

BSCES NEWS

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COPRI Boston/Emergency Preparedness

'Tis the Season—Emergency Preparedness in 2018

by Frances A. Bui, PE, Senior Project Manager, CDM Smith and Lauren Klonsky, PE, Senior Project Manager, CDM Smith (former Secretary and Chair of ASCE COPRI Boston Chapter)

Dependence on our nation's ports and coastal communities has never been greater. According to the National Oceanographic and Atmospheric Administration, the US counties that are adjacent to the coast contributed \$6.6 trillion to the nation's gross domestic product. By 2020, up to 134 million Americans are expected to reside in coastal communities. Concurrent with population growth and the existing dependency on coastal resources is an increasing risk of coastal flood events. Climate Central forecasts that by 2050 coastal flooding in the U.S. could cost the nation \$50 billion annually.

With this in mind and with the start of hurricane season on June 1, now is the time to incorporate lessons learned and best practices from the 2017 season's 1-2-3 punch of Hurricanes Harvey, Irma, and Maria, and the nor'easters that impacted New England with coastal flooding in 2018. The Federal Emergency Management Agency (FEMA) 2018-2022 Strategic Plan reinforces readiness in two of its three strategic goals: 1) Build a Culture of Preparedness; and 2) Ready the Nation for Catastrophic Disasters. As coastal flooding continues to increase, it will be



Lauren Klonsky facilitating a Community Resilience Building workshop meeting training held at CDM Smith

engineering professionals who will be tasked with helping communities prepare for impacts and mitigate coastal flood risks to the people and economies of our national shoreline.

Emergency preparedness and management considerations have a place in the engineering of our coasts, oceans, ports, and rivers. It is common to look at "emergency management" of coastal storm events in a four-part cycle: Prepare → Respond → Recover → Mitigate. While an effective approach to hazard reduction and emergency preparedness may not be strictly linear, these four

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President's Report

by Malek A. Al-Khatib, PE, Vice President, Louis Berger



My term as president of BSCES is coming to the end. It has been an honor and a pleasure serving you. I would like to thank members of the BSCES Board for their support and all the many other volunteers for their

time, hard work and dedication. Without volunteers, BSCES would not have flourished for the past 170 years or continue to flourish for the next century. I believe their involvement provides personal satisfaction as well as benefitting BSCES. This past year was intriguing. We set several challenging goals. Some goals were scheduled to

be accomplished this year. Others we established as long-term strategic goals that would be achieved over longer duration.

- We have succeeded in turning the corner on running annual deficit to self-sustaining operations. The draft annual financial report will not be available until late July. However, all indications are that we will break even, if not ending up with surplus this year. With this strong fiscal foundation, we are well positioned to begin profitability and improved sustainability.
- We established and succeeded in the creation of an improved BSCES email system. This enhanced communication with BSCES leaders,

UPCOMING EVENTS

BSCES Program Committee Sponsored Webinar July 11, 2018

ASCE and BSCES Sponsored Seminar July 19 – 20, 2018

Younger Member Group Community Service Event August 7, 2018

BSCES Program Committee Sponsored NHI Training October 16 – 19, 2018

BSCES Program Committee Sponsored NHI Training December 10 – 21, 2018

Further Details Inside



2017-18 Society Sponsors:



helps ensure a smooth transition to new leaders each year. You will be able to continue to communicate with the BSCES president at all times with the same email address, president@bsces.org

- We strengthened the partnership between ASCE and BSCES officers and volunteers. We established much stronger ties with ASCE and through enhanced collaboration, exchange of information, and ASCE services we are able to tap into many benefits, services, and resources ASCE provides.

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2017–18 BSCES Board of Government

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Boston Society of Civil Engineers



Emergency Preparedness

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Erosion along the Massachusetts’ coast during the 2018 nor’easter season (Source: https://fema-cap-imagery.s3.amazonaws.com/Images/9082/614361/IMG_6622_1e125f6b-3c9b-45e6-85ca-421d42823fc0.jpg)

components provide a framework to implement activities necessary to reduce our coastal risk.

Addressing the first part of the emergency management framework—Prepare—the Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs is at the forefront of advancing communities’ resilience to future climate and sea level conditions, having recently launched the Municipal Vulnerability Preparedness (MVP) grant program. The program builds on Governor Baker’s *Executive Order No. 569, Establishing an Integrated Climate Change Strategy for the Commonwealth*. As part of this MVP effort, downscaled climate data for major statewide drainage basins are provided, summarizing projected temperature, precipitation, and sea level rise trends throughout the Commonwealth. In addition, the MVP grant program offers competitive funding for communities to hold facilitated workshops using the Community Resilience Building framework to define hazards, understand climate impacts, identify community vulnerability and strengths, develop and prioritize actions for the community, and implement these actions through the planning process. After completing the planning process, and developing resiliency plans, those communities designated as MVP communities are eligible to apply for MVP Action Grant funding to implement priority adaptation actions identified through the MVP planning process. Coastal communities are also eligible for Coastal Zone Management grants to implement similar resiliency efforts. As of May 2018, 82 towns and cities across the Commonwealth have completed

climate change vulnerability assessments and developed resiliency plans through the MVP process.

The second phase of the framework—Respond—occurs in the immediate aftermath of an event. The primary objective of the response phase is the safety of those impacted. This was highlighted in the media during the 2018 winter season in coastal communities along the Eastern Seaboard, as multiple storms battered the shoreline causing historic flooding, erosion, and damage. During response, the evacuation of people in the disaster-impacted area and the supply of shelter and medical care is critical. Stabilizing key infrastructure to support these efforts may be required. After the safety of the survivors is assured, damage assessments by engineers can commence. Additional data capture efforts, such as high-water marks and structural stability assessments, can provide useful information for future actions to increase disaster resilience.

The third phase—Recovery—starts as response activities wind down. Economic dependencies require that industry start back up as soon as possible after the disaster, and survivors are driven to resume their normal lives as quickly as possible. However, the recovery process offers the opportunity to rebuild resiliently and reduce risks from future events. Initiatives like “Rebuild by Design,” launched by the US Housing and Urban Development and supported by the Rockefeller Foundation, as well as efforts in progress and completed by the MVP Program or Climate Ready Boston, bring together multi-

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Engineers Flooded with a Wave of Knowledge

by John C. Cavanaro, PE, Managing Principal—Cavanaro Consulting, Inc.

One of today's most pressing issues for civil engineers is the management of nature's forces from the sky and sea. With that in mind, the Southeastern Massachusetts Committee (SEMAC) of BSCES held their 7th technical breakfast workshop event on Friday May 4, 2018 from 7:00 AM to 11:45 AM at the Municipal Office Building in Bridgewater, MA, to learn more about the latest stormwater management design and regulatory compliance policies, as well as current trends in floodplain management and climate resiliency. Our featured guest speakers were Danielle Spicer, PE, LEED AP, ENV SP and Peter A. Richardson, PE, LEED AP, ENV SP, CFM, both of Green International Affiliates, Inc.

Danielle drilled down on the methods/techniques for stormwater treatment and detention; site constraints that affect design, such as wetlands, endangered species, and protected habitat; low impact development design; and the latest update on regulatory compliance. She walked the captive audience through a series of recent projects designed by Green International that included a number of stormwater management and treat-

ment techniques that present challenges in both urban and suburban settings. Danielle also reviewed the benefits of some of the latest evaluation criteria associated with the ISI Envision® Rating Tool, including an understanding of how Envision™ Credits can be applied to certain projects as a way of recognizing cost-effective and energy-efficient infrastructure improvements.

Peter presented a terrific history of the National Flood Mapping Program and an overview of the National Flood Insurance Program, including the details of the FEMA Flood Mapping process dating back 60 years to 1958 through the latest Map Modernization Program in 2012. He chronicled a detailed evolution of the program as well as identified several shortcomings of the actual mapping that all engineers should be aware of when working in designated Flood Zones.

Following Peter's presentation, the participants engaged in a lively discussion with both featured speakers about the engineer's role for reducing flood damage costs in the future along with

what design techniques ought to be considered above and beyond the minimum regulatory requirements to improve long term coastal resiliency. Participants and presenters exchanged a number of scenarios based on hands-on experience that led to a well-informed discussion with potentially more topics to consider for a future workshop, so stay tuned.

In addition to periodic workshops, SEMAC holds monthly lunch meetings on the 3rd Friday of the month on the South Shore and extends an open invitation to all interested parties. Please contact any of the folks below for additional information on becoming active in the SEMAC.

Gregory Driscoll, PE, Committee Chair
gdriscoll@jacobsdriscoll.com

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jcavanaro@cavanaroconsulting.com

Azu Etoniru, SE, PE, PLS, Past Chair
aetoniru@etengineering.com

Emergency Preparedness

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disciplinary teams with civic leaders to develop resilient solutions for preparedness, recovery, and mitigation. Achieving a balance between the short-term need to return to normal operations and the long-term benefits of thoughtful redesign is a challenge that requires tailored, innovative solutions.

Although it is the fourth component of the emergency management framework, Mitigation should be incorporated continuously throughout the cycle to be effective. Often, investment in

mitigation design and planning is a challenge due to other competing civic priorities. However, it has been estimated that \$1 of mitigation investment results in \$6 of future disaster costs, as recently stated by the 2018 National Institute of Building Sciences report of the benefits of mitigation strategies. FEMA offers the Hazard Mitigation Grant Program which provides funding to help communities implement hazard mitigation measures following a major disaster declaration. FEMA also provides the Pre-Disaster Mitigation Grant Program to assist States, territories, Federally-recognized tribes and local communities in implementing sustained, pre-

disaster natural hazard mitigation programs. The Commonwealth, through the MVP program, has taken strides in partnering with local communities to develop mitigation actions to ensure that communities are more resilient to future impacts.

We, as engineering professionals, need to be poised and ready for action as we approach the next wave of hurricanes in the coming season. We can leverage what we learned in 2017/2018, implement the emergency preparedness framework to plan and deliver resilient infrastructure for today and for the future of our local communities and our national shoreline.

Become a BSCESNews Contributor

Would you like to contribute to the newsletter of the oldest civil engineering society in the country? The BSCES Newsletter Editorial Board is seeking members who are willing to write articles for publication in *BSCESNews* or to join the Editorial Board.

Typically 300 to 700 words, BSCESNews featured articles are about technical topics or professional matters of interest to civil engineers. The September 2018 issue of the newsletter for example, will highlight the ASCE Transportation & Development Institute Boston Chapter and feature one or more articles on the theme of Transportation.

Editorial Board members meet monthly via conference call to plan upcoming issues of the newsletter. They also solicit, write and/or review newsletter articles.

For more information on how you can become a BSCESNews contributor contact BSCES Association Manager Rich Keenan at rkeen@engineers.org or at 617/305-4110.

Boston Landing Station Earns Envision® Silver: A Holistic Assessment of Sustainable Infrastructure

by Chris Frano, PE, Estimator, Skanska

When we hear the term “sustainable construction,” we tend to think of vegetated roofs, solar panels, and other traditionally “green” strategies. While these features reduce energy consumption and water use, project siting and selection may contribute more to sustainability as a whole. That is what the Institute for Sustainable Infrastructure has tried to capture with the Envision® Rating System.

Launched in 2012, Envision serves as a framework for planning all types of infrastructure from water treatment plants to high speed rail. While LEED has been the preferred rating system for building construction over the last quarter-century, Envision has caught on with almost 50 project awards in the last five years. Although similar in structure, Envision takes a considerably broader approach to the term “sustainability.” Whereas LEED asks, “Are we building the project right?” Envision goes a step further, asking, “Are we building the right project?”

Boston Landing Station has earned the area’s first Envision Silver award. Privately funded by New Balance’s real estate arm, NB Development Group, the \$20 Million Commuter Rail station has already exceeded ridership expectations. The neighborhood, once rich with rail options, was left without efficient transit with the elimination of the Green “A” Line in 1969. Having been replaced with bus routes, the six-mile commute to Downtown Boston took 45 minutes or more, with at least one transfer necessary to make the trip. Boston Landing Station has cut that commute in half, and the return of transit to the neighborhood has accelerated the pace of economic growth in the area. The team earned a number of Envision points in the “Quality of Life” credit category because of that transportation revival, but there were several other strategies in which the team scored high.

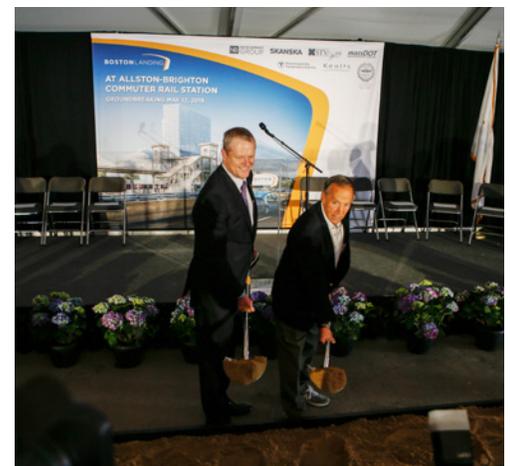
One of the major factors was material selection and sourcing. Over 50% of the materials on the project were either reused or recycled, including steel and track ballast. Over 95% of materials were sourced locally, with new aggregates



The new elevator structure at Everett Street connects the station platform to existing transportation routes.

coming from Wrentham, MA and concrete materials coming from Charlestown, MA. The team also earned credit for encouraging alternative modes of transportation and integrating with existing transportation networks. The station is sited within walking distance of four MBTA bus routes as well as bike routes and a Hubway bikeshare station. The coordination between various modes of transportation creates a seamless transition for commuters.

But perhaps the most innovative component was the project management structure. In a public-private partnership, which is the first of its kind in Boston, NB Development Group worked closely with the MBTA and MassDOT throughout the planning process. By bringing the designer, STV, and the contractor, Skanska together to solicit ideas, the team devised solutions that would not have been possible if they had worked in silos. The team earned Envision “Innovation Points” for this creativity, and as public-private partnerships continue to



Governor Charlie Baker, and New Balance Chairman, Jim Davis at the 2015 Groundbreaking Ceremony.

grow in the US, this may serve as a model for future infrastructure revival.

[Click here](#) if you are interested in learning more about the Envision Rating System or pursuing a project award.

Municipal Vulnerability Preparedness Program: From Planning to Action

by Nasser Brahim, Senior Climate Change Planner, Kleinfelder (MVP Certified Provider)

The Massachusetts Executive Office of Energy and Environmental Affairs (EEA) initiated the Municipal Vulnerability Preparedness (MVP) program in 2017 to help local governments build resilience to climate change. The program provides municipalities with grants to address climate impacts, including from increased flooding, extreme heat, drought, wildfire, and more.

Over the past year, EEA has awarded over \$8.2 million in grant funding to municipalities through the MVP program. Currently, 157 cities and towns, accounting for 64% of the Commonwealth's population, are participating in the program. The participating communities are large and small, urban and rural, coastal and inland.

The MVP program provides competitive funding through Planning Grants and Action Grants. Planning Grants cover the full cash costs of the planning process, while Action Grants require that recipients contribute at least 25% of the total project cost as cash or in-kind services.

Planning Grants provide municipalities with funding to carry out a Community Resilience Building workshop with support from an MVP Certified Provider. During the workshop, key stakeholders from public, private, and non-profit sectors work together to:

- Define extreme weather and natural and climate related hazards;
- Understand how their community may be impacted by climate change with a

Massachusetts specific climate change clearinghouse with the latest science and data (www.resilientma.org);

- Identify existing and future vulnerabilities and strengths;
- Develop and prioritize actions for the community; and
- Identify opportunities to take action to reduce risk and build resilience.

After the workshop, communities will summarize the findings in a report and present them to the public for feedback. Once a community completes this process, EEA will designate them as an MVP Community. This designation gives the community extra points in other EEA competitive grant programs and makes them eligible for MVP Action Grants.

Action Grants provide funding to implement key actions identified through the planning process. The first round of Action Grants, totaling over \$5 million, was awarded on June 1, 2018. Action Grant awards ranged in size from

\$8,000 to \$400,000. They tackled the range of eligible project activities including:

- Detailed vulnerability assessments and adaptation plans;
- Updates to local zoning and design standards;
- Designs to protect vulnerable water, sewer, roadway, and open space infrastructure; and
- Implementation of nature-based solutions.

There is even a project to learn from Hurricane Maria survivors in Holyoke, MA.

As evidenced by the high participation rate in the MVP program, Massachusetts communities are eager to better understand and manage their risks from climate change. MVP grants provide an important catalyst for taking action on community priorities and learning lessons that can guide future adaptation. The Environmental Bond Bill introduced by Governor Baker and other measures introduced by members of the Legislature demonstrate the strong political will needed to sustain and build on these important efforts across the Commonwealth.

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Presidents Report

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- We improved our board meetings procedures, eliminated redundancies in reporting, and focused on resolution to issues, capitalizing on opportunities, and implementing best practices. We kept the meetings on schedule and addressed items on the agenda.
 - We revitalized our Membership Committee with outreach to the engineering community in their workspace. We visited engineering offices, had constructive dialogue with the engineers, and identified how we can better serve our engineering community. This resulted in new members, higher visibility, and improved communications with the engineering community.
 - We also revitalized our Fundraising Committee to focus on strategies for increasing our revenues to support our programming. We have reached out to more BSCES volunteers to help support our annual sponsorship drive and are looking at additional creative ways to generate funds.
 - We shifted our technical events to company and university space to the maximum extent practical. This provided members with opportunities to connect with business and academic professionals when attending technical functions. In addition to greater exposure for our members to the business and academic professionals, we also kept our own event cost down.
- My year as president passed by quickly. Our society not only strives for success today, but also works to lay the foundation for generations to come. We planned the seeds for future success by:
- Revisiting our special funds policies and setting foundation of principals and guidelines for administration of these funds;
 - Establishing copyright policies for our lectures and seminars to protect our members;
 - Proposing the establishment of a BSCES Advisory Board to strengthen and support the leadership;
 - Working to establish master agreements with Northeastern University and Wentworth Institute of Technology for more collaboration and joint functions for mutual benefit, prestige, and opportunities;
 - Discussing partnerships with Boston WTS for collaboration and joint functions for mutual benefit in programing, networking, and technical events.

I appreciate and thank the 2017-2018 BSCES Board of Government as well as the committee chairs, TECET personnel, and ASCE staff who have worked with me to make this past year a great success. I would like to thank all the society sponsors, program sponsors, committees and groups members, society members, and

volunteers who have supported BSCES with their membership, time, and resources. I would like to acknowledge and make a special mention of my appreciation to:

Olivia Richards, Gill Engineering Associates

Olivia is the chair of BSCES Public Awareness & Outreach Committee (PA&OC). She has done an outstanding job leading her committee, planning numerous outreach programs and activities and reaching out to schools and local communities to create awareness of civil engineering accomplishments, challenges, and opportunities.

Jessica Wala, Nitsch Engineering

Jess is the chair of the BSCES Younger Member Group (YMG). Jess has been an ASCE and BSCES member since 2009 when she joined both groups while still in college. She has been a member of the BSCES Younger Member Group since 2013. Throughout her involvement in YMG, Jess has made numerous contributions to the group, BSCES, and the engineering community. She was especially instrumental in engaging younger members, who will be the future leaders of our Society.

Bruce Jacobs, EarthSoft

Bruce was instrumental in running several programs this year. Bruce is a senior vice president of BSCES and was very active as the chair of the Membership Committee. He arranged and visited a number of engineering firms where he met with the engineers, presented ASCE and BSCES to them and engage in constructive dialogue about what activities would be of most value. Also, Bruce served on several other committees, always volunteers for many tasks and activities, and supports fellow BSCES leaders when they need assistance to complete their assignments.

Geoff Schwarz, GZA

Geoff Schwarz is the BSCES president-elect. Geoff went above and beyond his duties in this role and was a tremendous support in supervising the technical groups and reviewing our financial policies. Geoff is well positioned to take on his new responsibilities as BSCES president and brings great energy, commitment, and passion to BSCES. We are fortunate to benefit from his high level of support to our Society.

Alexander Bardow, MassDOT

A former structural group chair and BSCES president, Alex continues to support BSCES. Alex is an active member of the BSCES Past Presidents Committee. He is always responsive to BSCES requests despite his busy schedule. Last February, we discussed the Zakim Bridge Awards Ceremony and he immediately sprang into action and started the ball rolling at MassDOT, helped forming the committee without which the Zakim Bridge ASCE Outstanding Civil Engineering Achievement Award event would not have happened.

Together, we enhanced BSCES position and the leadership in advancing the civil engineering profession.

The Coasts, Oceans, Ports, and Rivers Institute (COPRI) Boston Chapter and Emergency Preparedness are the featured group and theme for this issue of *BSCESNews*. Please read the related articles.

I previously mentioned that we are establishing a Legal Corner Article in the *BSCESNews*. Legal views and case studies are vital the advancement of our profession. Please read *Climate Change and the New Normal* by Joe Barra PE, Esq. of Robinson+ Cole.

We have launched the 2018-2019 sponsorship drive. I'd like to once again thank our 2017-2018 Society Sponsors and Program Sponsors for their commitment to our Society. Our programs and activities require considerable financial support. I ask that you continue your support to BSCES or become sponsor for this year if you have not done so previously. Please read our sponsorship information in this BSCESNews. BSCES is a nonprofit organization with Federal Tax Identification Number is 04-2103915.

Your financial support allows us to communicate our achievements, the importance of our work, and recruit new participation. If you too want to donate, please use the Donate to BSCES on our website where you can donate any amount. Your individual donation is appreciated and, on behalf of the BSCE, I thank you for your support. Your donation is fully tax deductible.

This month we extend a special thanks to this month featured Society Sponsor CDM Smith. Please read the page one article entitled 'Tis the Season—Emergency Preparedness in 2018. by Frances Bui and Lauren Klonsky of CDM Smith.

Geoff Schwarz our president elect will become BSCES president on July 1. As a member of BSCES and the immediate past president, I will support Geoff and his programs for the coming year. I ask that we all support Geoff and BSCES leadership. I am certain the BSCES will continue to be steered in the right direction of profitability, participation, and inclusiveness with Geoff at the helm. I wish Geoff and the BSCES continued success and good fortune for generations to come.

I value my membership in BSCES and will continue to be active, serve, and support the ambitions and growth of this prestigious 170-year-old organization, the oldest civil engineering society in the country, which I'm proud to be a member. I am certain you share the same pride and commitment.

BSCES is your organization, if you have any feedback or suggestion on how we can improve, please contact the BSCES president directly at president@bsces.org.

BSCES Legislative Fellow Update from Beacon Hill—190th Massachusetts Legislative Session

by Bryon S. Clemence, PE, 2017–2018 BSCES Legislative Fellow



At the State House, the Legislature is in the last weeks of the current session, which began in January 2017. It's a busy time. Since this is the last newsletter of the BSCES fiscal year, I will continue

to report on legislation of interest to our engineering community through the BSCES email updates and the website.

It's not too early for members to consider becoming the next Legislative Fellow for BSCES. If you have an interest in the policy and planning side of our profession, this is a rewarding and eye-opening experience. Applications are submitted in the fall for this BSCES-funded position.

Here are some brief updates on bills of interest to civil engineers and that have passed or appear to be progressing in the Legislature.

The Governor signed into law another infrastructure bond authorization bill, for \$3.9 billion (H. 4549). This is based on several previous bills from the Senate and the House. It includes planning, design, and construction of facilities, a grant program for municipalities, and energy and climate resiliency for state facilities. Facilities include state and local government infrastructure, offices, schools, hospitals, universities, rinks, and public safety centers. It would also authorize \$10 million to complete the draft EIR/EIS for the North-South Rail Link tunnel.

The study of high-speed rail service between Pittsfield and Boston is now part of the Senate's proposed budget (S. 2530, Sec. 164; it had originally been included as amendment to an early version of the bond bill described above). Also included in the Senate's budget are:

- Study of noise and pollution at Massport airports (Sec. 157, formerly S. 1275)
- Study of seasonal rail service between the Berkshires and New York City (Sec. 159)
- A working group for replacement or repair of culverts and small bridges (Sec. 160)
- Study of widening of Route 2 from Concord to Gardener (Sec. 174)

The proposed House budget (H. 4401) includes language implementing a local option value-capture program in support of MBTA and

MassDOT transportation projects (known as Supplemental Infrastructure Financing for Transportation or SIFT, Section 50).

Both the Senate and House budgets have \$2.2 million for climate adaptation, resiliency, and preparedness and approximately \$500,000 for the Massachusetts Climate Protection Plan.

The Senate unanimously passed a "Clean Energy Future" bill pertaining to climate mitigation strategies (S. 2545/2564). This is based on several previous bills from the Senate and the House. This is separate from the Senate's bill for a climate adaptation plan, which was referred to the House Committee on Ways and Means last November (S. 2196).

The House passed an updated version of the Governor's climate bond authorization bill (H. 4599/4613). It was referred to the Senate Bonding committee, which scheduled a hearing for June 26, 2018.

The following bills were reported favorably.

- H. 4133, which would require a study of the effects of coastal and ocean acidification, was reported favorably to the House Committee on Ways and Means.
- S. 2569, which would authorize reduced speed limits and increased fines in construction zones, was reported favorably by the Senate Committee on Ways and Means (formerly S. 2217).
- The Governor's "Opportunities for All" bill was redrafted and reported favorably by the Joint Committee on Economic Development and Emerging Technologies (H. 4592, formerly H. 4297). Of interest to civil engineers are \$50 million for dredging projects and \$50 million to stimulate economic development in the maritime economy sector and protect coastal assets vital to achieving those aims. A hearing by the House Bonding Committee was scheduled for June 19.

The following bills were sent to study, which means they are effectively "dead."

- Study Order H. 4502, Transportation: H. 1828, pertaining to a pilot program for mileage-based user fees; and H. 1874, which would have required a timeline for implementing interchange improvements along Route 128 between Peabody and Gloucester.

- Study Order H. 4537, Transportation: H. 1855, pertaining to bridge maintenance practices; H. 1869, which would have required a study of flaggers and police details and 701 CMR 7.00; H. 1855, which would have required MassDOT to notify abutters regarding tree removal and maintenance work; and H. 1889, which would have banned the use of calcium chloride on roads and bridges.

- Study Order H. 4649, Transportation: H. 1808, which would have required a construction schedule for improvements to Route 3; H. 1875, pertaining to a study of ways to improve repairs following excavation in roadways; and H. 2728, which would have required that public employees inspect surface transportation projects.

- Study Order H. 4597, Transportation: H. 1843 pertaining to transportation demand management for new developments; H. 2721 which would have created a Transportation Technology Advisory Commission; H. 3424, pertaining to transit authorities and Central Artery debt; and H. 3641, the House bill on electronic tolling (the Senate version was sent to study in April).

- Study Order H. 4544, Water Quality and Wetlands: H. 2115, which would have established a drought management task force; and H. 2137, pertaining to renewal of registered water withdrawals under the Water Management Act.

- Study Order H. 4571, Oceans and Waterways: H. 396, which would have established a fund under Chapter 91 for coastal infrastructure; H. 401 and 403, both of which pertained to use of CPA funds for coastal facilities; H. 405 and 406, pertaining to financing for dredging projects; H. 471, which would have required a study of dredging for recreational boating; and H. 455, pertaining to development in Designated Port Areas.

Further information on specific bills is available on the [Legislature's website](#). There are links to legislators, bills, hearings, and session laws. You may contact me, as well, at bclemence@verizon.net.

Legal Corner

Climate Change and the New Normal

by Joseph A. Barra, Esq., Partner and member of Robinson+Cole's Construction Group¹

Climate change is fast becoming a lightning rod of legal exposure for the design community. This article explores the impact this phenomenon is having upon the way engineers practice and the standards by which they are measured.

You don't like the weather?

There are a variety of ways to describe climate change and its impact upon the built environment. The National Academy of Sciences refers to an Extreme Weather Event (EWE) as "A weather or climate event that is rare at a particular place (and sometimes, time of year) including, for example heat waves, cold waves, heavy rains, periods of drought and flooding, and severe storms."² Based upon recent weather patterns, it would appear that the NAS's definition has now become a moving target.

Whatever moniker is used to describe the uptick in frequency and severity of New England weather, the tension between existing design standards and professional practice presents a variety of challenges for the 21st century engineer.

These times are a changin'

Sea Level Rise: Rising tides are perhaps the most common impact associated with climate change. According to one study, the sea level in Boston is expected to rise nine inches by the year 2030 and 36 inches by 2070.³ As rising sea levels continue to threaten our coastline, design professionals are developing innovative ways to manage these impacts. For example, at Clippership Wharf in East Boston, the developers replaced an existing concrete seawall with a shoreline comprised of tidal pools and salt marshes. These natural adaptive techniques function as a buffer that can mitigate coastal flooding.

Extreme Heat: By 2100, the average annual temperature in Boston is expected to increase by 10° to 56°F and the number of days above 90°F could increase from 10 to 90 days per year.⁴ To address this change, designers are placing greater emphasis on passive strategies such as building orientation, fenestration and the use of high-performance building materials.

Increased Storm Intensity: Studies show that from 1958 to 2010, there was a 70% increase in the amount of precipitation that fell on days with the heaviest rainfall.⁵ By 2100, the ten-year storm will increase from 5.25 inches in a 24-hour period to 6.0 inches.⁶

The Nor'easters that impacted New England this past winter have added a new term to the design professional's lexicon: Bombogenesis.⁷ While the brunt of these storms was experienced primarily along the coast, their impacts were nonetheless felt inland, with flooding rivers, streams and tidal wetlands.

These storms have raised public safety concerns with regard to the siting and design of important infrastructure components. As a result, astute designers are beginning to factor these concerns into their designs through the use of oversized detention ponds, elevated first floors and the relocation of mission-critical equipment out of a building's basement. Sadly, governmental codes and standards continue to lag behind these design initiatives. This regulatory disconnect leads to uncertainty in the design community as to how to define the professional standard of care without the benefit of homogeny.

Back to the Future...

The Massachusetts Building Code is based upon the International Building Code (IBC) which has no comprehensive mandate for climate resiliency.⁸ In fact, these codes are based upon historical flood data. Our reliance upon past data is becoming increasingly problematic for engineers wishing to establish a baseline for the design of long-life structures. This uncertainty also leads to inconsistent results in the courtroom, as a designer will often rely, in part, upon code compliance as a shield to help deflect malpractice claims.

To be fair, there is active debate in the design community as to whether the existing codes account for future weather contingencies. Nevertheless, advocates for change argue that current design standards should adopt a forward-looking approach rather than an historical perspective. For example, regulations adopted by the Massachusetts Department of Environmental Protection have attempted to address this dilemma by imposing a general, non-code-based duty that requires designers to "incorporate *projected* sea level rise during the design life of [certain] buildings; at a minimum, such projections shall be based on historical rates of increase in sea level in New England coastal areas."⁹



The Boston Planning & Development Authority (BPDA) has undertaken a unique approach to climate change by requiring developers to file a "Resiliency Checklist" with their Article 80 or similar filings.¹⁰ The Checklist requires project proponents to identify current and future adaptation strategies to reduce adverse impacts due to "future climate conditions."

Another innovative approach to managing the challenges of climate change involves the nascent adoption of public private partnerships (P3). In fact, a bill recently introduced on Beacon Hill by Governor Baker entitled An Act Promoting Climate Change Adaption, Environmental and Natural Resource Protection and Investment In Recreational Assets and Opportunity seeks to fund over \$1.4B in capital projects, including initiatives intended to address climate change.¹¹

Perhaps the most exciting aspect of Gov. Baker's proposed legislation involves the use of P3 for improved water, wastewater, stormwater and flood control projects. Developing water-based infrastructure projects pursuant to a P3 structure will make it easier for cash-strapped communities to mitigate the impacts of climate change.

continued on page 9

Climate Change and the New Normal

continued from page 8

Look into my crystal ball...

In the context of climate change, how do the Codes' failure to keep pace with an engineer's evolving standard of practice affect a designer's legal exposure?

One variable in the malpractice equation involves the foreseeability of harm suffered by the injured party. Legal scholars will recall Justice Cardozo's famous decision in *Palsgraf v. Long Island Rail Road*, 248 N.Y. 339 (1928), in which he introduced the concept of foreseeability into the ordinary negligence equation. When applied to a professional malpractice setting, this concept provides that an injured claimant may not recover in negligence from a design professional unless s/he can demonstrate that both the injured plaintiff and the harm sustained were reasonably foreseeable.

A recent report published by the Conservation Law Foundation illustrates how the concept of foreseeability contributes to a designer's exposure for failing to properly consider resiliency.¹² Deanna Moran, one of the Report's contributing authors, explains that design professionals may

be liable for "failing to act reasonably in the face of ascertainable risk....Buildings and other physical assets are being designed and built based on climate patterns of the past rather than those we see now or anticipate imminently."¹³ Given the notoriety of impacts surrounding the effects of climate change, a designer's ability to argue that neither the claimant nor his/her injury were reasonably foreseeable is becoming increasingly difficult.

What's a good designer to do?

Relying solely upon existing codes that only consider *historical* weather patterns is no longer sufficient. Design professionals need to be proactive in developing a foreseeability-based approach to design. Careful consideration of the risks associated with a variety of future EWEs is thus essential to demonstrating an adherence to the professional standard of care.

The engineer is likewise encouraged to engage the project's owner in a cost/benefit discussion to jointly arrive at a design that balances the owner's desire for a sustainable project with the costs associated with overdesign.

Another meaningful way to manage this risk involves insurance. The designer is well advised to carefully review its existing Errors & Omissions Insurance Policy and all applicable exclusions with its broker. Hidden interpretations could result in a false sense of coverage. For example, an engineer's negligent advice on sustainability may be excluded from coverage under a policy's exclusion for pollution because the triggering cause of the loss—a build-up of CO₂ greenhouse gas—is generally considered a pollutant.

It ain't over...

The ability to precisely define a professional standard of practice that addresses the impacts of climate change will remain a challenge for the foreseeable future. In the absence of exacting code guidance, today's engineer must independently consider the effects of sea level rise, flooding, heat, freezing conditions, excessive wind, and other environmental factors when developing a conservative design.

NOTES:

- 1 Mr. Barra is a construction attorney in the Boston Office of Robinson + Cole LLP. He received his degree in Civil Engineering from the Virginia Military Institute in 1983. While working for a consulting engineering firm in NY, Mr. Barra earned his J.D. from the Touro College, Jacob D. Fuchsberg Law Center in 1989 and has been representing design professionals, owners and contractors for nearly 30 years.
- 2 NAS 2016
- 3 East Coast Nor'easters Amplify Calls For Resilient Building Code Regulations; by Justin Rice; ENR (March 12, 2018).
- 4 Boston Planning & Development Agency Climate Change Guidance Memorandum; December 14, 2017.
- 5 Boston Planning & Development Agency Climate Change Guidance Memorandum; December 14, 2017.
- 6 Id.
- 7 Bombogenesis occurs when a mid-latitude cyclone rapidly intensifies, dropping at least 24 millibars in 24 hours. The formation of this rapidly strengthening weather system creates what is known as a "bomb cyclone".
- 8 IBC Council (2015)
- 9 See 310 CMR§9.37(2)(b)(2).
- 10 Climate Resiliency Guidance Memorandum, Boston Planning & Development Agency; December 14, 2017
- 11 For a more detailed summary of House Bill 4318, see Massachusetts Moves to Address Climate Change, Environmental, and Water Infrastructure Priorities--- Proposes to Authorize Use of P3; by Anatoly M. Darov, P.E., Esq., March 20, 2018 .
- 12 Climate Adaptation and Liability: A Legal Primer and Workshop Summary Report; by the Conservation Law Foundation in collaboration with the Boston Green Ribbon Commission (January, 2018).
- 13 Rising Seas Could Bring A Flood Of Lawsuits, by Deanna Moran; Banker & Tradesman (March 25, 2018).

Recent News and Updates

BSCES Welcomes New Board of Government

BSCES is pleased to announce the results of the 2018-2019 BSCES Board of Government elections. Members of the 2018-2019 Board of Government have taken their oath of office and will officially assumed oversight of BSCES with the commencement of the 2019 BSCES fiscal year on July 1, 2018. The members of the new BSCES Board are as follows:

President

Geoffrey B. Schwartz, PE, GZA GeoEnvironmental, Inc.

President-Elect

Richard D. Maher, PE, William Perry Associates

Secretary

Christopher P. Hersey, Skanska

Treasurer

Gregory L. Mirliss, AECOM

Assistant Treasurer

Anthony M. Richardson, PE, Jacobs

Senior Vice President

Bruce L. Jacobs, PhD, PE, EarthSoft, Inc.

Senior Vice President

Shallan Fitzgerald, PE, PMA Consultants LLC

Vice President

Ronald K. Burns, PE, LSP, LEED AP,

Arcadia Technology, Inc.

Vice President

Michael R. Cunningham, PE, Kleinfelder

Past President

Malek A. Al-Khatib, PE, Louis Berger

Institute Chapter & Technical Group Chairs

Coasts, Oceans, Ports & Rivers Institute

Boston Chapter

Bryan N. Jones, PE, HDR, Inc.

Construction Institute Boston Chapter

Sean M. Homem, PE, SE,

Simpson Gumpertz and Heger Inc. (SGH)

Engineering Management Group

Cody M. Gibb, GZA GeoEnvironmental, Inc.

Environmental & Water Resources Institute

Boston Chapter

Kathryn Booras, EIT, CDM Smith

Geo-Institute Boston Chapter

Lucy C. Jen, PhD, PE, RSE Associates, Inc.

Structural Engineering Institute Boston Chapter

Nathan L. Rosencranz, PE, SE,

Weston & Sampson, Inc.

Transportation & Development Institute

Boston Chapter

Cara N. Pirkey, PE, HNTB, Inc.

Younger Member Group

Brian P. Paula, PE, BSC Group, Inc.

BSCES Announces 2018-2019

Sponsorship Program

BSCES leaders are pleased to unveil the 2018-2019 BSCES Sponsorship Program, which runs through June 30, 2019. We are looking forward to BSCES accomplishing more and continuing to advance the civil engineering profession. This can only be achieved with the continued support of our members and sponsors. 2018-2019 BSCES Sponsors help BSCES achieve its financial goals while receiving great organizational visibility and name recognition among thousands of professionals and demonstrating that they are leaders of the civil engineering profession.

The 2018-2019 BSCES sponsorship program offers two sponsorship options—Society Sponsor and Program Sponsor. Looking to give sponsors maximum exposure, BSCES is offering a broad array of promotional opportunities. Please see the insert included at the end of this newsletter for program details.

BSCES Welcomes its New Members

The BSCES Board of Government is pleased to welcome the following new members who joined BSCES in May 2018:

Affiliates

Michael A. Bashorun, Northeast Network, Inc.

Josephine V. Cartenson, Massachusetts Institute of Technology

Associates

Ali Al Saadawi, MassDOT

Erin Comeau, Canton, MA

Michael J. Hanley, Dewberry

Joseph L. Kief, GZA GeoEnvironmental, Inc.

Elizabeth Kirtland, Stantec

Barton Liang, Medford, MA

Kimberly Marrion, Simpson Gumpertz & Heger

Ryan F. Mellen, Norwood, MA

Molly J. O'Toole, Canton, MA

Tarek Radwan, Boston, MA

Denise A. Silva, Arlington, MA

Members

Ben Bolger, Roome & Guaurracino

Ryan Marshall, Stantec

Anastasia Rudenko, GHD

Students

Tucker Hyora, University of Maine, Orono

Mithila B. Madhavan, Northeastern University

Alfred Navato, Northeastern University

Omid Rashki, Amirbikir University of Technology

Mason Saleeba, University of Massachusetts, Amherst

Dylan Shaffer, University of Massachusetts, Lowell

Ezra Stobbe, University of Massachusetts, Amherst

Renew Your BSCES Membership for 2018!

If you haven't done so already, please renew your BSCES membership. Thank you!

2018 ASCE Election Results

ASCE has announced their 2018 election results. Congratulations to 2018-2019 President-Elect Kancheepuram N. Gunalan, PhD, PE, DGE, and 2018-2021 Region One Governors-Elect Craig F. Ruyle, PE, and Beth Ann Smith, PE, BCEE. For more information or to view the election results, [click here](#).

Dream Big

ASCE, with support from the United Engineering Foundation (UEF) has set the ambitious goal of putting a copy of the *Dream Big* movie and toolkit into every public school in the US. They received a grant already to cover costs for every high school in the US, but they are now trying to get the DVD into elementary and middle schools. Individuals can help with this initiative. Give \$5 to the public school of your choice and a toolkit will be sent with the following:

1. A DVD of the full-length feature film in English, French, Spanish and closed captioned, *licensed for educational screenings only*;
2. The complete teacher's guide;
3. All companion videos;
4. Downloadable files for classroom use;

[Click here](#) for more information and to search for your school!

Upcoming Events

For more information and to register for events, please visit www.bsces.org

To register online for an event at the BSCES member rate you must login using your BSCES assigned username and password. If you do not know your BSCES member login information, call 617/227-5551.

BSCES Program Committee Sponsored Webinar

Wednesday, July 11, 2018

12 Park Plaza, Boston

12:00 PM – 1:30 PM

Lunchtime Transportation Webinar Series Program—21st Century Bridge Evaluation: New Technologies and Solutions

Webinar Presenters:

Ehsan Minaie, PhD, PE

Nathaniel Dubbs, PhD, PE

David Lattanzi, PhD, PE

Guest Speakers:

Reed Brockman, PE, Associate Vice President, AECOM

John Carney, PE, Project Manager, HNTB

Bill Doherty, PE, Senior Supervising Structural Engineer, WSP

Scott Dowling, PE, Project Manager, TranSystems Corporation

Darren Hardy, PLS, Director of Survey Services, WSP

John M. Ings, PE, Vice President, Meridian Associates, Inc.

Peter Keeping, PE, Assistant Vice President,

HAKS Engineers

Since the construction of modern structures, civil engineers have been assisting infrastructure owners with planning, designing, constructing, and inspecting their assets using methodologies that have been developed empirically. As infrastructure, especially the bridge inventory, continues to age and becomes a more complicated system, its behavior changes. In these cases, traditional methodologies provide a significant challenge to bridge engineers, especially during inspection, load rating, and overall safety assessment. This BSCES Program Committee-sponsored webinar and expert presentation explains the basics of new technologies and techniques being used in the assessment and evaluation of bridges.

Please see the Insert at the end of this month's newsletter for further details.

ASCE and BSCES Sponsored Seminar

Thursday – Friday, July 19-20, 2018

Courtyard by Marriott Cape Cod, Hyannis

8:30 AM – 4:30 PM

Ground Improvement Methods: Selection, Design, Construction, and Monitoring/Inspection

Jerry A. DiMaggio, PE, DGE

This seminar provides the critical knowledge and skills needed in order to take advantage of the cost-effective use of ground improvement methods in urban construction for transportation, commercial and industrial development. From start to finish—from design to construction and general site development—the instructor will lead you through the myriad of more than 50 different ground improvement methods from which you can choose.

Click here to register for this event online.

Younger Member Group Community Service Event

Tuesday, August 7, 2018

455 Nahanton Street, Newton

5:00 PM – 7:30 PM

Canoeing for Clean Water with the Charles River Watershed Association

Water chestnuts grow in excess along the Charles River due to high phosphorus levels. Mechanical harvesting cannot be used in shallower waters, so the CRWA relies on the help of volunteers each year to help remove the invasive species. On Tuesday, August 7, 2018 we will be canoeing and hand-pulling the water chestnuts as a part of this yearly volunteer program!

Please see the Insert at the end of this month's newsletter for further details.

BSCES Program Committee Sponsored NHI Training

Tuesday – Friday, October 16-19, 2018

Mott MacDonald, 101 Station Drive, Norwood

8:00 AM – 4:30 PM

FHWA-NHI-130078 Fracture Critical Inspection for Steel Bridges

This course curriculum examines current practices, while addressing new and emerging technologies available to bridge inspectors. In addition, the course features classroom training; hands-on workshops for popular types of nondestructive evaluation (NDE) equipment; and a case study detailing the preparation of an inspection plan of a fracture critical bridge.

Please see the Insert at the end of this month's newsletter for further details.

BSCES Program Committee Sponsored NHI Training

Monday – Friday, December 10-21, 2018

Hilton Garden Inn Worcester

35 Major Taylor Boulevard, Worcester

8:00 AM – 4:30 PM

FHWA-NHI-130055 Safety Inspection of In-Service Bridges

This two-week course is based on the 2012 FHWA “Bridge Inspector’s Reference Manual” (BIRM) and provides training on the safety inspection of in-service highway bridges. Satisfactory completion of this course will fulfill the training requirements of the National Bridge Inspection Standards (NBIS) for a comprehensive training course. This course is not geared towards fracture critical, underwater, or complex structures. All participants must show that they passed either of the following prerequisite courses: FHWA-NHI-130101, Introduction to Safety Inspection of In-Service Bridges or FHWA-NHI-130054 Engineering Concepts for Bridge Inspectors.

Please see the Insert at the end of this month's newsletter for further details.

2017–2018 BSCES Program Sponsors

Alfred Benesch & Co. | BSC Group | Childs Engineering Corporation | Cianbro Corporation | GEI Consultants, Inc.
 Green International Affiliates, Inc. | Haley & Aldrich, Inc. | Hayward Baker | Helical Drilling | Howard Stein Hudson | Hoyle, Tanner & Associates
 Massport | McMillen Jacobs Associates | Nitsch Engineering | Department of Civil and Environmental Engineering, Northeastern University
 Skanska Civil | Tufts University | VHB | Weston & Sampson Engineers, Inc.

Classifieds



Licensed Site Professional

Horsley Witten Group currently has an opening for a **Licensed Site Professional (LSP)** in Massachusetts with a minimum 8–10 years of experience with LSP related work to support our ongoing engineering and restoration projects that involve site assessment and remediation. P.E. preferred.

Please submit a resume and letter of interest to hwinfo@horsleywitten.com. For more information on our firm, please visit www.horsleywitten.com

Horsley Witten Group, Inc. is an equal opportunity employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, veteran status or disability.

SMMA is seeking a **Senior Civil Engineer** to join SMMA’s Site Design team in Cambridge.

Key Qualifications: 10-15 years’ experience and Registration as a Professional Engineer.

Key Responsibilities: Developing site plans for a variety of land-development and building projects; Designing stormwater management and utility systems; Developing permitting applications and supporting reports; and Managing project staff.

To apply for this position, please visit:

<https://smma.applytojob.com/apply>



University of Massachusetts Lowell

Visiting Lecturer—Civil Engineering: The Department of Civil & Environmental Engineering at the University of Massachusetts Lowell invites applications for a Visiting Lecturer position for January 2019. Responsibilities will consist primarily of teaching the senior Capstone Design course.

Minimum Qualifications (Required):

- Registration as a Professional Engineer and relevant industrial experience
- Undergraduate and Master degrees in Civil Engineering
- The ability to work effectively with diverse groups

To learn more or to apply, please visit: [UML Visiting Lecturer—CE](#)
Review of applications will begin 09/01/2018, and will continue until the position is filled.

The University of Massachusetts Lowell is an Equal Opportunity/Affirmative Action, Title IX employer. All qualified applicants will receive consideration for employment without regard to race, sex, color, religion, national origin, ancestry, age over 40, protected veteran status, disability, sexual orientation, gender identity/expression, marital status, or other protected class.



Boston Society of Civil Engineers Section
American Society of Civil Engineers

Program Committee

ASCE | CONTINUING EDUCATION

WEBINARS

2017-2018
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Massport
McMillen Jacobs Associates
Nitsch Engineering
Department of Civil and Environmental Engineering, Northeastern University
Skanska Civil
Tufts University
VHB
Weston & Sampson

Lunchtime Transportation Webinar Series

21st Century Bridge Evaluation: New Technologies and Solutions

Ehsan Minaie, PhD, PE
Nathaniel Dubbs, PhD, PE
David Lattanzi, PhD, PE

With Local Guest Speakers

Reed Brockman, PE, Associate Vice President, AECOM
John Carney, PE, Project Manager, HNTB
Bill Doherty, PE, Senior Supervising Structural Engineer, WSP
Scott Darling, PE, Project Manager, TranSystems Corporation
Darren Hardy, PLS, Director of Survey Services, WSP
John M. Ings, PE, Vice President, Meridian Associates, Inc.
Peter Keeping, PE, Assistant Vice President, HAKS Engineers

Date: Wednesday, July 11, 2018

MassDOT Mezzanine Conference Room, 10 Park Plaza, Boston, MA
12:00 PM - 1:30 PM Presentation (60-minute webinar; 30-minute Guest speakers) & Brown-Bag Lunch

Join the Program Committee for the first in a monthly presentation of technical webinars showcasing various subjects during lunch hour at 10 Park Plaza. Join us every month as BSCES offers the opportunity to watch ASCE webinars at a fraction of ASCE cost, earn PDH/CEU's, meet colleagues, as well as listen from local "experts" speak briefly on the webinar of the month.

The official ASCE course description can be found [here](#).

Registration Deadline: Friday, July 6, 2018

Registration Fees - Members/Public Sector \$25, Non-Members \$30, Students \$5

Information/Registration:

Register to attend this meeting and pay by credit card online at <http://bit.ly/2tcNQs2>. To register online for an event at the BSCES member rate you must login using your BSCES assigned username and password. If you do not know your BSCES member login information call 617/227-5551. You can also register for this event by mail or email. To do so, download and complete a [BSCES Event Registration Form](#) and follow the submission instructions. Cancellations received after July 6 and no-shows will be billed.



This presentation provides one Professional Development Hours (PDH)

Supported by the staff of The Engineering Center Education Trust



Volunteer with the Younger Member Group!

Canoeing for Clean Water

With the Charles River Watershed Association
Tuesday August 7, 2018

Water chestnuts grow in excess along the Charles River due to high phosphorus levels. Mechanical harvesting cannot be used in shallower waters, so the CRWA relies on the help of volunteers each year to help remove the invasive species.

On Tuesday, August 7, 2018 we will be canoeing and hand-pulling the water chestnuts as a part of this yearly volunteer program!

5:00 PM – 7:30 PM

Charles River Canoe & Kayak
455 Nahanton St, Newton, MA

To Register - Email:

yma@bsces.org

Registration Deadline: Tuesday, July 31, 2018

Space is limited, first come first serve!

2017-2018 Society Sponsors: AECOM | CDM Smith | EarthSoft | GZA | Louis Berger | Robinson + Cole LLP

2017-2018 Program Sponsors: Alfred Benesch & Co. | BSC Group | Cianbro Corporation | Childs Engineering Corporation | GEI Consultants, Inc. | Green International Affiliates, Inc. | Haley & Aldrich, Inc. | Hayward Baker, Inc. | Helical Drilling | Howard Stein Hudson | Hoyle, Tanner & Associates | Massport | McMillen Jacobs Associates | Nitsch Engineering | Department of Civil and Environmental Engineering, Northeastern University | Skanska Civil | Tufts University | VHB | Weston & Sampson Engineers, Inc.

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Hoyle, Tanner
& Associates, Inc.

Massport

McMillen Jacobs
Associates

Nitsch Engineering

Department of Civil
and Environmental
Engineering,
Northeastern
University

Skanska Civil

Tufts University

VHB

Weston & Sampson

FHWA - NHI - 130078:

Fracture Critical Inspection Techniques for Steel Bridges Tuesday, October 16, 2018 – Friday, October 19, 2018

Mott MacDonald, 101 Station Drive, Westwood, MA

Tuesday through Thursday, 8:00AM – 4:30PM

Friday, 8:00 AM – 2:00 PM

This training examines current practices, while addressing new and emerging technologies available to bridge inspectors. In addition, the course features classroom training; hands-on workshops for popular types of nondestructive evaluation (NDE) equipment; and a case study.

The first day of the training focuses on the concept of fracture critical members (FCMs), FCM identification, failure mechanics, fatigue in metal, and an overview of NDE methods. Day two includes demonstration sessions and hands-on applications of NDE techniques for dye penetrant, magnetic particle testing, Eddy current testing, and ultrasonic testing. Days three and four emphasize inspection procedures and reporting for common FCMs, including problematic details, I-girders, floor beams, trusses, box girders, pin and hanger assemblies, arch ties, eyebars, and cross girders/pier caps. The course will conclude with a case study detailing the preparation of an inspection plan of a fracture critical bridge.

Please note: Prior to taking this course, participants should have completed NHI course 130055, Safety Inspection of In-Service Bridges, or possess equivalent field experience relative to bridges. Participants also should have a thorough understanding of bridge mechanics and bridge safety inspection procedures as required by the National Bridge Inspection Standards. Please visit the NHI website at www.nhi.fhwa.dot.gov or contact them at 703/235-0500 for additional information on the prerequisite course requirements.

Registration Deadline: Friday, September 14, 2018

Registration Fees: \$1,325 Members, \$1,525 Non-Members

Registration fee includes course materials, continental breakfast, breaks, and lunch.

Information/Registration:

Attendance for this program is limited to 30 participants. Individuals who attempt to register after the course is closed will be added to a waiting list. Reservations will be accepted on a first-come first-serve paid reservation basis. Register to attend this course and pay by credit card online at <http://bit.ly/2NdZMTU>. To register online for an event at the BSCES member rate you must login using your BSCES assigned username and password. If you do not know your login information, call 617/227-5551. You can also register for this event by mail or email. To do so, download and complete a [BSCES Event Registration Form](#) and follow the submission instructions. Please note that cancellations or no shows received after September 14, 2018 will be billed.

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Nitsch Engineering
Department of Civil and Environmental Engineering, Northeastern University
Skanska Civil
Tufts University
VHB
Weston & Sampson



FHWA-NHI-130055

Safety Inspection of In-Service Bridges

Monday, December 10, 2018 – Friday, December 21, 2018

Hilton Garden Inn Worcester, 35 Major Taylor Boulevard, Worcester, MA
Monday through Friday, 8:00AM – 4:30PM

This 10-day course is based on the 2012 FHWA “Bridge Inspector’s Reference Manual” (BIRM) and provides training on the safety inspection of in-service highway bridges. Satisfactory completion of this course will fulfill the training requirements of the National Bridge Inspection Standards (NBIS) for a comprehensive training course. This course is not geared towards fracture critical, underwater, or complex structures. Mid-term and final examinations based on course content will be administered to participants.

Please note: To take this course participants must show that they have passed one of the following pre-requisite courses: FHWA-NHI-130054 *Engineering Concepts for Bridge Inspectors*; FHWA-NHI-130101, *Introduction to Safety Inspection of In-Service Bridges*; or FHWA-NHI-130101a *Prerequisite Assessment for Safety Inspection of In-Service Bridges*. A FHWA/NHI certification of completion with the participant name on it will be required to be presented to BSCES preferably at time of registration or no later than Friday, September 28, 2018. Please forward your prerequisite certificate in the form of a PDF document to bsces@engineers.org.

Registration Deadline: Friday, September 28, 2018

Registration Fees: \$2,900 Members, \$3,100 Non-Members

Registration fee includes course materials, continental breakfast, breaks, and lunch

Information/Registration:

Attendance for this program is limited to 30 participants. Individuals who attempt to register after the course is closed will be added to a waiting list.

Reservations will be accepted on a first-come first-serve paid reservation basis. Payment must be received with registration to secure a slot. Register to attend this course and pay by credit card online at <http://bit.ly/SafetyInspection2018>. To register online for an event at the BSCES member rate you must login using your BSCES assigned username and password. If you do not know your login information call 617/227-5551. You can also register for this event by mail or email. To do so, download and complete a [BSCES Event Registration Form](#) and follow the submission instructions. Cancellations or no shows after September 28, 2018 will be billed.