for fiscal year 2023

At the Presidents' Party, NSPE Treasurer Robert H. "Bob" Price, PE, FNSPE, (far right) installs the OSPE and EFO boards for fiscal year 2023, including (L-R) EFO Past President Rodney Wilson, PE; EFO Secretary Jim Montgomery, PE; EFO President-Elect Tina Sutermeister, MBA, PE, FNSPE; OSPE Secretary Howard Jones, PE, FNSPE; EFO President Aurea Rivera, PE, PMP, PMI-ACP; OSPE President & NSPE Delegate Travis Rhoades, PE; EFO Professional Education Committee Chair Dennis Irwin, PhD, PE, FNSPE; and OSPE Past President Chett Siefring, PE, CPESC.

< OSPE Past President Chett Siefring, PE, CPESC, passes the gavel to newly installed President Travis Rhoades, PE, thereby symbolically transferring authority and responsibility for leadership to the new OSPE board of directors.

< EFO Past President Rodney Wilson, PE, passes the gavel to newly installed President Aurea Rivera, PE, PMP, PMI-ACP, thereby symbolically transferring authority and responsibility for leadership to EFO's new board of trustees.

EFO President Rod Wilson, PE, presents three President's Awards

< EFO President Rodney Wilson, PE, (left) presents Greg Ruff of Wells Fargo Advisors with the 2022 EFO President's Award. Ruff has served as EFO's investments manager for many years, helping EFO navigate difficult economic times, including the Great Recession, and celebrating the good times with EFO as well. Ruff also heavily supports the EFO Benefit Golf Outing, which generates money for engineering scholarships and for youth education programs. Ruff is based in Dublin, Ohio.

Senior Accountant Deena Foley accepts the EFO President's Award on behalf of Ottinger & Associates, CPAs, a family-run accounting firm that has partnered with EFO for more than 20 years. Led by Cathy Ottinger, CPA, and based in Galena, Ohio, Ottinger & Associates specializes in nonprofit clients and management. Ottinger & Associates also is a major supporter of the EFO Benefit Golf Outing.

EFO ENGINEERS FOUNDATION OF OHIO

< Dr. Gary Gutman received the EFO President's Award in recognition of his work with the Ohio MATHCOUNTS program. As the staff host at Columbus State Community College, Dr. Gutman has helped, guided, mentored, and interceded for both the Ohio and Franklin County Chapter MATHCOUNTS competitions. Dr. Gutman earned his PhD in mathematics from Northwestern University and his BS in mathematics from University of Chicago.

OSPE President Chett Siefring, PE, CPESC, presents OSPE Awards

Meritorious Service Award

Pictured with OSPE President Chett Siefring, PE, CPESC, left, Meritorious Service Award winner Dustin Doherty, PE, is active in OSPE and the Franklin County Chapter. He is the chapter's membership chair and programs chair. Previously he served as chapter president, vice president and young engineers' trustee. Doherty also volunteers for the Imagine Engineering program, Engineer for a Day, Science Day and MATHCOUNTS. Doherty has planned programs that appeal to young professionals and recruited several new NSPE members.

Uncommon Engineer Award

Fred Tito, PE, FNSPE, has retired as a partner and principal with JDI Group, Inc. His career was in the electrical and controls engineering field, and he specialized in industrial food. Tito has served many clients, including Union Carbide, Xerox, Ford, Honda, Anderson Development, Marathon, FedEx, General Mills, and others. He has been the lead electrical engineer for numerous General Mills projects. Tito is past president of OSPE's Toledo Chapter, a two-time past president of OSPE and a past president of EFO. An advocate for engineering education and a longtime volunteer for the Ohio MATHCOUNTS program, Tito was the 2006 winner of the EFO President's Award. At the 2022 Awards Luncheon, Tito also received the Toledo Chapter's **Four-Star Chapter Recognition** and its **Engineers Week Overall Observance Award**.

Professional Engineering Management Award

Dustin Doherty, PE, received his BSCE from The Ohio State University, and then he earned his Ohio PE license in 2012. He is also a Certified Professional in Erosion and Sediment Control. In 2018, Doherty joined Civil & Environmental Consultants, Inc., where he works today as a senior project manager. Doherty is an experienced civil engineer with more than 16 years of experience managing site civil design projects, private commercial site design, institutional utility projects and city engineer support services. Previously, Doherty worked as a construction inspector for TesTech in Dayton, a project engineer for EMH&T, and a project manager for CT Consultants.

Legislator of the Year Award

State Representative Bill Seitz, center, is recognized for his work in developing a proposal that would limit indemnification liability for a professional design firm or those providing professional design services in public improvement contracts (bridges, roads, etc.). Seitz, who represents the 30th Ohio House District, is pictured with OSPE President Chett Siefring, PE, left, and OSPE lobbyist Matthew Whitehead, vice president of Governmental Policy Group, Inc., right.

Young Engineer of the Year

Colleen Konsavage, PE, a member of the Franklin County Chapter of OSPE, previously served as the chapter's Young Engineers Trustee, and she held successful young engineers' networking and social events. In addition, Konsavage has generated several interesting seminars for practicing engineers. For fiscal year 2022, Konsavage served as a vice president of the Franklin County Chapter. She is also a MATHCOUNTS volunteer.

Outstanding Engineering Educator Award

William (Ted) Evans, PhD, PE, is as professor and program director for the electrical engineering technology (EET) program at the University of Toledo. He has developed and refined the program curriculum, led its assessment and continues to works towards its improvement. He regularly collaborates both inside and outside of the University on programs designed to enrich the EET educational infrastructure.

Outstanding Engineering Student Award

Andrew Cochran is studying electrical engineering at Ohio Northern University, with a minor in Spanish. With a 4.0 GPA, he has been president of Tau Beta Pi (engineering honor society) and a member of Alpha Lambda Delta (freshman national honor society). He has conducted undergraduate research at ONU and Purdue University, and he has secured internships with Naval Nuclear Laboratories and Marathon Pipeline. He is a Student Senate leader and the recipient of several awards, scholarships and recognition.

Lois Huang draws a winner

Mason second grade student wins the 2022 Imagine Engineering Coloring Contest

Lois Huang
Mason Early Childhood Center
(1st place winner)

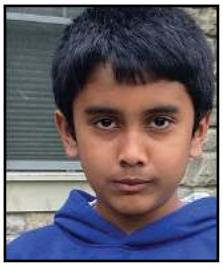
Mason Early Childhood Center makes a 'clean sweep' securing all three state Imagine Engineering contest prizes

Three Mason Early Childhood Center second graders – Lois Huang, Saatvik Yalamanchili, and Meha Dulal – have respectively placed 1st, 2nd and 3rd in the 2022 Imagine Engineering coloring contest out of more than 5,600 students statewide. Over the program's 24-year history, MECC students have sometimes placed in the statewide coloring contest, but this was the first time that all three state-level winners came from the same elementary school.

The 2022 contest winners demonstrated that they learned a lot about engineering work:

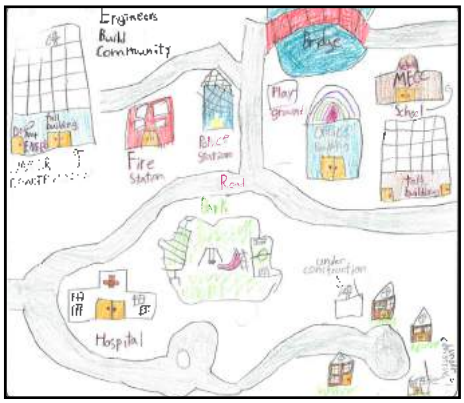
- **Lois Huang** won the contest by drawing and coloring a vibrant picture of a construction site visit *(page 14)*. In the foreground, a professional engineer reviews design plans while workers execute the plans by beginning construction on a building in the background. Miss Huang will receive a telescope, the first-place prize.
- **Saatvik Yalamanchili** placed second by drawing and captioning "A Day in the Life of an ... Electrical Engineer." His drawing shows an electrical engineer using testing equipment and it explains that engineers design, develop, supervise manufacturing, evaluate electrical components, process, and troubleshoot. He will receive a hand-held, digital microscope, the second-place prize.
- **Meha Dulal** placed third by submitting a detailed drawing, which she entitled "Engineers Build Communities." Her drawing depicts many of the local places engineers have designed, including Mason Early Childhood Center and other community buildings. She also labeled a few unfinished buildings "under construction." She will receive a MathShark skill building game and calculator, the third-place prize.

Saatvik Yalamanchili's drawing shows an electrical engineer using testing equipment.



Saatvik Yalamanchili
Mason Early Childhood Center
(2nd place winner)

Meha Dulal
Mason Early Childhood Center
(3rd place winner)



Meha Dulal's drawing, "Engineers Build Community," depicts many local engineering projects.

Jeff Kennedy, PE, shows second grade students how a rolled up piece of paper can support a brick.

The Engineers Foundation of Ohio (EFO) founded Imagine Engineering in 1999. And every winter, from the program's inception through February 2020, Ohio Society of Professional Engineers (OSPE) chapter members visited their local elementary schools to explain to second graders what engineering is and what professional engineers do.

EFO was already working to update its original Imagine Engineering program materials when it became apparent that the COVID-19 pandemic would continue to impact teaching and learning in 2021. This insight led EFO to turn its modern script into an exciting new educational video that can be distributed virtually or presented in person, as needed.

In the video, real Ohio professional engineers – all members of OSPE – explain engineering at a fundamental level and demonstrate engineering experiments. Regardless of whether the program is conducted virtually or in person, second grade educators may call upon OSPE members to engage their students in dynamic conversations about engineering and answer students' questions.

"Our job is to educate and inspire the next generation," said EFO President Rodney Wilson, PE. "The new and improved Imagine Engineering program shares the basic concept of engineering with Ohio's second graders. We help them see the built world around them with new eyes. And perhaps someday they will apply what they've learned to their own futures. Someday, these students may do great things with engineering careers!"

Wilson credited EFO's sponsors and many volunteers for their support of Imagine Engineering, "Thank you to EFO's generous sponsors – and especially to the American Electric Power Foundation for its support of our new video. Thanks also to the OSPE member volunteers who worked with second grade classes in 2022 and to the volunteers who judged the state contest: Steve Day, Scott Dilling, Tony Grgas, Rich Irwin, Howard Jones, Aurea Rivera, Devon Seal, and Jon Wheeler."

AMERICAN ELECTRIC POWER FOUNDATION

by Joseph V. Warino, PE, PS, FNSPE, Vice President,
Legislative & Government Affairs, Ohio Society of Professional Engineers

Engineers preserve Pompeii while OSPE member engineers promote the profession for a healthy, strong & prosperous Ohio

Having been grounded for more than two years, thanks to the pandemic, my family's spring 2022 cruise along the Mediterranean was definitely long awaited. While I have been privileged to visit much of Europe, our most recent trip may very well be the most memorable. Our cruise started in Athens and ended in Barcelona with port stops in Italy, Montenegro, and France. Our past trips took us to several landmark sites, including the Vatican, the Colosseum, and Pisa, but our visit to Naples this spring led us on an excursion to Pompeii.

Pompeii was an ancient city located in what is now the *comune di Pompei* near Naples in the Campania region of Italy. Pompeii was founded in the 7th-6th century BC. The first historical reference to the ancient city was a mention in 310 BC, during the second Samnite war, when a Roman fleet moored there to attack the city of Nocera.

Along with Herculaneum and many villas in the surrounding area, Pompeii was buried under 4 to 6 meters (13 to 20 feet) of volcanic ash and pumice when Mount Vesuvius erupted in AD 79. The city's quick burial preserved it for centuries before its ruins were discovered in the late 16th century. Pompei supported between 10,000-20,000 inhabitants at the time of its destruction.

Excavations began in the mid-1700s and have continued, on and off, over more than 200 years. Recently, following decades of minimal maintenance, in the last year engineering stabilization strategies have secured the site and the safety of the remaining structures, thereby helping archaeologists and scientists preserve the historical site for future generations.

I have always been intrigued by the numerous structures, their massive stone columns and wooden structural beams, which were designed and built centuries ago by our predecessors, and which have stood the test of time. When we look back at the history of the United States, we usually talk about structures that are 200-300 years old. In Europe, historic structures are 2,000-3,000 years old – or older. I am fascinated by their vastness, and in awe contemplating how they could have built such monuments with the construction equipment available during that period. I often wonder if they could be built today even with the most advanced construction equipment.

As engineers, we are very fortunate to have these ancient structures – documented history – still available to reference. Historical structures employ fundamental engineering principles, but they also extend our knowledge about engineering, including materials, tools, techniques, soils and durability.

OSPE Vice President Joe Warino, PE, PS, F.NSPE, visits the site of Pompeii, an ancient city located in what is now the *comune di Pompei* near Naples in the Campania region of Italy.

As engineers, we are also quite fortunate to have available to us the talent and expertise of our Ohio Society of Professional Engineers' members who protect and grow the profession. With diverse engineering backgrounds, OSPE members have the knowledge and experience to appropriately and successfully address Ohio's many modern engineering concerns – perspectives to solve technical problems, perspectives to keep Ohio healthy, strong and prosperous, and perspectives that are worth sharing with the state's lawmakers.

You are such a member – a member with talent, expertise and perspective, a member who can safeguard the profession and help Ohio succeed. We need you, as a registered professional engineer and an OSPE member, to actively engage in advocacy for our profession.

You can best accomplish this by being an active member in the Ohio Society of Professional Engineers. **By "active," I mean take advantage of your OSPE resources! Seek knowledge and arm yourself with it.** Review the legislation summarized on the next page. Attend our free, virtual, twenty-minute Lunchtime Legislative Briefing offered each quarter. Read the Legislative Update newsletters that you periodically receive by email. Or get involved in the discussion at OSPE's quarterly Legislative & Government Affairs meetings.

Another simple way to step up is to **contact your local legislators** to let them know the reasons engineering licensure is vital to preserving the health and safety of the public. If you haven't already done so, it is never too late to introduce yourself to your elected legislators. You can contact them via mail, email, a phone call, or a personal visit. OSPE is happy to help you make contact with your legislators, and we can arm you with details about the critical need for professional licensure for engineers.

Make it your mission to support engineering licensure so we can preserve our profession and keep Ohio healthy, strong and prosperous.

OSPE bill tracking summary *

DEREGULATE CERTAIN EPHEMERAL WATER FEATURES, House Bill 175 (Hillyer)	To deregulate certain ephemeral water features, make other changes to various water pollution control laws, to authorize a property tax exemption for certain private wetlands, and to make an appropriation.	Status: 4/21/2022 - SIGNED BY GOVERNOR; eff. 90 days
LICENSURE THROUGH APPRENTICESHIP, House Bill 181 (Powell)	To require a licensing authority to issue an occupational license to an applicant who completes a registered apprenticeship program and meets other requirements. *(Note: PEs are not impacted.)*	Status: 4/5/2022 - House Commerce and Labor, (Fourth Hearing)
REQUIRE OCCUPATIONAL LICENSE IF EXPERIENCED IN OTHER STATE, House Bill 203 (Powell)	To require an occupational licensing authority to issue a license or government certification to an applicant who holds a license, government certification, or private certification or has satisfactory work experience in another state under certain circumstances. *(Note: Amended bill includes OSPE-approved language.)*	Status: 6/1/2022 - PASSED BY HOUSE; Vote 56-33 Position: Support
BUILDING INSPECTION LAWS, House Bill 372 (Ray, Roemer) & Senate Bill 196 (Roegner)	To make changes to the law relating to building inspections. *(Note: As introduced, the House and Senate bills are similar in language, but not identical.)*	Status: 5/25/2022 - HB 372, Referred to Senate Small Business and Economic Opportunity. 5/17/2022 - SB 196, Referred to House Commerce and Labor.
PROPERTY DEVELOPMENT, House Bill 430 (Cross)	To amend sections 153.64 and 3781.27 of the Revised Code relating to property development and protecting underground utility facilities during construction. *(Note: Requires county/city engineers to gather data about the locations of pipelines. Prohibits county/city engineers from giving final approval to a development until the requirements of the bill have been satisfied by the developer.)*	Status: 6/24/2022 - SIGNED BY GOVERNOR; eff. 90 days
REVISE OCCUPATIONAL REGULATIONS, House Bill 509 (John, Fowler)	To revise and streamline the state's occupational regulations.	Status: 5/25/2022 - Senate Workforce and Higher Education (First Hearing)
NATIONAL INFRASTRUCTURE BANK, House Resolution 19 (Sobecki, Stephens)	To urge the United States Congress to create a National Infrastructure Bank to finance urgently needed infrastructure projects.	Status: 2/24/2021 - House Infrastructure and Rural Development, (First Hearing)
REDUCE REGULATIONS, Senate Bill 9 (McColley, Roegner)	To limit regulatory restrictions in administrative rules. *(Notes: This bill does not directly impact the State Board of Registration for Professional Engineers & Surveyors, but it does impact agencies where PEs work. There is an exemption for rules incorporated by reference, such as a reference to a federal rule. However, if the Ohio rule is more stringent than the federal rule, then Ohio's rule may be invalidated. Another provision would allow the state agency to show cause why its required reduction in regulatory restrictions should be lessened.)*	Status: 3/10/2022 - SIGNED BY GOVERNOR, statutory language eff. 90 days Position: Interested party with concerns
PAYMENT ASSURANCE-DESIGN PROFESSIONALS, Senate Bill 49 (Hottinger, Sykes)	To establish a payment assurance program for registered design professionals.	Status: 7/1/2021 - SIGNED BY GOVERNOR, eff. 90 days
INDEMNITY-DESIGN CONTRACTS, Senate Bill 56 (Blessing)	To regulate the use of indemnity provisions in professional design contracts related to public improvements.	Status: 4/5/2022 - Senate appoints managers; Blessing, McColley & Thomas named as Senate conferees Position: Support
LICENSURE RECIPROCITY BILL, Senate Bill 131 (Roegner, McColley)	To require an occupational licensing authority to issue a license or government certification to an applicant who holds a license, government certification, or private certification or has satisfactory work experience in another state under certain circumstances.	Status: 6/1/2022 - PASSED BY SENATE; Vote 31-0 Position: Support

**** This is a partial list of the bills that the Ohio Society of Professional Engineers is tracking.***

NSPE-OH™ OHIO SOCIETY OF PROFESSIONAL ENGINEERS
400 South Fifth Street · Suite 300 · Columbus, Ohio 43215-5430

PRSRT STD
U.S. Postage
PAID
Columbus, Ohio
Permit No. 305