

## When is a Breach of Contract really a Breach of Contract?

by Joseph A. Barra, Partner and member of Robinson+Cole's Construction Group and Jonathan E. Small, Counsel and member of Robinson+Cole's Insurance +Reinsurance Group

Ever since Theodore Roosevelt was president, a party who *intentionally* breached its contract obligations in Massachusetts was precluded from recovering damages against the non-breaching party no matter how serious the breach or the injury. Under this 112-year-old rule, the breaching party forfeited its right to enforce the contract's terms against the innocent party regardless as to whether the obligation breached was a material or incidental requirement of the contract. That may now change.

On March 5th, the attorneys for a design-build contractor appeared before the Commonwealth's highest court arguing that it was time to bring Massachusetts' Forfeiture Rule into the 21st Century. The dispute in *G4S Technology LLC v. Mass. Technology Park Corp.* arose out of a \$45 million public works project to bring a 1,200-mile fiber optic network into western Massachusetts.

The project's design/builder, G4S Technology LLC ("G4S") originally brought suit against the project's owner, the Massachusetts Technology



Joseph A. Barra



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Park Corporation ("MTPC"), a state development agency, seeking to recover the \$4 million balance owed under the parties' contract and an additional \$10 million in delay/impact damages. MTPC refused to pay, relying in part upon G4S's late completion and alleged poor workmanship. However, MTPC also argued that G4S's failure to timely pay its subcontractors and suppliers, coupled with what is alleged to be false payment certifications, was an *intentional* breach of the parties' contract that resulted in a forfeiture of G4S's right to seek *any* damages against MTPC.

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## President's Report

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



Our world continues to evolve and change. Long gone is the time that engineers were considered as professionals who provide unbiased technical opinions and/or design based on engineering experience and sound judgement. Special interests are now casting doubts on sound technical and scientific data for the sole purpose of serving their own interest with total disregard to the public interest.

In early stages of engineering software programs, we used to call the computer the "idiot." Computer programs were as good as the

programmer and the user of the program. Unfortunately, despite having significantly more complex software programs, today's computer is still an "idiot." Current technology, unlimited internet information, and communication through social media made it easy to have access to accurate and inaccurate information.

Some engineers modify their structure or design to match the software program capabilities instead of adjusting the program parameters to match their design. I am proud to see so many engineers going the extra mile, studying the computer programs in depth, identifying glitches, better understanding the program

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parameters and limitations, and modifying these parameters to meet their design. The computer is only as smart as they are.

The vast available internet data is a great resource for engineers to assist them in their work. However, such data is only as good as the reader and if misused or misinterpreted is likely to lead us to erroneous conclusions or cast some doubt over our professional opinion. For inexperienced readers, there will always be some data or reporting that appears to contradict our judgements, recommendations, or summaries.

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## When is a Breach of Contract really a Breach of Contract?

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The trial court agreed with MPTC, finding that G4S had repeatedly and intentionally withheld past due payments from its subcontractors while at the same time, falsely represented to MPTC that those same subcontractors had been paid. Relying upon Massachusetts' 112-year Forfeiture Rule, the court dismissed *all* of G4S's claims.

### I know I did wrong, but look at the consequences...

On appeal, G4S seeks to reverse the trial court's dismissal, alleging that the court relied upon outdated case law that required strict contract compliance as a precondition to maintaining its \$14M suit against MPTC. G4S contends that the consequences of forfeiture are substantially outweighed by its breach and seeks to tweak the existing Rule by inserting a "materiality" criterion into its structure. Under G4S's proposed modification, only an "uncured, *material breach*" should preclude the breaching party from seeking recovery under the contract. As an alternative to its materiality suggestion, G4S urges the top Court to adopt a "substantial performance" rule, one which would allow G4S to recover, but for less than its strict and complete performance.

Given that the Forfeiture Rule applies principally to contractual relationships, it is not entirely clear how the outcome of this decision could impact designers whose duty to their clients is typically a mix of both contract and professional negligence. This legal cocktail, commonly referred to as "malpractice," protects design professionals by imposing a legal yardstick referred to as the "professional standard of care." Generally speaking, a design professional will not be liable for malpractice unless it breached this professional standard. This yardstick gives designers some flexibility for errors in judgment so long as their performance is consistent with the practice of like professionals under comparable circumstances in the same or similar location.

### If it's ok to intentionally breach a contract, then what about my unintentional breach of the professional standard of care?

Altering the Forfeiture Rule to include a materiality element in the context of design professionals could ultimately alter the length of the yardstick by which design professionals are measured. For example, under current malpractice trial protocols, an expert is needed to define the professional standard of care and how the designer either complied with or breached that standard. The materiality of the professional duty alleged to have been breached is naturally factored into this calculus. In fact, the "intent" of the alleged wrongdoer is usually not relevant to the legal equation, because malpractice claims typically involve *unintentional* conduct (think negligence).

Nevertheless, if G4S is successful in convincing the High Court to soften the current Forfeiture Rule for contract actions based upon an *intentional* conduct, it may likewise be argued that by extension, the consequences of a design professional's *unintentional* conduct should similarly be softened to reflect a 21st century viewpoint.

The Supreme Judicial Court will most likely decide the G4S case within the next four months. Stay tuned.

*Joseph A. Barra, Esq. is a Partner in the Boston office of Robinson+Cole, LLP. Joe is a degreed civil engineer and has been practicing Construction Law on behalf of owners, contractors and design professionals for nearly 30 years.*

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# Evaluation & Design Considerations for Unique Facility Pipeline Upgrade Project

by David Lessard, Senior Engineer and Michael Tupper, PE, PMP, Engineering Manager, National Grid

National Grid recently undertook a unique pipeline replacement project at a natural gas facility located in Southeastern Massachusetts. The overall project consisted of replacing a substantial amount of natural gas piping which involved multiple pressure systems along with the installation of several pressure regulating devices. This article will focus on three major components which made this project a unique and complex challenge from an engineering and construction perspective. First, evaluating the existing pipeline configuration at this location which consisted of two primary systems – send-out gas and plant/fuel gas supply. Second, the design of an optimal proposed pipeline upgrade configuration and associated pressure regulating equipment required to meet the needs of the facility. Third, identification of some key design and construction considerations required to successfully complete the project. Integration of the above three major components and coordination with the operations of the facility were key elements in the development of a comprehensive engineering design for this project.

This facility operates two natural gas pipeline gas systems. These systems include both a send-out gas system and plant/fuel gas supply. The send-out gas system consists of two sub-systems identified as the primary send-out and boil-off send-out. As indicated by its name, the send-out systems deliver natural gas from the facility to either the distribution pipeline network or the transmission pipeline network. The primary send-out supplies transmission pressure gas, while the boil-off supplies distribution pressure gas. In addition, a “cross-over” connection which ties the two pressure systems together exists with normally closed valves. While these valves are in the normally closed position, this “cross-over” does allow plant operational personnel to manually operate the valves to supply either the primary or boil-off system should the situational need arise. The other pipeline system at the

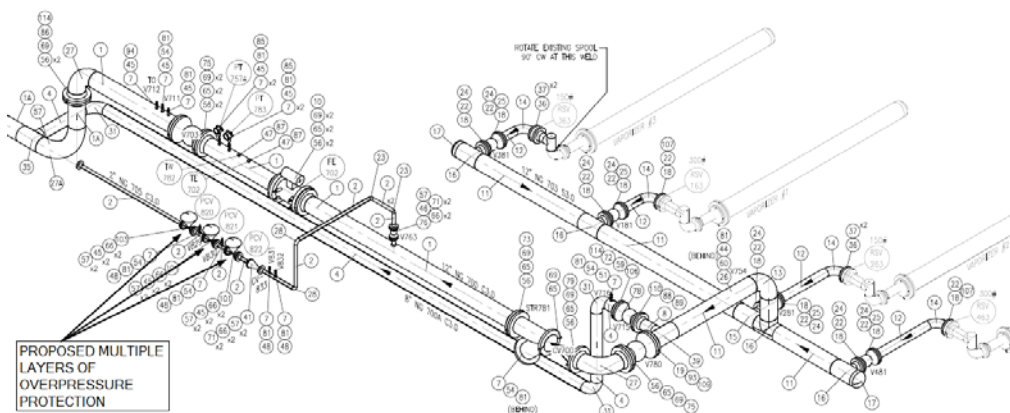


Figure 1 – Isometric detail of primary send-out run and “cross-over” connection

facility consists of the plant/fuel gas supply which utilizes distribution pressure gas to operate several pieces of critical equipment at the facility. The plant/fuel gas is principally supplied through a connection off of the send-out gas system; however, given the critical nature of the facility, a secondary/back-up supply also exists from the distribution network. Developing a full understanding of these uniquely integrated systems served as the basis for the development of a comprehensive engineering design of the replacement pipeline system at this facility.

The primary drivers for the design of the replacement system included improving the safe and reliable operation of the system along with maintaining all of its current functionality. The replacement design started with the identification of an optimal pipeline layout which captured both safe design practices and operational efficiencies. The proposed layout provided several key improvements to the system operation including; a centralized metering and equipment location, increased separation distances from the facility buildings and structures and the installation of additional

layers of overpressure protection utilizing multiple pieces of pressure regulating equipment. Figure 1 shows an isometric view of the proposed primary send-out run along with the multiple layers of overpressure protection on the proposed “cross-over” connection.

These improvements provided important benefits to the overall operation of the facility. The centralized metering and equipment location allowed for improved operational efficiency in the maintenance of pressure regulating equipment, isolation valves and controls. While, the increased separation distance and additional overpressure protection provided key process safety related improvements to the overall operation of the facility.

To allow for the successful installation of the proposed pipeline system, several factors were taken into consideration during the final design & construction phases of this project. One factor involved considering and working around constraints resulting from the normal operation of the facility, specifically including any plant process interruption. This included working adjacent to

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## Evaluation & Design Considerations for Unique Facility Pipeline Upgrade Project

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the existing plant process piping as seen in Figure 2. The contractor coordinated these activities with the operations of the facility and ensured the protection of existing process areas during construction. In addition, the new send-out systems were installed prior to tying over the live system in as many instances as possible. This installation method limited the downtime of ongoing plant process operations. Construction coordination and testing requirements also played a critical role as this project involved both distribution pressure and transmission pressure systems. In this situation, the pressure testing phase of the construction work required close coordination between the construction personnel and project engineering. A segmented pressure test consisting of five phases was ultimately required in order to appropriately pressure test each component of the installed pipeline. Each pressure test segment identified specific parameters (test pressure, test medium and test duration) required for completion. Incorporation of these design and construction considerations, along with close coordination between engineering and construction personnel in the field were key elements in the success of this project.



Figure 2

It is clear that a thorough knowledge and understanding of the various operating elements of this system was an important component of the successful execution of the project. In reviewing the existing system, the send-out systems are a major component to the overall operation as they deliver natural gas from the facility to either the distribution or transmission pipeline networks. The secondary, but integrated operating system at the facility for the plant/fuel gas system plays an equally important role in supplying and maintaining the equipment which allows the facility to operate in a safe and reliable manner. Understanding these systems on both an individual level and from a combined, overall facility operational perspective allowed for the development of the comprehensive design of the new installation and allowed the incorporation of several key improved safety and design features. Incorporation of the detailed knowledge of the existing system, proposed design modifications and improvements, along with close coordination between construction and engineering, allowed for the successful execution of this project.

## BSCES Holds Workshop on Innovative Financing Methods for Large Projects in Massachusetts

*by David Westerling, PhD, PE, PLS, Emeritus Professor, Department of Civil and Mechanical Engineering, Merrimack College*

The Government Affairs and Professional Practice Committee (GA&PP), the Construction Institute (CI), and the Transportation & Development Institute (T&DI) Boston Chapters combined to sponsor a workshop on Innovative Financing Methods for Large Projects in Massachusetts at the Federal Reserve Bank Boston. Held as a Friday morning breakfast meeting the workshop was designed to present some case studies of innovative financing methods being used today for the design and construction of large projects.

Bill Lyons of Fort Hill Companies, LLC introduced the program and welcomed the speakers.

Sol Carbonell, assistant vice president of the Federal Reserve Bank, opened the workshop with a welcome to attendees and a brief talk on the Bank's Community Outreach Programs. Some program features such as job training dovetail with large project focus on a trained workforce. An example was if a large tunnel boring project was undertaken in Boston, a workforce training effort for local workers should be an early emphasis for project managers.

Joseph Aiello of Meridiam Infrastructure, presented a review of the Purple Line project. Maryland

DOT and the Maryland Transit Administration pursued an innovative solicitation approach with the Purple Line. The state has solicited a single private partner (concessionaire) who will be responsible for designing, constructing, operating, and maintaining the project, and the private partner will also help finance a portion of construction. On March 2, 2016, Governor Larry Hogan announced Purple Line Transit Partners as the concessionaire for the Purple Line. This partnership with private industry, commonly referred to as a public-private partnership (PPP or P3), will promote the successful delivery of the Purple Line.

Stephen Fitzroy of EDR Group then presented a review of Long Term Economic Analysis of Large Projects. The long-term analysis often extends through the life of the project, perhaps 40 to 50 years or more. Economic impacts often extend well beyond the project's footprint into the service area to satellite cities and possible future connections. Both public benefits and the benefits of private development spurred by the project should be considered. Also, the use of special tax districts where existing properties will

benefit from projects should be outlined as possible revenue areas for the project.

Grant Huber, senior director of commuter rail strategy for the MBTA presented his thoughts on the needs to maintain and improve existing rail infrastructure while doing so under the umbrella of a long-term strategy of where the infrastructure system would like to be. He used examples of rail systems he has experience with around the globe. Most systems have an overall plan which is the focus of both system maintenance and future improvements. Most systems also look at connectivity needs which improve efficiency as keys to success. In Boston, the North-South Rail Link is a good example.

After a short networking break the workshop continued as a panel discussion with comments and questions from audience participants. A lively discussion followed with much focus on P3 methods, Design Build Finance Operate and Maintain, and Concession type arrangements. Almost all workshop participants either asked a question or made important comments.

The BSCES workshop joint planning committee will look to a follow-up workshop next fall.

## President's Report

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And of course, there will always be one who is available to second guess any technical views. There is always the risk that professionals will be challenged and we must be prepared and vigilant to defend the integrity of our work.

In the increasingly litigious society we live in, legal issues in our profession are on the rise. Engineers' work is increasingly scrutinized for potential errors, omissions, and cost recovery. Engineers' work is streamlined to satisfy criteria set by non-engineers to reduce the company risk and exposure. Quality of work is more measured by the number of errors, omissions, change orders, etc. related to the engineer's work. Standard of care, generally acceptable engineering practice, and other legal terms are becoming part of our daily professional work. Project selection is no longer based just on the company's experience, but on the level of risk the company is willing to take measured against the financial return. Such decisions are likely to be made not solely by engineers.

To further exacerbate our legal issues, agreements between companies, individuals, and even nonprofit organizations such as BSCES must go through legal counsel. I have served on the BSCES board in different capacities for many years. Simple agreements, many of which used to be verbal, must now be written and be reviewed by legal counsel on both sides. I would like to thank Tara Hoke, ASCE legal counsel for making herself always available for numerous BSCES inquiries and agreements.

While engineers are exposed to greater risk and liabilities, our clients are tightening the fees for the engineering professional services under the assumptions that technology is doing most of the technical work. To meet client demands and limited budget, some engineers' interaction with the software programs resembles production lines with very limited innovation.

Engineers need to adapt to these changes to survive and advance in their careers. Engineers should be versatile to succeed in their profession and deal with these realities. While doing their engineering work they should be mindful of the implication of their efforts and their exposure to risk and litigation. Companies provide legal counsel and have insurance coverage. However, it is important to reduce a company's risk, exposure, and legal and insurance costs by providing work that is less prone to litigation. This is part of doing our job.

Consequently, advancing in your career is not solely dependent on your technical knowledge and capabilities. Your political, environmental, and legal knowledge and understanding have more influence on your career than your technical capabilities. One of the most exciting benefits of active participation in BSCES is that we are sharing information and preparing you for the legal, ethical, and business issues that are impacting our industry. We are making you better prepared to be successful, take informed risks, and leverage your opportunities. Our members are advancing themselves and the industry with experience, knowledge and strategic influence.

The best way to advance in your career is to learn from the mistakes and experience of other engineers and what is involved in common engineering practice and standard of care. By being an active BSCES committee member, sharing experience with your peers, and participating in various events you will have the opportunity to gain more accurate knowledge no internet data or office experience can ever provide. Furthermore, you will be able to participate in setting the standards and laws of our profession.

Many companies compensate their engineers for being active outside their offices. They understand the various benefits of having informed engineers working for the company. However, being an active engineer should never be dependent on company compensation. The technical and non-technical benefits to you are very important for your professional development and are not tied to a specific company. The benefits extend beyond the work space to your personal life and your family.

Becoming active on BSCES committees, active in your local community, and active on state or national professional committees related to your field of expertise is now an inseparable part of doing your job.

Capturing the current trends, we are starting a periodic legal corner in the *BSCESNews*. Special thanks to Joe Barra Esq. of Robinson+Cole, LLP for writing this month's legal article. Please be sure to read Joe's article, which can be found on page 1.

The featured group for the newsletter is the ASCE Construction Institute Boston Chapter. This group is chaired by Hans T. Kuebler, Howard/Stein-Hudson. Please be sure to read Hans's report on the group's activities, which can be found on page 8.

Donations and sponsorship are lifelines for our organization. Our programs and activities remain viable with this important financial support. I'd like to once again thank our Society Sponsors and Program Sponsors for their commitment to our programing. I would particularly like recognize and extend a special thanks to Robinson+Cole, which is a Society Sponsor and the sponsor of this issue of *BSCESNews*. Your individual donation is also appreciated. I thank you for your support.



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## South Basin Land Reclamation, Bermuda

by Aiden Horan CEng, Project Manager, Cashman Dredging & Marine Construction, Shawn Wyatt, Vice President, Cashman Dredging & Marine Construction, Stephen Tobin, Vice President, Cashman Dredging & Marine Construction, Rian Johnson PE, SE, Principal, PND Engineers, and Richard Noel, Project Manager, BCM McAlpine Ltd.

Waterfront space in Bermuda comes at a premium due to the demand and the lack of availability within the island nation. To this end, approximately nine acres of land was reclaimed from the South Basin in Sandys Parish on the West end of the island over a 10-month period from October 2015 to July 2016 by Cashman Dredging & Marine of Quincy, MA. This reclaimed land served as the staging area for the event village of the 2017 Americas Cup sailing competition and will be repurposed following the race. As part of the reclamation process, approximately 230,000m<sup>3</sup> (~300,000yd<sup>3</sup>) of fill material was imported to create the new land mass. 107,000m<sup>3</sup> (~140,000yd<sup>3</sup>) originated from a dredging operation in Bermuda's North Navigation Channel which provides deep draft access to the West end of Bermuda while the balance was imported from Canada via bulk carrier. The project was constructed under a design-build contract issued by the West End Development Corporation based in Bermuda.

The new land reclamation was bounded on the South and East sides by an existing masonry block breakwater constructed in the early 1900's. The 411m (~1,348ft) long boundary on the North and West sides required a steel bulkhead due to the deeper subsea surface. Cashman selected PND Engineers' OPEN CELL SHEET PILE™ system as the most cost-effective bulkhead solution as a value engineering alternative to the owner proposed design. The wall design was adapted to the project site across changing subsurface conditions which included deep marine silts and shallow limestone bedrock.

Figure 1 shows an aerial view of the South Basin in the Royal Navy Dockyard looking from the South-West towards the North-East direction. The masonry breakwater wall built in the early 1900's can be seen on the South and East. An



**Figure 1.** Aerial View of South Basin (view looking from SW to NE)

existing island outcrop, Cross Island, is shown in the lower mid-right-hand side of the photograph where the breakwater wall also turns.

The North Channel dredged material was dumped outside the nine-acre footprint as there was not enough available draft to discharge within the reclamation area. As a result, the dredge material required re-handling to the correct location. This material came from a separate dredging contract involving the deepening of the North Channel which provides deep draft access to Bermuda for cruise ships; work that preceded the land reclamation project.

The remaining 122,500m<sup>3</sup> (~160,000yd<sup>3</sup>) was brought to the island via self-discharging bulk carrier from New Brunswick, Canada. The self-discharging bulk carrier (MV Venture) is shown

in Figure 1 during an offload cycle. The bulk carriers self-offloading arm was long enough such that the imported fill could be placed inside the nine-acre footprint upon discharge. However, due to the draft limitation of the split-hull dump scow, the dredged material required re-handling to place it inside the nine-acre footprint. The entire volume of 107,000m<sup>3</sup> (~140,000yd<sup>3</sup>) of dredged material was relocated with the Cashman owned clamshell bucket dredge, Dale Pyatt, using a 21.5m<sup>3</sup> (28yd<sup>3</sup>) heavy duty digging bucket. This dredge is shown to the middle left of Figure 1. This material required several rounds of re-handling given the dispersal zone from the bottom discharging hopper. Both the Canadian fill material and North Channel material was placed directly on top of existing basin sediments within the reclamation area.

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## South Basin Land Reclamation, Bermuda

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The project utilized a proprietary OPEN CELL SHEET PILE bulkhead design developed by PND Engineers of Seattle, WA. The OPEN CELL bulkhead acts to create a vertical face at the periphery of the reclaimed land area not bounded by the existing breakwater. The face of the OPEN CELL bulkheads consists of a series of vertical, cylindrical arcs constructed with PS31 flat sheet piles. Each cell face arc is tied to the adjacent cell arc along their full height with three-way wye piles which also connect to PS27.5 flat sheet tail-wall anchors extending away from the face arcs back into the reclaimed soil mass. Pile lengths are designed to match the changing subsea elevations and subsurface conditions. An isometric view through a typical OPEN CELL bulkhead can be seen in Figure 2.

The existing soil stratigraphy in the basin included areas of deep marine sediment and shallow bedrock. Additionally, site boring indicated areas of limestone layers over the top of softer sands and silts. In response to this variability, PND design the OPEN CELL bulkhead system in sections to adapt to the varying soil stratigraphy. The bulkhead was evaluated using traditional 2D geotechnical stability methods. Additionally, the bulkhead was modeled using PLAXIS 3D software to model the behavior and serviceability characteristics of the system.

Since the OPEN CELL System was installed away from the existing shoreline, the backfill material behind the bulkhead had to be placed directly into a water column to depths of 40 feet below sea level. These deep layers of fill required densification. The three primary reasons for densification of the fill were 1) to limit long-term settlement of the surface of the land reclamation behind the bulkhead 2) to impose lateral pressures on the OPEN CELL bulkhead to impose peak horizontal deflections for the system and 3) to

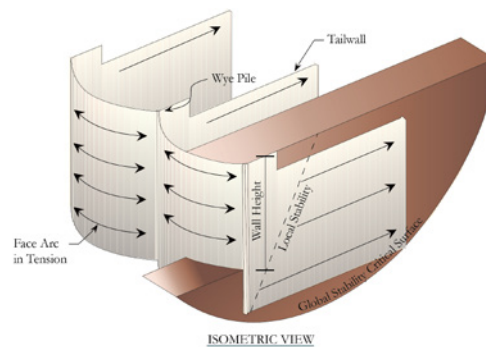


Figure 2. Typical isometric view on OPEN CELL system

meet the contractual requirements of the project. The cellular system was well suited for the deep soil compaction which occurred after sheet pile installation. The deep soil compaction was performed using a vibroprobe. A custom vibroprobe was fabricated using an H-Pile with angles welded at regular intervals to impose horizontal and vertical soil compaction. The vibroprobe was installed using the same vibratory hammer which drove all the flat web sheet piles on the job. The vibroprobe was inserted into the backfill soil column on a regular triangular grid pattern to a depth matching the installed pile tips of the OPEN CELL bulkhead. The result of the deep vibrocompaction was visually evident as backfill surface settlement, crater formation around the vibroprobe and overall volume loss of the fill material within the cell. Overall, the estimated vertical settlement of the backfill material ranged from 5–10% of the total fill volume placed. The vibrocompaction allowed the tailwall sheet pile sections to fully engage the backfill material so that no additional horizontal deflections in the system were observed by survey after completion of the vibrocompaction process.

The OPEN CELL system was coated with a glass-flake embedded epoxy to provide long-term



Figure 3. Typical view on vibrocompaction operation showing compacted cells

corrosion protection of the sheet piles. Additionally, the submerged portion of the bulkhead wall was protected from corrosion by anodes placed at regular horizontal and vertical intervals. Once the OPEN CELL bulkhead had been backfilled, a concrete pile cap was cast in place to provide a straight-line surface finish. This pile cap overhung the water's edge of the reclaimed area and structurally supported by the face arc sheet piles acting in series. Utility outlets were incorporated into the pile cap at set intervals. The pile cap dimensions were made much larger at each end of the project where the flexible end cells met with the existing rigid breakwater masonry breakwater. To ensure no loss of backfill material between the OPEN CELL bulkhead and the existing breakwater, a concrete plug was placed in the interstitial zone using underwater tremie methods in the area where the curved cell wall met with the existing straight breakwater.

The land reclamation area was completed on time and on budget by Cashman in July 2016. This allowed the West End Development Company time to complete final surface treatments and construct buildings and viewing stands to successfully host the 2017 America's Cup sailing race.

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## Featured Group

### Construction Institute—Boston Chapter: Spring Forward

by Hans Kuebler, EIT, Civil Engineer - Howard Stein Hudson, and Chair, Construction Institute Boston Chapter

As we enter March we are fully entrenched in the new year, with the days getting longer, winter close to being behind us, and a new construction season is upon us and continues to thrive and transform the evolving landscape around the city. From the Seaport District rising from 23 acres of parking lots into 6.3M square feet of mixed-use development, to the \$3B Longfellow Bridge rehabilitation project coming close to completion, vertical and horizontal construction alike continues to shape the way we view, live and traverse the city and region.

Just as construction within the city is expanding, the Boston Chapter of ASCE's Construction Institute (CI) continues to as well. The mission of the CI Boston Chapter is to advance the state of the art in construction technology, equipment, and techniques; to provide and encourage the advancement of education and research in construction engineering; to provide a forum for the exchange of ideas between all who have an interest in the engineered project; and to encourage interaction between designers, contractors, owners and other professionals associated in the construction industry.

We promote the exchange of ideas to hear, debate, and discuss current issues and the future of the profession and offer possible solutions across our industry sectors. We do this internally through chapter meetings, and elsewhere offering events to provide an insight into different sectors that may be of interest to our members. Like most successful projects, we have focused on collaboration to broaden our reach and learn alongside our peers. This has resulted in hosting events with other BSCES groups on projects and topics spanning across various agencies from both public and private perspectives.

In November 2017, in collaboration with the BSCES Transportation and Development Institute (T&DI) Boston Chapter, we hosted a site tour of the Casey Arborway Project located in the Jamaica Plain neighborhood of Boston. The overpass was an elevated section roadway carrying the Arborway over the major thoroughfares of Washington Street and South Street. The area around the overpass serves many neighborhoods and modes of transportation. In 2010, the overpass was determined to be structurally deficient, suffering from numerous superstructure and substructure problems due to a combination of deterioration and original design flaws and beyond the point of effective repair.

The \$74M project includes the demolition of the Casey Overpass and subsequent at-grade reconstruction of Arborway. Once complete, the project will have created 1.3 Acres of new parkland with a net of approximately 560 trees, permeable pavers, 3 miles of bicycle paths and lanes, and over 3 miles of pedestrian areas, as well as improvements to the MBTA station with a new Head-House and improved access. This required the collaboration of multiple city and state entities with the private design and construction team to reinvigorate the area.

Led by a portion of the project team including the prime design consultant from HDR, general contractor from Barletta, and public outreach from HSH, the technical tour led participants around the project site to highlight the scope and scale of the work. By this point in the construction schedule the overpass was long gone, so pictures were provided from various perspectives as we walked along the site to understand just how much has changed. Following the site tour, the group debriefed and relaxed close by at Doyle's Cafe for a networking event.

In early February 2018, the CI and T&DI Boston Chapters once again teamed up, this time with the BSCES Government Affairs & Professional Practice Committee (GA&PP), for a follow-up to the GA&PP's successful Public-Private Partnership (P3) seminar in April 2017 on the Port of Miami Access Tunnel and other P3 developments. Held at the Federal Reserve Bank of Boston, the seminar focused on P3 including the design, build, finance, operation, and maintenance. Sol Carbonell, Federal Reserve Bank, assistant vice president, community development outreach provided opening remarks before turning it over to moderator William Lyons Jr., PE, president & CEO, Fort Hill Companies, LLC, to lead the mornings event. Joseph Aiello, partner and board member with Meridian Infrastructure, once again joined us, this time alongside Stephen Fitzroy, executive vice president, EDR Group, and Grant Hauber, senior director of commuter rail strategy, MBTA, Newton Center to provide presentations on the Maryland DOT and how the Maryland Transit Administration pursued an innovative solicitation approach with the Purple Line, Need for Long Term Economic Analysis and Managing Large Projects. A panel discussion followed with the group to present some of their worldwide experiences in managing large infrastructure projects.

Looking ahead in this new year, the 29th Annual Francis M. Keville Dinner will be held on Tuesday, May 1st, at the Courtyard Marriott Boston Downtown. A joint meeting hosted by the Keville Committee, CI Boston Chapter and the Boston Chapter of the Transportation & Development Institute (T&DI), this celebration of the late Francis Keville fills its venue to capacity year in and year out. The Francis M. Keville Memorial Fund was established in 1989 from donations in recognition of Mr. Keville's efforts and abilities to take his vision of large public transportation projects and make them a reality. The fund provides a forum to discuss important aspects of transportation and construction-related matters through an annual function. The fund provides, through a competitive selection, a scholarship to students at Northeastern University in recognition of achievement or promise in transportation and/or construction. From time-to-time it also provides a grant to a worthy activity enhancing the transportation and/or construction-related field. This year's keynote speaker is the chair, fiscal and management control board of the MBTA, Joseph Aiello. Mr. Aiello will be introduced by Braintree mayor and Massachusetts Department of Transportation (MassDOT) board member, the Honorable Joseph Sullivan.

Also, upcoming this year, members of the CI Boston Chapter will be preparing for another CI Boston Day-Summit after the successful full-day seminar from December 2016. Planned again for December, this event will follow the model of a typical day at an ASCE national conference. Starting with breakfast and a welcome, the day will be subdivided into a series of technical sessions separated by networking breaks. Each technical session will include a few presentations, including a mix of project case studies, roundtable discussions, and interactive training programs. A variety of vendors will also be invited to participate to showcase their products and services that they provide to our industry. With the planning sessions for the event now starting to take shape, we welcome member participation in these sessions and are accepting proposals for presentations that you or your company may want to contribute for another exciting day.

We welcome and encourage participation in the Boston Chapter of ASCE's Construction Institute in general as well. If you are interested in joining our group or have ideas for future meeting topics, please feel free to contact me at 617/348-3315 or [hkuebler@hshassoc.com](mailto:hkuebler@hshassoc.com).



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

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



This is a busy time for the Legislature with budget bills and reporting deadlines for committees. February 7 was supposed to be the last day for reports to be made from the joint committees, but the Legislature extended

the reporting dates for several bills. Up to date information on these bills isn't always readily available, however.

The Joint Committee on Environment, Natural Resources and Agriculture reported favorably on H. 2139, and referred it to the House Committee on Ways and Means. H. 2139 would require a study of the state's water pollution programs, including the NPDES permit program. Some see this as an alternative to H. 2777, the Governor's bill to authorize state delegation of the NPDES permit program. The Legislature extended the reporting date for H. 2777 to March 10, and I'm not aware that any further action has been taken.

The Legislature extended to March 2 the reporting date for H. 1813, and I've been told that the bill was reported favorably by the Joint Committee on Transportation. This is the bill pertaining to the "Dig Safe" system and Professional Land Surveyors working on preliminary designs for projects where excavation is necessary. This bill would give Professional Land Surveyors access to underground utility information at the preliminary design phase of a project. They have advocated this for years as a

way for surveyors and engineers to produce more accurate design plans, thereby reducing problems during construction.

The Joint Committee on Housing redrafted the Governor's "housing choices" bill (H. 4075) and referred it the House Committee on Ways and Means with a favorable recommendation. The Governor's bill was part of his administration's Housing Choice Initiative to promote housing production through incentives, rewards, and technical assistance. It has a goal of 135,000 new housing units by 2025. The Legislature's new version of the bill, H. 4290, is similar to the previous version. The reporting date for the Legislature's two zoning reform bills (H. 2420/S. 81) had been extended to March 7, and their fate seems unclear now.

Other bills that are moving forward include the following.

### **Bills referred to the Senate Committee on Rules, under study order S. 2277:**

S. 1977, regarding state funding and design of roads in accordance with local speed limits.

S. 1981, to change the composition of the MassDOT Board.

S. 1994, to require a five-year "Fix It First" plan for existing transportation infrastructure.

S. 2004, to authorize a study of flaggers and police details on public works projects.

S. 2234, to authorize one vehicle license plates instead of two.

### **Bills redrafted and referred to the House Committee on Rules:**

H. 4133, to study the effects of coastal and ocean acidification (formerly H. 472, 2122, and S. 410).

### **Bills redrafted and reported favorably:**

S. 2299, pertaining to use of automatic license plate readers (ALPRs) (formerly S. 1909, one of three bills originally proposed pertaining ALPRs and their data, the others being H. 3439 and S. 1936).

H. 4280, to establish a Cape Cod Water Protection Trust for wastewater and water projects (formerly H. 3902/S. 2163).

### **Bills reported favorably:**

H. 1896, to create an Office of Maritime Planning and Policy Development.

S. 2217, to authorize reduced speed limits and increased fines in construction zones.

H. 2741, regarding insurance requirements for privately owned, publicly used railway and roadway tunnels.

### **Bills with extended reporting dates:**

S. 1966, regarding life-cycle costs of different pavement types used on MassDOT projects.

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 at [bclemence@verizon.net](mailto:bclemence@verizon.net).

## Volunteer Opportunities

### Outreach Volunteers Needed!

by Olivia A. Richards, PE, Structural Engineer, Gill Engineering and BSCES Public Awareness & Outreach Committee Chair

The BSCES Public Awareness & Outreach Committee needs volunteers to make classroom presentations and to represent the civil engineering profession at the following committee-supported events:

#### **Henry Grew Elementary School (BPS) Career Day**

**Date:** Thursday, March 29, 9:00 AM – 2:00 PM

**Location:** Henry Grew Elementary School, Hyde Park, MA

**Overview:** Engineers to give a brief, 20-minute, presentation to students about their career

**Looking for:** Engineers who are interested in speaking to elementary school students about their career. Engineers will explain what they do, how they chose their profession, and what education or training they needed. Volunteers are invited to come anytime during the day and present to as many classrooms as they please. A one-hour visit would result in presenting to

three classrooms. Please email [Olivia Richards](mailto:Olivia.Richards@verizon.net) if you are interested in attending.

#### **Girls STEM Summit by Jr Tech**

**Date:** Sunday, April 8, 12:30 – 2:00 PM

**Location:** Regis College, Weston, MA

**Overview:** Girls from all over the state attend this Summit on careers in STEM

**Looking for:** Engineering volunteers to help represent civil engineers at the BSCES Expo

*continued on page 10*

## Volunteer Opportunities *(continued from page 9)*

table. Girls visit tables representing different aspects of STEM and ask us what our careers are like in civil engineering. They are interested in hearing about what we do at our jobs, what we do in college, and how we decided on civil engineering. We will be showcasing aspects of civil engineering and talking to girls about the industry. Please email [Olivia Richards](#) if you are interested in attending.

### 11th Annual Cambridge Science Festival

**Date:** Saturday, April 14, 12:00 PM – 4:00 PM

**Location:** Cambridge Rindge & Latin Field House, Cambridge Public Library, Broadway and Ellery Street

**Overview:** A huge STEM Expo founded by collaborators from MIT, Harvard University, the City of Cambridge and the Museum of Science. [Click here](#) for more information.

**Looking for:** BSCES will have a booth at the Science Carnival and Robot Zoo Event, which is an expo-style event with almost 100 booths providing hands on activities and demonstrations for the public. It is the largest and most publicized exposition that the BSCES Outreach Group attends. We need volunteers to help with activities relating to bridge building, block towers, etc. All volunteers are welcome—engineers and engineering students. Please contact [Olivia Richards](#) if you are interested!

## Recent News and Updates

### Renew Your BSCES Membership for 2018!

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

### BSCES Welcomes its New Members

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

#### Members

Suny Bhagat, Nitsch Engineering  
Heidi Cashman, GeoEngineers, Inc  
Adrian Charest, Building Systems Design  
Shannon Griffin, Andover, MA  
Balu Gudimetla, Billerica, MA  
Raymond Hu, PEER Consultants PC  
Hadi, Kazemiroodsari, Brighton, MA  
Jason Keohane, HNTB Corporation  
Paul Molloy, BSI Engineering, Inc  
Michael Panethiere, Massachusetts Institute of Technology  
Yashvi Patel, Waltham, MA  
Nisheet Pinnapu Reddy, Malden, MA  
Chris Tsinidis, GZA GeoEnvironmental, Inc.  
Jaime Vasquez, WSP  
Ariana Wetzel, GEI Consultants  
Meng Xiao, Gannett Fleming  
Yixang Yuan, GZA GeoEnvironmental, Inc.

#### Students

Atakan Akcam, University of Massachusetts Dartmouth  
Mariam Alhashili, Northeastern University  
John Ballerini, University of Wyoming  
Albert Chang, University of Massachusetts Amherst

Susannah Davis, Smith College  
Masoud Fakhrafar, University of Massachusetts Dartmouth  
Beatriz Feijoo Gomez, Northeastern University  
Victoria Friesen, University of California, Los Angeles  
Paul Gahinet, University of Massachusetts Lowell  
Jill Gosnell, Northeastern University  
Patrick Kimball, University of Massachusetts Amherst  
Samantha Kinnaly, Northeastern University  
Lydia Lee, University of Massachusetts Amherst  
Emma Loughlin, Wentworth Institute of Technology  
Aaron Manzali, McGill University  
Sean Mavilia, University of Massachusetts Lowell  
Sarah Meurer, University of Massachusetts Lowell  
Michael Orbank, Northeastern University  
Shreeya Pandey, University of Massachusetts Amherst  
Sofia Puerto, Tufts University  
Jorge Rivera Cruz, University of Massachusetts Amherst  
Nicholas Sia, Bucknell University  
Michael Tracey, Northeastern University  
Aravind Uthaman, Northeastern University  
Thomas Waterfield, University of Massachusetts Amherst  
Marielle Waters, Northeastern University  
Jonathan Williams, Northeastern University  
Eric Wineteer, Northeastern University

### 2018 ASCE Election Ballot Released

ASCE has released their 2018 election ballot to members at the beginning of March. Online voting opens May 1 and closes June 1. Members at the grade of Associate and above in good standing as of April 1 will be eligible to vote. The online ballot

will display the contests members are eligible to vote for, based on the region they live in, and in the case of technical region director, if they are members of an ASCE Institute. For more information or to view the online ballot, [click here](#).



BSCES Senior Vice President Bruce Jacobs accepts an ASCE Outstanding Section and Branch Award on behalf of BSCES from ASCE 2018 President Kristina Swallow.

### Bruce Jacobs Accepts ASCE Awards on Behalf of BSCES

BSCES was recently awarded the 2017 Outstanding Section and Branch Award for Very Large Sections and Branches and 2017 Outstanding Section and Branch Web Award for Very Large Sections and Branches. BSCES Senior Vice President Bruce Jacobs, Earthsoft, accepted the two awards on behalf of BSCES at the 2018 Regions 1, 2, 4 and 5 Multi-Region Leadership Conference on Saturday, February 10, 2018 in Buffalo, NY.

**SEND US YOUR NEWS!** Looking to strengthen the community that is BSCES, the BSCES Executive Committee and Newsletter Editorial Board has decided to expand the content of this *BSCESNews* Recent News and Updates column by including more member news. Have you recently been recognized for a professional accomplishment, passed the Professional Engineer Exam, received a promotion, or changed employers? If so, send your news items to BSCES Association Manager, Rich Keenan, [rkeen@bsces.org](mailto:rkeen@bsces.org).



## Upcoming Events

For more information and to register for events, please visit [www.bsces.org](http://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.

### 2018 John R. Freeman Lecture

**Tuesday, April 10, 2018**

Massachusetts Institute of Technology  
Tang Center, 70 Memorial Dr., Building E51  
Cambridge, MA

6:00 PM Reception; 7:00 PM Lecture

**Water, Sanitation, Hygiene, and Engineering in International Humanitarian Response: Lessons Learned from Haiti and Worldwide**

Daniele Lantagne, Professor, Department of Civil and Environmental Engineering, Tufts University  
Worldwide, both the number of emergencies and the number of people affected by emergencies are increasing. Depending on context, affected populations may have both material and health needs. Water, sanitation, and hygiene (WASH) provisions are often critical needs in humanitarian contexts. The 2018 John R. Freeman Lecture will begin with a history of humanitarian response, followed by a discussion of the current humanitarian landscape (including types of emergencies, affected populations, and their health needs), the types of emergency WASH interventions, knowledge gaps in WASH response that engineers can help fill, and thoughts on the future of humanitarian response. The talk will be grounded with field experiences from Dr. Lantagne's 16 years of work in humanitarian response in over 50 countries, focusing on Haiti.

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

### 2018 Bertram Berger Seminar

**Thursday, April 12, 2018**

Maggiano's Little Italy  
4 Columbus Ave., Boston, MA

8:00 AM – 2:00 PM

**Marketing Massachusetts: Paving the Way to Economic Development**

*Invited Speaker: Stephanie Pollack, Secretary and Chief Executive Officer, Massachusetts Department of Transportation*

The Bertram Berger Seminar is an annual event focusing on transportation issues as well as state and city-wide projects. This year's seminar will examine the steps the Commonwealth has taken to attract major developments to build here and how Massachusetts plans to continue this growth. The seminar will feature two panel discussions entitled The Public Agency Perspective: Current Initiatives & Future Vision and The Private Sectors Outlook on Massachusetts.

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

### BSCES Program Committee Sponsored NHI Training

**Monday – Friday, April 23 – 27, 2018**

Hilton Garden Inn Worcester  
35 Major Taylor Boulevard, Worcester, MA

8:00 AM – 4:30 PM

**FHWA-NHI-130056 Safety Inspection of In-Service Bridges for Professional Engineers**

This five-day course, intended for Professional Engineers (PEs), is based on the "Bridge Inspector's Reference Manual" (BRIM) and provides training on the safety inspection of in-service highway bridges. This adaptation of the 10-day Safety Inspection of In-Service Bridges course (FHWA-NHI 130055) has been streamlined to better suit experienced PEs, while retaining strong emphasis on bridge inspection, documentation, and coding requirements. The course includes one virtual bridge inspection trip; new instruction on critical findings, their identification and response; curriculum on the new AASHTO Element level evaluation; and updated activities that maximize participant engagement throughout the course. Please note that to take this course, participants must show that they are certified as PEs and have passed one of the three prerequisite courses: FHWA-NHI-130054, Engineering Concepts for Bridge Inspectors; FHWA-NHI-130101, Introduction to Safety Inspection of In-Service Bridges; FHWA-NHI 130101a, Prerequisite Assessment for Safety Inspection of In-Service Bridges.

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

*continued on page 12*

### ASCE Webinars

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Are you planning to take an ASCE webinar? Sign up with the code WEBBOSSEC and 20% of your registration fee will be donated to the Boston Society of Civil Engineers Section/ASCE.

For a full listing of ASCE Webinars, [click here](#).

### 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.

## Upcoming Events *(continued from page 11)*

### YMG Volunteer Event

**Saturday, April 28, 2018**

Watch Factory, 185 Crescent St., Waltham, MA

9:00 AM – 12:00 PM

### Earth Day Clean Up with the Charles River Watershed Association

Come help YMG clean up the Charles River for Earth Day! Volunteers will pick up trash and debris along the river in Waltham, MA. Pizza party will follow immediately after the cleanup.

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

### 29th Annual Francis M. Keville Dinner

**Tuesday, May 1, 2018**

Courtyard Marriott Boston Downtown  
275 Tremont St., Boston, MA

5:30 PM Reception; 6:30 PM Dinner

*Keynote Speaker: Joseph Aiello, Chair, Fiscal & Management Control Board, Massachusetts Bay Transportation Authority*

*Introduction: Mayor Joseph Sullivan, Mayor, Town of Braintree, Massachusetts and Board Member, MassDOT*

The Francis M. Keville Memorial Fund was established in 1989 from donations in recognition of Mr. Francis M. Keville's efforts and abilities to take his vision of large public transportation projects and make them a reality. The fund provides for this forum to discuss important aspects of transportation and construction related matters.

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

### BSCES Program Committee Sponsored NHI Training

**Monday – Friday, May 7 – 11, 2018**

Hilton Garden Inn Worcester

35 Major Taylor Boulevard, Worcester, MA

8:00 AM – 4:30 PM

### FHWA-NHI-130110 Tunnel Safety Inspection

This five-day course is highly interactive and builds upon participants' prior knowledge of

tunnel and/or bridge inspection. The course covers the entire breadth of knowledge necessary to manage or execute a successful tunnel inspection based on the National Tunnel Inspection Standards (NTIS), Tunnel Operations, Maintenance, Inspection and Evaluation (TOMIE) Manual and Specifications for the National Tunnel Inventory (SNTI). During the course, the instructor will lead participants through a series of case studies and a virtual tunnel inspection. Please note that 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.

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

### BSCES Program Committee Sponsored NHI Training

**Tuesday – Thursday, May 22 – 24, 2018**

Mott MacDonald, 101 Station Dr., Suite 130  
Westwood, MA

8:00 AM – 4:30 PM

### FHWA-NHI-130053 Bridge Inspection Refresher Training

The major goals of this course are to refresh the skills of practicing bridge inspectors in fundamental visual inspection techniques; review the background knowledge necessary to understand how bridges function; communicate issues of national significance relative to the nations' bridge infrastructures; re-establish proper condition and appraisal rating practices; and review the professional obligations of bridge inspectors. This course is based on the "Bridge Inspector's Reference Manual," 2002 (updated 2006), with reference to the AASHTO Manual as defined by the National Bridge Inspection Standards regulation.

*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, MA

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 pre-requisite 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.*

## Mark Your Calendar!

**Wednesday, May 23, 2018**

### Doing Business with Massport

*Sponsored by the Structural Engineering Institute Boston Chapter*

**Featuring: Sam Sleiman, PE, CCM**

Director, Capital Programs & Environmental Affairs, Massachusetts Port Authority

Wyndham Boston Beacon Hill

5 Blossom Street, Boston, MA 02114

6:00 PM Registration, Social & Dinner

7:15 PM Presentation

*Please see future BSCES emails and next month's newsletter for further details.*



2018 John R. Freeman Lecture

# Water, Sanitation, Hygiene and Engineering in International Humanitarian Response: Lessons from Haiti and Worldwide

Daniele Lantagne

Professor, Department of Civil and Environmental Engineering, Tufts University

Tuesday, April 10, 2018

6:00 PM Reception; 7:00 PM Lecture

Massachusetts Institute of Technology Tang Center (Building E51)  
70 Memorial Drive, Cambridge MA 02139

[View Map](#)

Worldwide, both the number of emergencies (including natural disasters, outbreaks, and conflict) and the number of people affected by emergencies are increasing, and the rate of increase is anticipated to accelerate with climate change and population densification. Depending on context, affected populations may have both material and health needs, including shelter, health care, mental health care, and/or protection. Water, sanitation, and hygiene (WASH) provision are often critical needs in humanitarian contexts. This talk will begin with a history of humanitarian response, followed by a discussion of the current humanitarian landscape (including types of emergencies, affected populations, and their health needs), the types of emergency WASH interventions, knowledge gaps in WASH response that engineers can help fill, and thoughts on the future of humanitarian response. The talk will be grounded with field experiences from Dr. Lantagne's 16 years' of work in humanitarian response in over 50 countries, focusing on Haiti.

Dr. Lantagne is an Associate Professor in Civil and Environmental Engineering at Tufts University, with undergraduate and master's degrees in civil and environmental engineering from MIT, a PhD from the London School of Hygiene and Tropical Medicine, and a post-doc from Harvard's Center for International Development. She has provided technical assistance or conducted research, in both development and emergency contexts, in more than 60 countries in Africa, Asia, and Central/South America, and is a technical advisor to Potters for Peace, FilterPure, and charity: water.



**This is a FREE event** funded by the BSCES John R. Freeman Fund as outreach to students and young professionals interested in careers in water resources engineering. All are welcome. To register online [click here](#), or you may register at the door.

**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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Department of Civil  
and Environmental  
Engineering,  
Northeastern  
University

Skanska Civil  
Tufts University

VHB  
Weston & Sampson

## 2018 Bertram Berger Seminar

### Marketing Massachusetts:

*Paving the Way to Economic Development*

### Keynote Speaker:

**John Barros (Invited)**

*Chief of Economic Development, City of Boston*

**Thursday, April 12, 2018**

**Maggiano's Little Italy, 4 Columbus Ave, Boston, MA 02116**

**8:00 AM Registration; 8:30 AM Panel Discussion; 11:15 AM Social**

**12:00 PM Luncheon, Bertram Berger Tribute, Keynote Address, and Awards**

**Panel 1: The Public Agency Perspective: Current Initiatives & Future Vision (8:30 AM – 9:45 AM)**

**Moderator:** Luisa Paiewonksky, Director, Center for Infrastructure Systems and Technology, U.S. DOT/Volpe Center

**Panel:** John Audi, Assistant Director – Capital Programs, Massachusetts Port Authority  
Scott Bosworth, Chief Strategy Officer, Massachusetts Department of Transportation  
Jeff McEwen, Division Administrator, Federal Highway Administration  
Monica Tibbits-Nutt, Massachusetts Department of Transportation Board of Directors

**Panel 2: The Private Sectors Outlook on Massachusetts (10:00 AM – 11:15 AM)**

**Moderator:** Keri Pyke, Principal – Transportation Planning, Howard Stein Hudson

**Panel:** Dan O'Connell, President and Chief Executive Officer, Massachusetts Competitive Partnership  
Peter Forman, President and Chief Executive Officer, South Shore Chamber of Commerce  
Ed Starzec, Director of Land Planning & Permitting, MassDevelopment

## Registration Deadline: Friday, April 6, 2018

**\$80 Member, \$100 Non-Member**

**\$70 Public Sector Member, \$80 Public Sector Non-Member**

**\$60 Senior Member, \$30 Student Member**

**\$400 Table of 5, \$800 Table of 10**

**\$350 Public Sector Table of 5, \$700 Public Sector Table of 10**

### Information/Registration:

Register to attend this meeting and pay by credit card online at <http://bit.ly/Berger2018>. 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 April 6, 2018 and no-shows will be billed.



**This presentation provides 6 Professional Development Hours (PDH)**

Supported by the staff of The Engineering Center Education Trust



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**FHWA-NHI-130056**

## **Safety Inspection of In-Service Bridges for Professional Engineers**

**Monday, April 23, 2018 – Friday, April 27, 2018**

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

2017-2018  
Program Sponsors

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GEI Consultants, Inc.  
Green International Affiliates, Inc.  
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Northeastern University

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This five-day course, intended for Professional Engineers (PEs), is based on the "Bridge Inspector's Reference Manual" (BRIM) and provides training on the safety inspection of in-service highway bridges. This adaptation of the 10-day Safety Inspection of In-Service Bridges course (FHWA-NHI 130055) has been streamlined to better suit experienced PEs, while retaining strong emphasis on bridge inspection, documentation, and coding requirements. The course includes one virtual bridge inspection trip; new instruction on critical findings, their identification and response; curriculum on the new AASHTO Element level evaluation; and updated activities that maximize participant engagement throughout the course.

Please note that to take this course, participants must show that they are certified as PEs and have passed one of the three prerequisite courses: FHWA-NHI-130054, *Engineering Concepts for Bridge Inspectors*; FHWA-NHI-130101, *Introduction to Safety Inspection of In-Service Bridges*; FHWA-NHI 130101a, *Prerequisite Assessment for Safety Inspection of In-Service Bridges*. Please forward your prerequisite certificate in the form of a PDF document to [bsces@engineers.org](mailto:bsces@engineers.org) before Friday, March 23, 2018.

### **Registration Deadline: Friday, March 23, 2018**

**Registration Fees: \$1,600 Members, \$1,750 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/InServicePE2018>. 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 March 23, 2018 will be billed.



*Volunteer with the Younger Member Group!*

# **Earth Day Clean Up**

## **Charles River Watershed Association Watch Factory, Waltham, MA**

**Saturday, April 28, 2018  
9:00 AM**

**Watch Factory  
185 Crescent St  
Waltham, MA**

**Come help YMGB clean up the Charles River for Earth Day! Volunteers will pick up trash and debris along the river in Waltham, MA. Pizza party will follow immediately after the cleanup.**

**Registration Deadline: April 21, 2018**

**To register for this volunteer event, please email [ymgb@bsces.org](mailto:ymgb@bsces.org) and include your shirt size in the email. Space is limited, first come first serve!**

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## 29th Annual Francis M. Keville Dinner

### Keynote Speaker:

**Joseph Aiello**

Chair, Fiscal & Management Control Board  
Massachusetts Bay Transportation Authority

### Introduction:

**Mayor Joseph Sullivan**

*Mayor, Town of Braintree, Massachusetts  
Board Member, MassDOT*

**Tuesday, May 1, 2018**

**Courtyard Marriott Boston Downtown**  
**275 Tremont Street, Boston, MA 02116**  
**5:30 PM Reception; 6:30 PM Dinner**

### Registration Deadline: Friday, April 20, 2018

**\$85 Members, \$115 Non-Members**  
**\$75 Public Sector Members, \$85 Public Sector Non-Members**  
**\$70 Senior Members (65+), \$65 Students**  
**\$850 Table of 10**

### Information/Registration:

Register to attend this meeting and pay by credit card online at <http://bit.ly/KevilleDinner2018>. 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 April 20, 2018 and no-shows will be billed.

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## FHWA-NHI-130110

### Tunnel Safety Inspection

**Monday, May 7, 2018 – Friday, May 11, 2018**

**Hilton Garden Inn Worcester, 35 Major Taylor Boulevard, Worcester, MA**

**Monday through Friday, 8:00AM – 4:30PM**

This five-day course is highly interactive and builds upon participants' prior knowledge of tunnel and/or bridge inspection. The course covers the entire breadth of knowledge necessary to manage or execute a successful tunnel inspection based on the National Tunnel Inspection Standards (NTIS), Tunnel Operations, Maintenance, Inspection and Evaluation (TOMIE) Manual and Specifications for the National Tunnel Inventory (SNTI). During the course, the instructor will lead participants through a series of case studies, concluding with a virtual tunnel inspection that takes place in a computer-simulated, 3D environment.

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-130055, *Safety Inspection of In-service Bridges*, 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, March 30, 2018. Please forward your prerequisite certificate in the form of a PDF document to [bscesreg@engineers.org](mailto:bscesreg@engineers.org). Please visit the NHI website at [www.nhi.fhwa.dot.gov](http://www.nhi.fhwa.dot.gov) or contact them at 703/235-0500 for additional information on the prerequisite course requirements.

### Registration Deadline: Friday, March 30, 2018

**Registration Fees: \$2,100 Members, \$2,500 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/NHITunnelSafety05072018>. 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 Friday, March 30, 2018 will be billed, including those that do so due to failure to take one of the prerequisite courses.

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**FHWA-NHI-130053**

## Bridge Inspection Refresher Training

**Tuesday, May 22, 2018 – Thursday, May 24, 2018**

**Mott MacDonald, 101 Station Drive, Suite 130, Westwood, MA**  
**Tuesday through Thursday, 8:00AM – 4:30PM**

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The major goals of this course are to refresh the skills of practicing bridge inspectors in fundamental visual inspection techniques; review the background knowledge necessary to understand how bridges function; communicate issues of national significance relative to the nations' bridge infrastructures; re-establish proper condition and appraisal rating practices; and review the professional obligations of bridge inspectors. This course is based on the "Bridge Inspector's Reference Manual," 2002 (updated 2006), with reference to the AASHTO Manual as defined by the National Bridge Inspection Standards regulation.

Core course topics include inspector qualifications and duties, bridge mechanics, record keeping and documentation, fatigue and fracture in steel bridges, traffic safety features, safety, National Bridge Inventory (NBI) component ratings, superstructure type identification, inspection techniques and case studies for decks, superstructures, bearings, substructures, channels and culverts, and a mock bridge inspection classroom exercise. Optional topics include inspection of truss gusset plates, adjacent box beams, and post-tensioning tendons.

**Registration Deadline: Tuesday, April 10, 2018**

**Registration Fees: \$1,400 Members, \$1,600 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/NHIBridgeInspectionRefresher2018>. 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 April 10, 2018 will be billed.



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## 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**

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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, May 25, 2018. Please forward your prerequisite certificate in the form of a PDF document to [bsces@engineers.org](mailto:bsces@engineers.org).

### Registration Deadline: Friday, May 25, 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 May 25, 2018 will be billed.