

Engineering Michigan's 2017

MSPE Annual Conference

Future



4
MAY
5

Emerging Technology

MCity Tour

Alternative Sustainable Power

The Business of Doing Business

Innovations for Urban Systems

KENSINGTON HOTEL
ANN ARBOR, MICHIGAN

Schedule At A Glance

Day 1 - May 4

9:00 AM - Noon **Board of Directors Meeting**

9:30 AM - 12:30 PM **Mcity Tour**

12:45 - 1:15 PM **Meeting Registration**

1:15 - 4:45 PM **Educational Sessions**

- Emerging Technologies
- Innovations for Urban Systems

5:00 - 7:00 PM **Exhibitor Showcase**

- Cocktail Reception

7:00 - 10:00 PM **Networking Events**

- Revel & Roll Networking Event (Sponsored by Jackson Chapter)
- Government Engineers Networking Event

Day 2 - May 5

7:00 - 9:00 AM **Exhibitor Showcase**

- Casual breakfast

9:00 AM - Noon **Annual Meeting**

- Governor's 21st Century Infrastructure Report
- NSPE Future of the Profession Task Force
- Legislative Update
- Business Meeting

Noon - 1:15 PM **Awards Luncheon**

- Engineer of the Year
- Young Engineer of the Year
- Presentation of Fellows
- Chapter Awards
- Induction of Officers

1:15 - 4:45 PM **Educational Sessions**

- Alternative Sustainable Power
- The Business of Doing Business

Mcity Tour

Take a special tour of Mcity and see what is happening at this unique test facility for evaluating the capabilities of connected and automated vehicles and systems.

The presentation will focus on the Michigan DOT's activities related to connected and automated vehicles. This includes discussion on the design and deployment of connected vehicle infrastructure and the development of vehicle-to-infrastructure applications for safety and mobility. The presentation will also discuss Michigan DOT's support of automated vehicle testing and operation on Michigan roads, and the potential impact automated vehicles will have on a road operating agency in the future. An overview of current Michigan automated vehicle regulations will also be covered.

Attendees will travel from the Kensington Hotel to Mcity via motorcoach. After the session, attendees will be transported back to the hotel for lunch prior to the beginning of the afternoon conference session. This event is limited to 30 participants and will be filled on a first-come-first-served basis.



Presenter: Collin Castle
Connected Vehicle Specialist, MDOT

2 PDH
Additional fee of \$49 is required for this event. (Includes transportation and lunch)



Conference Location



The *Engineering Michigan's Future* Conference will be held at the Kensington Hotel in Ann Arbor. The Kensington Hotel on State Street features newly revitalized guest rooms where you will enjoy all the comforts of home and local Ann Arbor traditions. Classic guest rooms feature amenities such as marble baths, Beekman 1802 bath product, flat panel televisions and Bluetooth room phones with diversified device charging capabilities will make your stay with us comfortable and memorable.

A block of rooms is being held for the conference. Just mention MSPE to get the special rate of \$139/night. The special rate is available the night before and night after the conference if you want to extend your stay in Ann Arbor.

For hotel reservations, [Click here](#) or call 734.761.7800.



Governor's 21st Century Infrastructure Report (1 PDH)

David B. Behen, DTMB Director and Michigan CIO



David B. Behen holds dual roles as director of the Department of Technology, Management and Budget and as Michigan's chief information officer. In these capacities, he is responsible for setting strategic direction and ensuring timely delivery of state services.

As director of DTMB, Behen leads efforts to provide the full range of information technology and communications, facility management, financial, procurement, fleet and retirement services, among others. As state CIO, he directs development of IT resources to meet the growing needs of Michigan's citizens.

"Today's technology provides us with tools to reinvent government," Behen said. "The growth of online resources provides our citizens and businesses with the 24/7 service they have come to expect."

Behen will discuss the Governor's 21st Century Infrastructure Report and what it means for the future of our State.

Behen holds a seat on Governor Rick Snyder's Cabinet, advising the governor on technology investments and implementing innovative IT programs.

NSPE Future of the Profession Task Force (1 PDH)

Kodi Jean Verhalen, P.E., Esq., Fellow NSPE



The NSPE Future of the Profession Task Force is supporting the development and awareness of changes to the practice of professional engineering. Using *The Future of the Professions*, by Richard and Daniel Susskind, among other resources, as well as input from within the industry, this task force will identify areas in which professional engineers must be prepared to change for success and sustainability moving forward. Conference attendees will gain an understanding of the importance of this issue and early insight into the solutions that will be developed as a result to the

findings, especially those that relate to the individual practicing engineer and our relationship with the public.

Kodi Jean Verhalen, P.E., Esq., F.NSPE is the 2016-17 President of the National Society of Professional Engineers (NSPE), the youngest Professional Engineer to advance to this position since the Society's founding in 1934.

Ms. Verhalen is an associate in the Energy Section at the law firm of Briggs and Morgan, P.A. where she works with many Professional Engineers, Engineers-in-Training, and engineers on large energy infrastructure projects both from a regulatory and an environmental perspective. Prior to joining Briggs, she was an environmental engineer for a Minnesota electric utility company.

Keynote Speakers



The rest of the conference...

Vendor Showcase

Be sure to visit the Vendor Showcase while you are at the Conference! Vendors will be set up and ready to talk to you on Thursday evening at the conclusion of the educational sessions. The Vendor Showcase and cocktail reception will run from 5:00 to 7:00 PM.

The Showcase will continue on Friday morning from 7:00 to 9:00 AM. You can enjoy a casual breakfast while talking to vendors. Please plan to attend and check out all of their offerings!

Networking Events

During the conference, there will be two special networking opportunities for attendees. These events are a fun way to get to know your fellow engineers in a casual setting!

The first, sponsored by the Jackson Chapter, will be held at Revel and Roll Bowling Alley in Ann Arbor (<http://www.revelandroll.com>). With 26 lanes in the bowling alley, today's hottest adult arcade games, a top shelf food and drink selection in the entertainment sports bar, and Michigan's largest LED TV, Revel & Roll is the place to be! This is a chance to mingle with your peers in a casual, fun environment. There is a \$25 fee (includes dinner) to attend this event. Please register to attend on your registration form.

The second networking opportunity is for engineers working in government (state or local), that would like to meet others in similar roles. This event will take place at the conference hotel. If you are interested, please mark the appropriate box on the registration form. There is no fee for this event.

Both events will take place on Thursday evening, after the Vendor Showcase and Cocktail Reception.

Awards Luncheon

MSPE presents a number of awards annually, including the *Engineer of the Year*, *Young Engineer of the Year* and many Chapter awards. These awards, along with induction of new Fellows, will take place during the Awards Luncheon on Friday. This is an opportunity for members and chapters to be recognized for their dedication to MSPE and the field of engineering.



Emerging Technology (3 PDH)

Thursday, May 4, 1:15 PM to 4:45 PM

Practical applications of construction technology

Presenters: Michael James, *Project Director*
3D Imaging Services, Sister company of Andy J Egan Co.
Adam Gorlewski, *BIM Specialists*
Andy J Egan Co.

The presenters will provide a presentation discussing 3D Laser Scanning, 360 Imagery, BIM Layout/Surveying and other BIM Solutions. The presentation will discuss how these construction technologies are impacting our daily construction projects, and benefiting everyone involved. We will review the basics of how these technologies work in addition to exploring case study examples. The takeaways from this session will provide the attendees a better understanding of when and how to use this technology. Additionally, how contractors down the line use construction technology to validate engineered drawing verse actual field conditions.

BIM processes and benefits

Presenter: Mark R. Dyke, *Ferris State University*

We will take a look at various BIM process that are used to maximize the value of BIM and provide information to MSPE attendees on the details of those processes. Processes including 4-D scheduling, clash detection, facility management, visualization, and 5-D budgeting. A discussion on collaboration within the engineering profession and how BIM provides engineers, clients, and contractors the information needed to make well informed project decisions. We will also take a look at how the technologies of laser scanning and drones interact with the BIM process. The outcome of this presentation is a clear understanding of the various BIM processes and how they can be leveraged to provide the highest quality construction projects.

Commercial Drones- A look at the new regulations and applications for commercial use

Presenter: Ebiri Nkugba, *AET, A&P, BA, CFI-I, FOE, PMP, sUAS*
Solum Imaging

This presentation will further the conversation around sUAS deployment in Michigan by addressing some of the key aspects of the new regulations, potential benefits of sUAS to the engineering market, and addressing risk management topics in field deployment.



Innovations for Urban Systems (3 PDH)

Thursday, May 4, 1:15 PM to 4:45 PM



Asset Management - Innovative solution for urban systems

Presenter: Mark De Clercq, PE
City Engineer, City of Grand Rapids

This presentation will provide an overview to implementation of City-Wide Asset Management. For it is not perfect, each municipal approach will be different. The presentation will demonstrate the Grand Rapids journey and experience with asset management. The presentation will also dwell on “why asset management?” and the benefits of asset management to an organization. The importance on Level of Service will be discussed along with how Asset Management is integrated into a municipal’s Strategic and Performance Framework toward the themes of Triple Bottom Line plus Governance. There will also be a discussion on what roles the municipality and professional consultants have in achieving an organization’s asset management outcomes.



The power of web based GIS tools, West Michigan’s online GIS tools via a regional GIS (REGIS)

Presenter: Jason Moore, GIS Manager
Grand Valley Metro Council’s (GVMC) Regional Geographic Information System (REGIS)

Jason will be providing an overview of the unique collaborative GIS model that is Grand Valley Metro Council’s REGIS. A general summary of how the consortium is structured and guided by 19 local government organizations in the West Michigan area will be provided. The presentation will then focus in on the exciting new online GIS tools REGIS members have been utilizing with focus on local government engineers. For example REGIS has created a Utility Finder that provides a quick and easy way to call up engineering drawings while in the field or at the office. REGIS has also leveraged the power of ArcGIS Online to update data in the field. Demonstrations will be provided.



The Three P’s (Private Public Partnerships) and Envision Ada

Presenter: Steve Groenenboom, PE
President, Moore & Bruggink

Envision Ada is a \$120 million master plan for the redevelopment of the Village of Ada. The plan includes new and redeveloped streets, green spaces, riverfront, and new commercial and residential areas in the Village area of Ada Township. This presentation will review some of the unique funding challenges and partnerships formed between public and private entities that are enabling the master plan to become reality. This is a great example of how public private partnerships can be successful to fund municipal development and infrastructure

Alternative Sustainable Power (3 PDH)

Friday, May 5, 1:15 PM to 4:45 PM

Energy Storage – Current and future implications in keeping Michigan’s lights on

Presenter: Chuck Hookham, *Director, NBD Consumers Energy*

Energy storage (ES) alternatives are becoming increasingly available commercially, for applications ranging from electric vehicles and behind-the-meter microgrids to grid-tied solutions for frequency control and renewable energy smoothing. Michigan is home to the nation’s second largest ES system in the form of the Ludington Pumped Storage project, battery research is in vogue at multiple universities, and electric vehicle adoption is quickly expanding. However, select barriers including cost recovery and upfront capital cost uncertainty remain in-place. This presentation will offer a state-of-industry update and implications for our state’s future.

Pumped storage

Presenter: Matthew T. Ray P.E., P.M.P,
Senior Project Manager - Ludington Pumped Storage Overhaul/Upgrade Project

The Ludington Pumped Storage Plant owned by Consumers Energy and DTE Energy (CEC and DTE), and operated by CEC, uses Lake Michigan as the lower reservoir and the 27 billion gallon artificially constructed upper reservoir for pumped storage. The physical size and capacity of these units makes them among the largest pumped storage units in the world. The \$800 million project includes the overhaul and upgrading of 6 pump-turbine units at the facility and will increase the turbine capacity by 15% to 362 MW in generating mode while also adding significant pumping flow and efficiency. The site work for the first unit commenced in late 2013, with the commissioning tests for the first unit upgrade successfully completed in March, 2015 and the final unit forecast to be upgraded in early 2020. The capacity of new generator-motor was also upgraded from 325MVA to 455MVA or approximately 550,000 horsepower.

OE design considerations and their impact on constructed PV facilities

Presenter: Daniel Farmer
Director of OST Energy North America

This presentation will look at project development and site selection, equipment selection, site design considerations, and construction factors that impact the life of utility-scale solar PV facilities.

Grid modernization at Consumers Energy

Presenter: Raymond Klavon
Consumers Energy

Consumers Energy is pursuing aggressive electric system reliability improvements, energy efficiencies and operational flexibility to provide better service to 1.8 million customers in the state of Michigan. Grid Modernization is a key program in achieving these goals in conjunction with traditional system reliability investments. Additionally, Grid Modernization provides strategic benefits by accommodating distributed energy resources and customer-driven energy management.



The Business of Doing Business (3 PDH)

Friday, May 5, 1:15 PM to 4:45 PM



Standard of care and risk management consideration(s) when performing new, unique or innovative design(s) or specifying new technologies

Presenter: E. James Hamilton, P.E. Esq.
GAI Consultants

In our world of design and engineering, many “new, unique or innovative technologies” have limited track records in the real world. This presentation will discuss the engineer’s responsibility to analyze the pros and cons and identify prudent risk management techniques to use before specifying a “new, untested technology” with a limited track record or preparing a unique or innovative design.



Making good decisions to protect the taxpayers and increase value

Presenter: Ron Brenke, P.E.
Executive Director, ACEC-MI

Engineering our infrastructure requires knowledge, training and experience. When hiring a professional to design a bridge, water treatment facility, or public building an owner must evaluate the qualifications and experience of the firm or individual to make sure they have the proper education and experience for a specific infrastructure project. Furthermore, it is in the best interest of all parties to discuss a detailed scope of service and negotiate a fair and reasonable fee to reduce conflict, construction extras and overruns, and operational costs. This session will discuss the process to select a design profession that will lower an owners risk for failure and increase the opportunity for a successful project.



Generational Differences – How can we work better together?

Presenter: Karlene Belyea, MBA
Chief Executive Officer, Michigan Veterinary Medical Association (MVMA)

Did you know that Millennials outnumber Baby Boomers in the U.S.? They are also now the dominant generation in our workforce! Four generations are currently in the workplace and each has different values, causing communication challenges and conflicts. Significant problems can occur in a business when people from different generations fail to communicate effectively. This light-hearted and fun session will compare and contrast the values of the four generations, identify their differing feedback styles and offer strategies for more effective cross-generational communication.

Engineering Michigan's 2017 MSPE Annual Conference *Future*

Thursday, May 4 and Friday May 5, 2017
Kensington Hotel
3500 S. State Street, Ann Arbor MI 48018

Registration Fees

	through April 14	after April 14	My fees
Member	\$199	\$249	\$ _____
Non-member	\$249	\$299	\$ _____
Spouse/Guest	\$109	\$159	\$ _____
Mcity tour	\$49	\$69	\$ _____
Revel & Roll Networking Event	\$25	\$35	\$ _____
		Total due	\$ _____

Attendee Information

Please complete one form per attendee.

Name: _____ Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ e-mail: _____

Special dietary needs: _____

Special Events (please check if you would like to attend)

- Mcity Tour (additional fee)
- Revel & Roll Networking Event (Sponsored by Jackson Chapter - additional fee)
- Government Engineers Networking Event

Payment Information

Total \$ _____ Check payable to MSPE enclosed

Credit Card*: Mastercard Visa Discover American Express

Card No. _____ Exp. Date: _____

Signature: _____ CVV: _____

*If paying by credit card, please make sure the address you provide is the same as the credit card billing address.

Cancellation Policy

If received in writing (email is acceptable) at least 10 business days before the conference begins, you will be refunded your registration fee after a \$50 administrative charge. Cancellations not received in writing by the date required will not be eligible for a refund. No-shows will not be refunded. Substitutions may be made at any time. The difference between the member and non-member price will apply if a non-member replaces a member. All refund requests must be submitted in writing to the MSPE office, 215 N. Walnut Street., Lansing, MI 48933; or email at mspe@michiganspe.org

Sponsorship Opportunities

If you would like to be an event sponsor, you can choose one of the following options. All sponsors will be recognized in the conference program as well as signage throughout the conference. Logos will be displayed if provided.

Platinum	\$1,000
Gold	\$750
Silver	\$500
Bronze	\$250

Yes! I would like to be a sponsor for the Engineering Michigan's Future Conference.

I am enclosing a check for \$_____ Please invoice me for \$_____

Company: _____

Contact: _____

Address: _____

email: _____

Phone: _____

If you are interested in participating in the Vendor Showcase, please contact Shada Biabani at the MSPE office at sbiabani@michiganspe.org or 517.487.9388.