

Pennsylvania PE Conference Invitation

85th Annual Conference

Pennsylvania Society of Professional Engineers

September 18 - 21, 2019

Wind Creek Bethlehem

The **Pennsylvania Professional Engineers Conference, hosted by the Pennsylvania Society of Professional Engineers**, brings licensed engineers together in one location, to meet face-to-face with colleagues. Professional Engineers from Pennsylvania, the northeast region, and around the country collaborate on solutions to shared challenges. Consultants and specialists build teams and expand networks.

Licensed engineers on the planning committee have built a lineup of sessions which we believe will provide an overview on a variety of projects. While not every subject will apply to your practice specifically, when the situation comes up you now have a reference point.

Meet here with colleagues who face the same challenges you do.
Participate in the Order of the Engineer Ceremony.
Select from peer reviewed sessions.

We look forward to seeing you! Register online at www.pspe.org

2019 Pennsylvania PE Conference

2019 Conference Planning Committee

Mike Basta, PE~ Chair

Susan Best, PE

David Briskey, PE | Hill International

Dan Cook, PE | Alfred Benesch & Company

Amy Daiute, PE | Traffic Planning & Design Inc.

Al Dezubay, PE | Dezubay Engineering Services

James DiLouie, PE | AECOM

Jennifer Nolan-Kremm, PE | AECOM

Brian Palmiter, Jr., EIT | Borton Lawson

Alexa Rooney, EIT, JD | PPL

Raymond Szczucki, PE | Ace USA

David Williams, PE | CDI – L.R.Kimball

Nicole Wilson, PE | EarthRes Engineering & Science

Hotel Accommodations

Wind Creek Bethlehem

77 Wind Creek Blvd

Bethlehem, PA 18015

PSPE guests can call (877) 726-3777 to make reservations.

Group ID: Pennsylvania Society of Professional Engineers

Group Rate: \$139 plus tax

Group rate cutoff: August 19, 2019

2019 PE Conference Itinerary

Wind Creek Bethlehem

Wednesday, September 18

3:00 pm – 5:00 pm PSPE Executive Committee Meeting

6:00 pm – 7:30 pm Dinner at the Bayou

Thursday, September 19

7:30 am – 5:30 pm Registration, Coffee Break

8:00 am – 8:30 am Opening Session Robert J. Donchez
Mayor Bethlehem

8:45 am – 12:00 pm Concurrent Sessions | up to 3 PDH

10:15 am Spouses: Depart Wind Creek for Martin Factory

12:15 pm – 1:30 pm Lunch and Order of the Engineer Ceremony

1:30 pm – 5:00 pm Concurrent Sessions | up to 3 PDH

6:00 pm – 7:30 pm Dinner at Emeril's Fish House

Friday, September 20

7:30 am – 5:30 pm Registration, Coffee Break

8:30 am – 12:00 pm Concurrent Sessions | up to 3 PDH

12:00 pm – 1:15 pm Lunch with NSPE Guest Speaker

1:15 pm – 4:45 pm Concurrent Sessions | up to 3 PDH

5:30 pm – 6:15 pm President's Reception

6:15 pm – 9:15 pm Installation of Officers, Awards Banquet, and
PEF Fundraiser

Saturday, September 21

8:15 am – 9:15 am Past Presidents' Breakfast (*invitation only*)

10:00 am – 12:00 pm PSPE Board of Directors Meeting

12:00 pm – 1:00 pm Lunch

2019 Pennsylvania PE Conference

Arriving Wednesday?

For those arriving Wednesday in time for dinner, the group will gather at the [Bayou](#). Reservations will be at 6:00 pm. Meet us there (702 Hawthorne Rd, Bethlehem, PA 18018) or meet in the Wind Creek Lobby at 5:45 to shuttle/carpool. We will order from the menu and pay by individual check. Engineers, spouses, and families are welcome!

Martin Guitar Factory Tour Thursday, September 19

Itinerary

10:15 am	Depart Wind Creek Lobby for Martin Factory
10:45 am	Arrive Martin Factory
11:00 am	Tour Martin Factory
12:00 pm	Browse
12:30 pm	Depart Martin Factory for lunch at Hotel Bethlehem

Fees: No charge for Martin Factory Tour. Lunch individuals pay own.

Martin Factory Tours

"As a visitor on the factory floor, your guided tour will show you how our guitars come to life through the hands of the craftsperson. Explore the art of guitar making, from old world tools to our state-of-the-art facility. Follow a guitar from rough lumber to a finished product which requires more than 300 steps to complete.

Tours last approximately one hour. Photographs are allowed without a flash. Video cameras or recorders are not permitted. Cell phones are permitted for capturing images. Closed-toe shoes are recommended." (Ref: <https://www.martinguitar.com/about/visit-us/>)

TRAVEL: 30 minute drive from Wind Creek. Transportation provided.

Register as a PSPE conference guest (www.pspe.org) the to attend the tour.

PSPE 2019 Conference Registration

Registration Fees

	<i>NSPE Member</i>	<i>Non-member</i>	<i>Full-time Student</i>
Full conference	\$ 385	\$ 585	\$ 50
Thursday sessions	\$ 200	\$ 375	\$ 25
Friday sessions	\$ 200	\$ 375	\$ 25

Tickets Ala Carte

Fee per person

Thursday lunch	\$ 30
Order of the Engineer Ring	\$ 15
Thursday dinner at Emeril's Fish House	\$ 45
Friday lunch	\$ 30
Installation and Awards Banquet	\$ 60
Saturday lunch	\$ 25

Register online at www.pspe.org. Pay by check or credit card.

Full Registration includes lunch, dinner, meetings, sessions, coffee breaks, and certificates of attendance for Thursday and Friday

Daily Registration includes meetings, sessions, lunch, coffee breaks, and certificates of attendance on specified day. *Dinners require additional tickets.*

Meal Tickets can be purchased ala carte.

Spouse/Guest(s) must register individually to purchase tickets for meals and tours.

Full-time Students carrying a minimum of 15 credits are welcome to attend sessions and lunch at a discounted rate.

Questions? 717.441.6051 | Iramsey@wannerassoc.com

Continuing Education Notes

New York: All sessions will be reviewed for acceptability toward the engineer's license in NY. As sessions are approved a "1" will be placed next to the title.

New Jersey: PSPE is an approved provider of continuing education towards the NJ engineers license.

Pennsylvania: The Pennsylvania State Board for Professional Engineers, Land Surveyors and Geologists does not provide preapproval for any continuing professional competency activities, courses or providers. Rather, engineers are granted the ability to determine for themselves whether a particular session maintains, improves or expands skills and knowledge obtained prior to initial licensure, including law and ethics applicable to the profession, or develop new and relevant skills and knowledge. Attendees will receive a certificate of attendance after each session.

Order of the Engineer Induction Ceremony

As an engineer you take deep pride in your profession. Stand with peers as you are inducted into the Order during this solemn and respectful ceremony at lunch on Thursday.

The Order of the Engineer is the contingent of engineers in the United States who have accepted the Obligation of an Engineer. The Order of the Engineer fosters a unity of purpose and honors lifelong dedication to the profession.

Members of the Order voluntarily pledge to uphold the standards and dignity of the engineering profession and to serve humanity by making the best use of Earth's precious wealth. The symbol of the Order is a stainless steel ring worn on the fifth finger of the working hand. (A PE license is not required.)

If you are registered for the full conference, or the day, simply add the ceremony and your ring size to your registration.

(Attendees have the option to register with a ticket for lunch and the ceremony only.)

Vendor Options

Vendor Invitation

Licensed Engineers practicing in many specialties will attend the PSPE 2019 Conference. Make your company, services, and products visible to them here through sponsorship and advertising.

Advertising

Capitalize on the PSPE 2019 Conference and promote your products and services in the onsite program book. Attendees refer to the program book for their schedule and locations.

Full page back cover.....	\$400
Full page inside front cover	\$400
Full page (7.5" l x 4.5" w).....	\$300
Half page (3.25" l x 4.5" w)	\$200
Business card (1.75" l x 4.5" w).....	\$100

Register online at www.pspe.org. Pay by check or credit card.

- Ads will print in color.
- Sponsor logos displayed onsite, online and in printed material.
- Send electronic files to jennifer@wannerassoc.com
- Preferred file format: .jpg, or .pdf (fonts embedded)
- Deadline: August 30, 2019

Sponsorship

Sponsors and friends will be recognized onsite, online, in print, and in conference correspondence.

Platinum Sponsor	\$ 5,000
(includes 5 registrations + full page ad + logo)	
Gold Sponsor	\$ 3,000
(includes 3 registrations + full page ad + logo)	
Silver Sponsor	\$ 2,000
(includes 2 registrations + half page ad + logo)	
Bronze Sponsor	\$ 1,000
(includes 1 registration + business card ad + logo)	
Caffeine Sponsor	\$ 500
(includes logo)	

Sessions

Thursday, September 19, 2019					
Track 1		Track 2		Track 3	
8:00 am - 8:30 am		Opening Session - Robert J. Donchez, Mayor of Bethlehem			
8:45 am - 10:15 am (1.5)	Ethics 101 Eric Tappert, PE	Civil John Lewis, PE	Structural Failures and Water Infiltration: Investigating the Built Environment Gregory P. Marks, PE		
10:30 am - 12:00 pm (1.5)	Safety/Engineering/Construction Bernie Telatovich, PE	South Valley Parkway Update Heather Heeter	Commissioning & Start Up of Renovated Bldgs/Mechanical Systems Al Dezubay, PE		
12:15 pm - 1:30 pm		LUNCH Order of the Engineer Ceremony			
1:30 pm - 2:30 pm	Document Management and Discovery – How Documents and E-mails Are Used in Litigation Richard Davies, Esq.	Bicycling Beyond the Big Cities: Enhancing On-Road Cycling in Small Towns and Suburban Communities Benjamin Guthrie, PE	Net-Zero Design Principles Howard Alderson, PE		
2:45 pm - 3:45 pm		Accelerated Bridge Construction: I-78 Bridge Underclearance Project and SR 29 Over Indian Creek Bridge Replacement Project Brian Brawand, PE	Variable Refrigerant Flow (VFR) - Design and Applications Bryan Overbeck, PE		
4:00 pm - 5:00 pm	Transmission Pipeline - Providing Marcellus Shale Natural Gas to the Wyoming Valley William Karr, PE	Pennsylvania Safety Transportation and Research Track (PennSTART) Joseph W. Sutor and Troy D. Truax	Behind the Scenes Casino Tour (limit 40)		
Friday, September 20, 2019					
Track 4		Track 5		Track 6	
8:30 am - 9:30 am	Bloomsburg Flood Risk Management Project David Wieller, PE	Lifecycle of a Roadway & Bridge Design James Carr PE, Mike Barkasi	LED Lighting -Tunable White and Color Changing Technologies Jim Yorgey, PE		
9:45 am - 10:45 am	Dam Rehabilitation Case Studies in Pennsylvania Jennifer Kowalonek, PE	Pennsylvania Design/Build Experiences John Nawn, PE	Electricity for Non Electrical Engineers Al Gruenke, PE		
11:00 am - 12:00 pm	DEP and DRBC...Navigating the Water Quality Permitting Maze Angelika Forndran, PE	Lifecycle of a Site Design James Carr PE, Mike Barkasi	Fuel Security Dave Souder		
12:00 pm - 1:15 pm		LUNCH NSPE Update			
1:15 pm - 2:15 pm	Philadelphia Floodplain Development and Regulations Josh Lippert, PE	Replacement of Tram MG Sets with Variable Speed Drives at the Gateway Arch Harve Hnatiuk, PE	Smart Cities Glenn Pritchard, PE		
2:30 pm - 3:30 pm	Obtaining Potable Water from Unconventional Sources John Ackerman, PE, PG	Foamed Glass Lightweight Aggregate (FG-LWA) Craig Calabria, PE	UAV Utilization by Electric Utilities Trevor Siegfried, PE		
3:45 pm - 4:45 pm	General Session - Luzerne County Emergency Response to Tornado (David Elmore)				

Session Abstracts - Thursday

8:00 am - 8:30 am

Opening Session

Robert J. Donchez, Mayor of Bethlehem

8:45 am - 10:15 am | 1.5 PDH

Ethics 101

Eric Tappert, PE

Ever wonder where the various rules that comprise a code of ethics come from? Ever wonder if there are theories that help resolve ethical dilemmas? This presentation examines the sources of the ethical codes and presents the various ethical theories that can be used to resolve ethical conflicts, with particular attention to their strengths and weaknesses. Also included is a discussion of the NSPE Code of Ethics' Fundamental Canons vis-à-vis their ultimate source. This hour and a half session is highly recommended for those who desire a deeper understanding of ethics beyond it being just a set of arbitrary rules.

Eric Tappert, PE received his Bachelor of Science in Electrical Engineering from the Moore School of Electrical Engineering at the University of Pennsylvania (1969) and his Master of Science in Telecommunications from the University of Colorado (1998.) Eric's career included working on the Safeguard Anti-Ballistic Missile System with responsibility for maintenance and development of the multi-processor computer system; design work for cell site equipment used in the Bell System service trial of cellular telephony. In 1979 he came to the Western Electric Plant in Allentown to perform application and integrated circuit definition work. Since his retirement in 2002, he has done some consulting work in the area of communication system design and has been an adjunct faculty member of the Pennsylvania State University, Berks Campus, teaching electrical engineering technology courses. He is a Past-President of PSPE and a senior member of the IEEE.

8:45 am - 10:15 am | 1.5 PDH

Civil

John Lewis, PE

Barry Isett and Associates, Inc.

8:45 am - 10:15 am | 1.5 PDH

Structural Failures and Water Infiltration: Investigating the Built Environment

Gregory P. Marks, PE

Barry Isett and Associates, Inc.

Forensic engineering in the construction industry encompasses investigation of buildings and infrastructure that fail or do not function as intended. Old and new construction alike offer plenty of deficiencies – the former due to age and Mother Nature, the latter due to problems with design and quality control. This presentation will focus on two of the most common types of building failures – structural and water infiltration. Case studies will be reviewed by walking through the investigative process on several failures from causation to remediation. Additionally, the role of the Expert Investigator in litigations will be explored with an emphasis on how this specialized work differs from 'engineering design'.

Greg is a Registered Professional Engineer in PA, NJ, DE, and MD with 23 years of experience in Structural and Architectural Engineering. He has been the Engineer-of-Record on commercial, industrial, institutional, and condominium structural projects and façade restorations. He has also been the Expert Investigator on numerous structural failures and water infiltration claims and litigations. Greg is an approved Demolition Special Inspector in the City of Philadelphia and a Certified Residential and Commercial Roofing Inspector. Greg earned his Bachelor of Architectural Engineering degree from the Pennsylvania State University. He currently leads the Forensic Engineering Department at Barry Isett and Associates, Inc. serving building owners, insurance companies, and attorneys.

Session Abstracts - Thursday

10:30 am – 12:00 pm | 1.5 PDH

Safety/Engineering/Construction

Bernie Telatovich

10:30 am – 12:00 pm | 1.5 PDH

South Valley Parkway Update

Heather Heeter
Borton Lawson

The South Valley Parkway Project SR 3046 is comprised of a new roadway alignment totaling 2.5 miles, one split interchange, five single-lane roundabouts and one double-lane roundabout to the South Valley Region in lower Luzerne County, PA. The project included construction of a six-span two-lane bridge, carrying the parkway over Nanticoke Creek, Dundee Road and State Route 29, a single span two-lane bridge, carrying Main Street over State Route 29, and seventeen stormwater management basins which facilitated the separation of onsite stormwater and offsite watercourses to the highest standard.

Safety and traffic congestion were the driving forces for PennDOT Engineering District 4-0's purpose and need to move forward with the project. Safety improvements realized by adding roundabouts has eliminated the need for signalized intersections in the 2.5-mile stretch, decreasing the chance of severe crashes. In addition, the project utilized what was otherwise abandoned coal land and transformed it into a viable traffic calming solution for the surrounding community. The new parkway connects Hanover Township with the City of Nanticoke, alleviating a majority of the congestion to residents along State Route 2008 (Middle Road) due to Luzerne County Community College Campus commuters.

Through the joint effort of Borton-Lawson, PennDOT District 4-0, and Kriger Construction, the project is in good standing at approximately 90% complete and over a year ahead of schedule. Not only will it create safer driving conditions and reduce traffic burden for local residents, it will provide accommodations for future economic development.

10:30 am – 12:00 pm | 1.5 PDH

Commissioning & Start Up of Renovated Buildings/Mechanical Systems

Al Dezubay, PE
Dezubay Engineering Services

This presentation will cover the air and water balancing and commissioning of mechanical systems in commercial and institutional renovation projects. Attendees can expect to have a working knowledge of how proper air and water balances effect energy efficiency and occupant comfort. It will discuss the effects of air handling equipment and duct design on building performance and how air and water flow it can be measured and controlled. The limits of good air flow measurement will be examined along with and how the commissioning process is used to verify system operations.

Alex Dezubay is the principal of Dezubay Engineering Services of Bethlehem PA. He has his BSME from Penn State and has 40 years of industrial and construction experiences. He is a 3rd generation PE.

Session Abstracts - Thursday

1:30 pm - 2:30 pm | 1.0 PDH

Document Management and Discovery – How Documents and Emails Are Used in Litigation

Richard J. Davies, Esq.
Milber Makris Plousadis & Seiden, LLP

Cases are decided based upon evidence, and that evidence must be in a form that can be heard (e.g. testimony) or seen (e.g. a writing). And so it is true that what you say can be used against you in a court of law – whether it comes out of your mouth or from your keyboard. A corollary to that point is, what you do not say – what you do not document – can be used against you. Consequently, knowing whether, when, and how to document your thoughts and actions can have a significant impact on the outcome of a legal dispute involving you. This course will help you to understand why that is so, and to determine whether, when, and how you document your project communications.

Mr. Davies' practice focuses on the representation of engineers, architects, and other design professionals, as well as manufacturers of complex products. He regularly acts as their consultant and advocate, particularly in respect to risk management, by negotiating their contracts, addressing potential claims on projects, and regularly defending them in actions and proceedings initiated against them. For example, Mr. Davies regularly handles cases involving: errors and omissions affecting structural, mechanical, plumbing and fire protection systems, as well as accessibility (claimed violations of ADA, FHA, state or local accessibility requirements) in industrial, commercial and residential buildings; schedule impact (e.g. delay, acceleration and inefficiency) and extras claims; licensing prosecutions; and serious personal injury/wrongful death claims arising from construction projects.

1:30 pm - 2:30 pm | 1.0 PDH

Bicycling Beyond the Big Cities: Enhancing On-Road Cycling in Small Towns and Suburban Communities

Benjamin Guthrie, PE
Traffic Planning and Design, Inc.

While much attention is focused on transformative bicycling planning and projects in big cities (Pittsburgh, Philadelphia, New York, Washington D.C.), small towns and suburban communities across Pennsylvania are improving their bicycling networks and related amenities. This session will review the latest design guidance from FHWA and explore how these guidelines can be applied to suburban communities in Pennsylvania. The session will include several case studies that illustrate how this design guidance can be applied here in Pennsylvania, including recently implemented bicycle improvements in two Montgomery County communities.

Mr. Guthrie serves as a Project Manager at Traffic Planning and Design, Inc. in the Lehigh Valley office. He has completed work on a wide range of multimodal transportation projects, working with Pennsylvania communities to develop transportation solutions that meet the needs of all roadway users. His project experience includes bicycle connectivity studies, multimodal corridor plans, roadway safety audits, trail plans, pedestrian safety studies, and complete streets projects. Over the past several years, Ben has helped communities in our region plan for a more walkable future by integrating the needs of pedestrians and bicyclists into future transportation plans. Mr. Guthrie has 11 years of experience and earned his M.S. in Transportation Engineering from Villanova University, as well as his B.S. in Civil & Environmental Engineering from Bucknell University.

1:30 pm - 2:30 pm | 1.0 PDH

Net-Zero Design Principles

Howard Alderson, PE
Alderson Engineering, Inc.

A presentation on how to achieve a NZEB commercial building, including a case study.

Mr. Alderson is the Principal of Alderson Engineering, Inc. of Southampton, Pennsylvania. He is frequently a guest speaker at various conferences, with expertise in the area of Ground Source Heat Pump Systems. His previous projects range from Geothermal Projects to Healthcare Facilities, Office Buildings, Industrial Projects, Retail Projects, Hotels and Motels to Residential Projects.

Session Abstracts - Thursday

2:45 pm - 3:45 pm | 1.0 PDH

Accelerated Bridge Construction: I-78 Bridge Underclearance Project and SR 29 Over Indian Creek Bridge Replacement Project

Brian K. Brawand, PE, CBSI
Alfred Benesch & Company

The presentation will provide a brief overview of accelerated bridge construction (ABC) and present case studies on two local PennDOT ABC projects, the I-78 Bridge Underclearance Project and SR 29 over Indian Creek Bridge Replacement Project. The I-78 Bridge Underclearance Project replaced six bridges over Interstate 78 in Berks County in an average duration of 45 days. The SR 29 over Indian Creek Bridge Replacement Project replaced a bridge over Indian Creek in Lehigh County in 7 days. Other Benesch ABC projects which utilized various ABC technologies will also be presented.

Brian Brawand, P.E., CBSI works as a Project Manager within the Structural Group of the Lehigh Valley office of Alfred Benesch & Company. Over the past 20 years, Brian has worked on numerous highway and bridge projects involving all aspects of structural engineering related to transportation related structures. Brian is a licensed Professional Engineer in Pennsylvania, Delaware and Maryland, as well as, a PennDOT Certified Bridge Safety Inspector (CBSI). Brian graduated from the Pennsylvania State University with a Bachelor of Science and Master of Engineering degree in Civil Engineering in 1996 and 1997, respectively. Brian has been an active member of the American Society of Highway Engineers (ASHE), East Penn Section and currently serves on the Board of Directors.

2:45 pm - 3:45 pm | 1.0 PDH

Variable Refrigerant Flow (VRF) – Design and Applications

Bryan Overbeck, PE
Mitsubishi Electric

This presentation covers an overview of VRF in commercial building design and its benefits, including basic design considerations for VRF, equipment layout, diversity, ventilation and refrigerant management. The presentation culminates with a case study review that centers on a recent commercial application in the Northeast.

Bryan Overbeck is a Commercial Regional Manager for Mitsubishi Electric. He is a licensed Professional Engineer in both Pennsylvania and New Jersey. The Villanova graduate has over 20 years of engineering experience in a variety of industries including HVAC, nuclear power, pharmaceutical and naval shipbuilding.

2:45 pm - 3:45 pm | 1.0 PDH

Session Abstracts - Thursday

4:00 pm - 5:00 pm | 1.0 PDH

Transmission Pipeline - Providing Marcellus Shale Natural Gas to the Wyoming Valley

William Karr, PE
UGI Utilities

This presentation will provide an overview of the natural gas industry, specifically focused on utility-scale gas distribution within Pennsylvania. In 2014, UGI installed a large diameter pipeline and multiple pressure control stations to strengthen the reliability of their distribution systems in Northern Pennsylvania. The installation of these facilities also increased the Company's ability to deliver locally sourced Marcellus Shale gas to Pennsylvania customers. Through discussion of this major gas infrastructure project, the presentation will focus on topics such as: natural gas safety, pipeline design, pipeline flow, natural gas distribution design, and project management. The goal of this presentation is to provide insight to the natural gas utility industry and discuss the challenges presented to the engineers who work there.

William is a Professional Mechanical Engineer working for UGI Utilities as a Sr. Manager of Area Engineering.

Having worked in the natural gas distribution industry for 8 years, William works to safely and reliably deliver energy to more than 700,000 customers in Pennsylvania and Maryland.

He graduated from Lafayette College with a Bachelor of Science in mechanical engineering and is currently a masters candidate studying at Lehigh University.

4:00 pm - 5:00 pm | 1.0 PDH

PennSTART - Pennsylvania Safety Transportation and Research Track

Joseph Sutor PE, Pennsylvania Turnpike Commission
Troy D. Truax, AICP, Michael Baker International

PennSTART is a multi-modal transportation technology research, testing, and safety training facility initiative between the Pennsylvania Department of Transportation, Pennsylvania Turnpike Commission, the Penn State University.

Joe Sutor has been with the Pennsylvania Turnpike Commission since 2004 and currently works as the Planning and Environmental Manager in the Engineering Department. Joe's 31 years of engineering experience includes time with Lower Paxton Township, Ephrata Borough and Grinnell Corporation. He is a graduate of the University of Pittsburgh at Johnstown with a Bachelor of Science degree in Civil Engineering and has a Master of Public Administration Degree from Penn State Capital Campus. Mr. Sutor is a Registered Professional Engineer in the Commonwealth of Pennsylvania.

Troy Truax is a Senior Associate specializing in land use and transportation planning, emergency and incident management, and business continuity/continuity of operations planning. Troy is a certified planner with over 20 years of professional experience in both the private and public sectors that includes serving as Fulton County, PA's Director of Planning, Emergency Management and 911. Troy is currently involved with supporting the Pennsylvania Turnpike Commission's strategic planning, long-range planning, continuity of operations planning, and Transportation Incident Management (TIM) programs.

4:00 pm - 5:00 pm | 1.0 PDH

Behind the Scenes Tour - Wind Creek Bethlehem

PSPE guests are invited to participate in a behind the scenes tour of Windcreek Bethlehem. The tour focus will be on four areas: Boiler room, chiller room, electrical room, and mechanical floor (air handlers).

There is a limit of 40 participants for this tour. Conference registration is required and pre-registration for the tour is also required.

Session Abstracts - Friday

8:30 am - 9:30 am | 1.0 PDH

Bloomsburg Flood Risk Management Project

David Wieller, PE

Borton-Lawson Engineering

In 2011, Tropical Storm Lee flooding threatened two key employers in the Town of Bloomsburg. Borton-Lawson proposed a cost saving design alternative for the Bloomsburg Flood Risk Management System to be designed and constructed in less than three years. This aggressive schedule presented challenges related to permitting the four new pumping stations, wetland mitigation, and the U.S. Army Corps of Engineers Joint Permit for the new flood control system on the Susquehanna River. Performing environmental due diligence early and hosting frequent meetings with regulatory agencies, the U.S. Army Corps of Engineers Section 105/404 authorization was obtained in nine months.

Design complexities included extensive geotechnical investigations, engineering of multiple floodwall and levee types, 2,300-feet of subsurface slurry wall 25-feet in depth, four pumping stations, eight closure structures, major roadway reconstruction, major utility relocations prior to construction, wetland mitigation, over 50 property takes and easements, and testing for hazardous materials throughout construction. There were no prior commitments for right-of-way over its length of 5,650-feet.

David Wieller is Water & Municipal Regional Leader for Borton-Lawson Engineering in Bethlehem, PA. He is a licensed Professional Engineer in Pennsylvania and Iowa and has 17 years' experience in a wide variety of water-related projects including drinking water, wastewater, stormwater, and flood risk mitigation infrastructure.

8:30 am - 9:30 am | 1.0 PDH

Lifecycle of a Roadway & Bridge Design

James Carr, PE and Mike Barkasi

Bentley Systems

Advancing an infrastructure project from the planning stage into Conceptual and through Final Design can take on many shapes and sizes. Specifically, when seeking transportation improvements, methods and workflows to achieve a deliverable(s) that can be taken into construction can take on many different paths. From a technology standpoint, advancements have been made to supplement and offer alternative workflows in order to achieve contract requirements and construction to unfold. In this session a perspective that touches on some workflow alternatives and some associated technology tools that can alter the way roadway and bridge design is being conducted.

James Carr is a Civil and Bridge Product Consultant at Bentley Systems, Inc. With over 7 years in the industry, James has a broad range of experience in land development consulting, municipal, water resources and environmental engineering and regulatory permitting. James's expertise ranges from design through construction for residential/ commercial sites, roadway and municipal stormwater regulation programs and improvement projects.

Mike Barkasi is a Senior Application Engineer currently on the Reality Modeling Team and previously on the Civil Design Team at Bentley Systems. Mike has been working at Bentley Systems for 14+ years. Mike has worked on many infrastructure related projects and scenarios and has helped advance the utilization of reality modeling in design workflows for many in the engineering and architectural community. Prior to his Bentley experience, Mike's work experience was as a GIS Analyst for 6+ years at LTL Consultants.

8:30 am - 9:30 am | 1.0 PDH

LED Lighting -Tunable White and Color Changing Technologies

James Yorgey, PE

JmY Solutions LLC

This CEU will take participants through the different types of light spectrum control, discuss the color tuning abilities of tunable white fixtures and their design challenges and conclude with how you can reduce risk on color tuning projects.

Learning Objectives - At the end of this course, participants will be able to:

- Describe the fundamental categories of spectrum control with LEDs.
- Analyze the color tuning features of tunable white fixtures.
- Identify challenges with tunable white and full spectrum color control.
- Review the ways to mitigate risks when specifying LED Lighting.

Jim Yorgey is the principle with JMY Solutions. He is retired from Lutron as Technical Applications Manager, and held positions in quality control, engineering, marketing, and sales.

Jim's current role as a consultant provides technical support to manufacturers regarding lighting and lighting controls.

Jim is a member of IEEE, PSPE and IES. He serves on various IES committees and the ASHRAE/IESNA 90.1 Committee. He is a board member and past-chair of the National Lighting Bureau.

Jim has a Bachelor of Engineering Technology Degree from Penn State, is a registered Engineer (PE) in Pennsylvania and is lighting certified (LC).

Session Abstracts - Friday

9:45 am - 10:45 am | 1.0 PDH

Dam Rehabilitation Case Studies in Pennsylvania

Jennifer Kowalonek, PE, LEED AP
Alfred Benesch & Company

This presentation will include the review of several successful dam rehabilitation projects in Pennsylvania completed in the last 10 years. The presentation will review alternatives, design, funding, permitting and construction of the projects. Each project case study will also include the discussion of obstacles to overcome in the various stages of development whether it was alternatives, cost or construction, which make the project unique.

Jennifer M. Kowalonek, P.E., LEED AP is a Project Manager with Alfred Benesch & Company. Jennifer has been with Benesch for 22 years involved in Environmental and Civil Department work ranging from Water Resources to Transportation Projects. She has served as Project Manager on various dam rehabilitation projects throughout Pennsylvania. Jennifer received a Bachelor of Science in Civil Engineering from Drexel University in Philadelphia, Pennsylvania in 1998 and a Master's of Science in Civil Engineering from Villanova University in 2019. Jennifer serves on the Drexel University College of Engineering Alumni Association Alumni Association – Board of Directors. She has been a Registered Professional Engineer in the State of Pennsylvania since 2003 and is designated as a LEED AP in Design and Construction since 2009. Jennifer is an active member of the Pennsylvania Society of Professional Engineers, National Society of Professional Engineers, and American Society of Dam Safety Officials.

9:45 am - 10:45 am | 1.0 PDH

Pennsylvania Design/Build Experiences

John A. Nawn, PE, F.NSPE
Fleisher Forensics

In 2008, the Pennsylvania Department of Transportation (PennDOT) along with other agencies increased use of design-build as a project delivery method primarily as a means to shorten project schedules and be able to deliver completed projects in a more rapid method.

John A. Nawn, P.E. has provided forensic engineering, accident reconstruction and expert witness services since 1994 in matters involving highway and traffic engineering, including intersections; urban and rural roadways; interstate highways; parking lots; signage, pavement marking and traffic controls; codes and zoning requirements; sidewalks and crosswalks; public utilities including sanitary sewer, storm sewer and water mains. With 25 years experience prior to joining Fleisher Forensics, Mr. Nawn served in leadership roles at a number of local civil engineering consulting firms including serving in such roles as Executive Vice President, Vice President, Chief Engineer and Managing Partner. Responsibilities have included the design, engineering and management of various traffic, transportation, highway, bridge, mass transit, railroad, environmental, municipal and construction engineering projects.

Mr. Nawn earned a Bachelor and Master of Science Degree in Civil Engineering from Drexel University. He is a licensed professional engineer in 8 states. In 2011, he was recognized as Pennsylvania Engineer of the Year.

9:45 am - 10:45 am | 1.0 PDH

Electricity for Non Electrical Engineers

Al Gruenke, PE

A basic understanding of electricity is essential for virtually all Engineering disciplines. In the increasingly complex world of present day processes, it is sometimes necessary to review the basics.

It is necessary for non-Electrical Engineers to be cognizant of terms and principles of Electrical Engineering, so that electrical equipment is correctly applied, and results understood. Such knowledge is important for safety of personnel and equipment.

Alfred Gruenke PE has a degree in Electrical Engineering from Lafayette College, and an MBA from DeSales University. He has been involved with the cement industry since 1970, in varying capacities. In 1981 he joined Fuller/FLSmith in Bethlehem, PA, as an Electrical Engineer in the Field Service Department. In this capacity he has traveled to over forty countries installing, commissioning, and servicing Fuller/FLSmith supplied equipment.

Al is presently retired. His last position was General Manager of Field Installation for FLSmith.

Session Abstracts - Friday

11:00 am - 12:00 pm | 1.0 PDH

DEP and DRBC... Navigating the Water Quality Permitting Maze

Angelika Forndran, PE
Cowan Associates, Inc.

Everyone expects to get healthy water from a faucet and be able to flush the toilet, but what do we need to know about the rules and regulations that ensure this will happen? The state agencies, such as PA Department of Environmental Protection (PADEP) or NYS Department of Environmental Conservation (NYSDEC) have the responsibility to monitor the design and operation of water and wastewater treatment facilities through a permitting process. The Delaware River Basin Commission (DRBC) and similar commissions such as the Susquehanna River, have standards and approval processes for the interstate river basins. This presentation will provide a brief overview of the permitting agencies interrelationships and the structure of the permitting processes to assist engineers in their work. Though not every engineer is responsible for obtaining permits, every project that involves water -coming and going – is part of a permitted process.

Angelika Forndran, P.E. has over 45 years' experience in wastewater, water supply and water quality science and engineering from NYC DEP to various consulting firms in Ohio and Pennsylvania. Project experience includes design and operations from sewage collection systems to treatment plants to source water protection and stream and river water quality monitoring. Ms. Forndran has a B.E. in Civil Engineering from the Cooper Union, NYC and M.S. in Environmental Engineering from Manhattan College, NYC. She is licensed in New York State and Pennsylvania. Ms. Forndran is currently Director of Environmental Engineering at Cowan Associates, Inc. in Quakertown, PA.

11:00 am - 12:00 pm | 1.0 PDH

Lifecycle of a Site Design

James Carr, PE and Mike Barkasi
Bentley Systems

Converting land into construction-ready industrial, commercial, or housing sites has become increasingly more reliant on design firms for project feasibility, preliminary and conceptual budgeting. Whether a project is speculative or purpose driven, being able to identify design alternatives that are in sync with the owners design intent is critical to a successful project. In this session discover how new site design and analysis applications can help elevate the industry to new technical levels and optimize site layout.

James Carr is a Civil and Bridge Product Consultant at Bentley Systems, Inc. With over 7 years in the industry, James has a broad range of experience in land development consulting, municipal, water resources and environmental engineering and regulatory permitting. James's expertise ranges from design through construction for residential/ commercial sites, roadway and municipal stormwater regulation programs and improvement projects.

Mike Barkasi is a Senior Application Engineer currently on the Reality Modeling Team and previously on the Civil Design Team at Bentley Systems. Mike has been working at Bentley Systems for 14+ years. Mike has worked on many infrastructure related projects and scenarios and has helped advance the utilization of reality modeling in design workflows for many in the engineering and architectural community. Prior to his Bentley experience, Mike's work experience was as a GIS Analyst for 6+ years at LTL Consultants.

11:00 am - 12:00 pm | 1.0 PDH

Fuel Security

David Souder

Session Abstracts - Friday

1:15 pm - 2:15 pm | 1.0 PDH

Philadelphia Floodplain Development and Regulations

Joshua Lippert
City of Philadelphia

The goal of the Floodplain Training Session is to provide you with a better understanding of the opportunities and challenges dealing with floodplain development. The presenter of the session will provide an overview on NFIP (National Flood Insurance Program) and current Philadelphia floodplain regulations. An overview about the City's review requirements and process will be detailed with practical resources and best practices.

Learning Objectives:

- Learn the background to the NFIP and floodplain regulations
- Explore the floodplain zoning and building code regulations for the City of Philadelphia
- Education on guides and resources related to floodplain development
- Process for Zoning and Building permits

Josh is a Certified Floodplain Manager at City of Philadelphia, where he works collaboratively among many departments to develop, coordinate, train, implement, and maintain all facets of the City's floodplain management program. In this role, he leverages his expertise in landscape architecture, planning, and design to build capacity among City departments. He has past experience as a Senior Environmental Planner at the City of Pittsburgh Planning Department in park planning, stormwater, floodplain management, and environmental planning. He received his Bachelors of Landscape Architecture from the Pennsylvania State University.

1:15 pm - 2:15 pm | 1.0 PDH

Replacement of Tram MG Sets with Variable Speed Drives at the Gateway Arch

Harve Hnatiuk, PE, F.NSPE
Maida Engineering

Get a behind-the-scenes look at the Gateway Arch, and discover how 50-year-old arch trams that take visitors to its observation deck 630 feet above the ground have been updated with 21st century technology. Learn how site-related challenges were overcome with synergetic team building measures. We will describe the justifications for replacing the trams' motor-generator (MG) sets and DC motors with variable-frequency drives and AC motors. Over the course of this session, we will discuss design and engineering challenges associated with this complex project, and the creative solutions that were implemented.

Harve D. Hnatiuk, PE, F. NSPE is Vice President of Maida Engineering, Inc. in Philadelphia, PA. He has been Maida's Project Manager for several projects at the Gateway Arch in St. Louis, MO. He is a graduate of the University of Pennsylvania (BSEE) and a recipient of Penn's Alumni Award of Merit. He is a registered professional engineer in 12 states. Harve served as NSPE President in 2014-15 and PSPE President in 2006-07.

1:15 pm - 2:15 pm | 1.0 PDH

Smart Cities

Glenn A. Pritchard, PE
PECO

With the advent of the Internet of Things and ever prevalent communications networks, urban communities are now exploring how they can best use these technologies and the data they generate to create Smart Cities. This presentation will explore the many facets that are being integrated to deliver smart solutions with will improve day-to-day life in our cities. Several use cases will be explored throughout the discussion. Examples include Smart Energy, Efficient Buildings, MicroGrids, Intelligence & Analytics and Community Solutions.

Glenn Pritchard is currently the Manager of Advanced Grid Operations and Technology for PECO's Smart Grid/Smart Meter system. PECO's Smart Grid consists of 2.3M electric and gas meters and over 2,000 Distribution Automation devices. Pritchard graduated from Clemson University in 1990 with a B.S. Degree in Electrical Engineering. He is a registered professional engineer in Pennsylvania. He has been with Exelon/PECO in Philadelphia for twenty-seven years where he is responsible for developing new applications that leverage the Smart Grid, AMI Systems and metering data.

Other areas of experience include distribution & transmission engineering, substation automation and communications. Pritchard specializes in finding new applications of existing and emerging technologies.

Beyond his work at PECO, Pritchard has taught numerous classes and frequently presents at the key industry venues, including Distributech, EEI and IEEE. He has authored numerous papers on Smart Grids, AMI systems and the use of the data generated by such platforms.

Session Abstracts - Friday

2:30 pm - 3:30 pm | 1.0 PDH

Potable Water Harvesting from Unconventional, Non-potable Water Sources

John R. Ackerman, PE, PG, BCEE, F.NSPE
Twin Oaks Water Systems, Inc.

The presentation offers insights into a new water harvesting process able to economically obtain water from unconventional non-potable sources. An in-depth description of pilot testing of hypersaline product water from natural gas wells in North-Central Pennsylvania will also be included. Additionally, descriptions of additional proposed process applications from the other unconventional water sources will be detailed.

Mr. Ackerman, president of Twin Oaks Water Systems, Inc., has over 40 years of environmental engineering experience. Prior to his current company, he worked with various consulting engineering firms as well as CAN DO, Inc. and Hazleton Pumps. He serves and has served on numerous advisory commissions and boards, both locally and statewide. He served as PSPE President (2000-2001) as well as chairing the Title Pursuit Task force and co-chaired the Engineers-Geologists Task Force.

Mr. Ackerman holds the title of "Diplomate" from the American Academy of Environmental Engineers and was named a "Fellow" of the National Society of Professional Engineers in 2005 and his innovative RainMaker water harvester was awarded "Best Value in Green Engineering" by the American Society of Civil Engineers at their 2017 Innovation Contest.

2:30 pm - 3:30 pm | 1.0 PDH

Foamed Glass Lightweight Aggregate (FG-LWA)

Craig Calabria, Ph.D., PE
Aero Aggregates

This course presents the topic and discusses the application of Foamed Glass Lightweight Aggregate (FG-LWA), which is a product created using recycled glass and other recycled additives. A brief history of foam glass insulation will be given as well as a discussion and description of what foamed glass aggregates are. The glass processing including cleaning and milling will be discussed as well as the final product material properties. Specific examples of foamed glass engineering applications and safety aspects will be identified and presented.

Dr. Calabria has more than forty years of experience in the construction industry and engineering consulting. He earned his Bachelor and Master degrees in geotechnical/geo-environmental engineering from Drexel University, Philadelphia, USA, and Doctorate in Civil Engineering] from University of Salford, Manchester, UK.

2:30 pm - 3:30 pm | 1.0 PDH

UAV Utilization by Electric Utilities

Trevor Siegfried, PE
PPL Electric Utilities

This presentation will review a history of UAV and development of these devices as well as an overview of current FAA regulations. The primary focus of this presentation will be a review of the use of this technology by PPL Electric Utilities, with an overview of multiple use cases and deployment strategies.

Trevor Siegfried, PE is the Sr Project Manager for PPL Electric Utilities' cellular attachments, fiber optic agreements and unmanned aerial vehicles. Trevor has worked in areas of distribution and transmission operations, distribution planning, research and development, outage management and transmission system reliability at PPL Electric Utilities. Trevor received a BSEE degree from Pennsylvania State University, is a registered Professional Engineer in the State of Pennsylvania and is a senior member of IEEE and the IEEE Power and Energy Society.

Session Abstracts - Friday

3:45 pm - 4:45 pm | 1.0 PDH

Luzerne County Emergency Response to Tornado
David Elmore, Deputy Director/Operations and Training Officer
Luzerne County Emergency Management Agency

On June 13, 2018, Wilkes-Barre Township in Luzerne County experienced an EF2 tornado that damaged or destroyed 23 businesses, several structures, and numerous vehicles that resulted in property and retail damage in the millions. Due to the late hour of the event, only six individuals suffered minor injuries during the incident, no fatalities. Luzerne County EMA staff responded to the scene as well as activated our Emergency Operations Center for a period of 38 hours. They provided ICS structural command assistance, continued resource support to the incident commander, completed initial damage reports, and safely escorted the Governor and his staff, PEMA officials, and the National Weather Service through the debris field for damage assessment and general inspection. The following presentation includes unpublished photos and videos from the day after and from recent months, as they recorded the aftermath for damage assessment and completed projects one year later for documentation and historical purposes. For some, recovery efforts continue to this day, with several businesses closing their doors forever, while other national franchises reopening within months of the event.

David Elmore, Deputy Director/Operations and Training Officer for Luzerne County Emergency Management Agency, is a former active duty engineer with the U.S. Army, a retired state corrections officer, and a past municipal emergency management coordinator, radiological officer, and volunteer firefighter/EMT. He is a graduate of Luzerne County Community College's Paramedic degree program and is a former Life Flight aviation communications specialist. Currently, Mr. Elmore is an instructor for PEMA and the state fire academy, teaching emergency management and radiological emergency response training to EMA staff around the state. Mr. Elmore, originally from Allentown, currently resides in Shickshinny, PA with his wife Elaina, is a Distinguished Eagle Scout and lifelong scout leader and spends his free time fishing and teaching COPE and climbing activities to scouts of all ages.