

UPCOMING EVENTS

What You Need to Know About the 2016 Modifications to the ASCE/SEI 7 Minimum Design Loads Standard
March 5, 2019

YMG March Social/Rosie's Place Drive
March 12, 2019

2019 John R. Freeman Lecture
April 10, 2019

30th Annual Francis M. Keville Dinner
April 24, 2019

Further Details Inside



Benefits of an Automated Electronic Field Data Collection Workflow

by Taylor Ziolkowski, Sales Representative, EarthSoft

Increasing data volumes are making the efficient collection of field data an integral part of any environmental project. Regulated industrials, consultants, and government agencies are currently digitizing their workflows to reap the benefits of the digital transformation. Consider the following benefits if you are still collecting field data manually with paper forms.

Instant Data Availability

For many environmental projects, large data sets must be collected and turned into information as quickly possible. This mix of complexity and time sensitivity is posing challenges to companies who must find ways to transform the collected data into the required outputs efficiently.

Traditionally, field data has been collected on paper forms which were then transcribed into some digital form in the office. Turning this manually entered data into digital data for reporting outputs included various steps that often began with deciphering the field forms and typing them into tables. Once the data was



New data are instantly compared to historical data. All errors are instantly seen and not accepted.

available in a digital form, it was loaded into various applications for data analysis and reporting.

Electronic data collection tools allow field crews to deliver data electronically to a central database, where the new dataset is instantly available for analysis. The project team gets immediate feedback and can start to draw conclusions instead of waiting for a new dataset, possibly for weeks.

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President's Report

by Geoffrey B. Schwartz, PE, Sr. Project Manager, GZA



Dear Members,

Hope everyone is staying warm this February and doing well. We have several great BSCES events that we are rolling out this winter and spring, so please check in with our events calendar and weekly email blasts to look at upcoming programs, there should be plenty to choose from!

On February 2nd, I was honored to be part of BSCES's 28th Annual Model Bridge Competition, run by our BSCES Public Awareness & Outreach

Committee. The event took place at Wentworth Institute of Technology and featured approximately 40 bridges prepared by 5th to 12th grade students in teams of 2-3 people. The bridges this year were constructed of playing cards and scotch tape, with each bridge being loaded to failure at the event. I served as an aesthetics judge, along with Alex Bardow of MassDOT, William Egan of the City of Boston, and Professor Jack Duggan of Wentworth. It was fantastic to see so many hardworking and eager children of all ages with their bridges, and hopefully this exposure to civil engineering will influence many of them to

consider becoming an engineer or scientist. I just wanted to thank everyone, including all of the dedicated volunteers, the mentors, and the BSCES Public Awareness & Outreach Committee members, including James Velino who took the lead on organizing the herculean effort, Reed Brockman, and Rachel Beauchemin, who is Wentworth's ASCE Student Chapter President. If anyone would like to volunteer for future events or participate on the Public Awareness & Outreach Committee, please send me an email and I will forward it to the right person.

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Boston Society of Civil Engineers Section/ASCE

The Engineering Center, One Walnut Street, Boston, MA 02108

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Automated Electronic Field Data Collection Workflow

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Implementing a system with a digital field data workflow leads to more benefits that are directly connected to the automated data transfers. When new datasets are automatically loaded into a central system, data analysts can also automate their reports, which lets them focus on the decision-making process without worrying about the technical parts of data visualization and reporting. As soon as the new results enter the database, pre-configured reports, maps, diagrams and charts can be accessed and exported.

Data Quality

Electronic data collection forms provide real-time verification tools for the field crews to verify that the data entered meets pre-defined quality standards. Here are some examples for common data checks that can help the data collectors in the field:

- **Completeness Checks:** Are all required fields populated? Did you miss something?
- **Range Checks:** Are all the results within a logical range? For example, a pH value of 75 would not be accepted but a value of 7.5 would be accepted.
- **Reference Values:** Do all reference values follow the conventions in the database? Smart forms will include drop-down lists that only allow the selection of valid reference values.

Another tool to increase data quality in the field is the display of historical data ranges in the field. A common example is the comparison of new water level measurements against the historical trend. Outliers that are significant can be identified immediately, allowing the team to verify the measurement while still on location.

A digital system provides tools to link every field form to the users who are collecting the datasets. Forms can be finalized with a digital signature and attachments, such as photos or voice memos, can be included. These file attachments will automatically be linked to the sampled or location record when the datasets are uploaded to the database. Georeferenced files are then instantly available in the office.

Supporting Tools for Field Crews

In addition to the above data quality tools, tablets or laptops with electronic data collection forms provide a range of supporting tools for the field technicians allowing for more efficient and accurate data acquisition.



Georeferenced field data collection

Mapping and GPS

Running a digital field data application on a mobile device like a laptop or tablet allows field staff to utilize the built-in GPS device or an external device for orientation. New locations can be entered digitally while capturing the coordinates (even in various coordinate systems). Other features include tools to help field technicians find the way to the next sampling location by showing the direction on maps.

Instrument (Internet of Things—IoT) Interfaces

Migrating to digital field data workflows allows the field teams to import data from measurement devices directly into the database, where it is immediately available for reporting. Typical devices include weather stations, piezometers, multimeters, drones, and other sensors. By directly connecting the device to the database, common sources of error are removed from the workflow.

Integration of Barcode Devices

Connecting a barcode reader further improves data quality by reducing transcription errors while letting the field teams focus on more important tasks than typing in sample names, location names or numbers. Barcodes can be associated to different record types, which are defined by the data manager.

Benefit Summary

- Data is instantly available after electronic submittal from the field
- Secure and efficient data transfers with digital user certificates
- Automated data verification and loading
- Automated reporting and visualization following pre-configured templates
- More accurate data through initial data validation in the field
- Powerful field tools including GPS, barcode scanners, and sensor interfaces
- Tracking of field team or subcontractor performance

A Green Street for Watertown

by Elisabeth Cianciola, Aquatic Scientist, Charles River Watershed Association; Matthew Shuman, PE, Town Engineer, Watertown Department of Public Works; and Robert Kennedy, Watertown DPW Engineering Intern

While a tremendous success story, the improvements that have been made on the Charles River in the last 25 years are now threatened by pollutants such as phosphorus that are carried in stormwater runoff. In aquatic ecosystems, phosphorus acts as a fertilizer, encouraging excessive growth of invasive plants and algae.

The majority of stormwater runoff from Watertown's 4.2-square miles land area flows into the Charles River, which flows easterly along the town's border. The Charles River is a valuable amenity to the Town, providing recreational boating, public parklands, aquatic habitat, natural aesthetics, and floodwater storage. As a part of the Charles River Reservation, the 17-mile long parkland adjacent to the river managed by the Department of Conservation and Recreation, protecting this resource is important not just to the Town, but regionally.

One method of reducing stormwater impacts to the river is through the use of green infrastructure (GI). GI is a form of stormwater management that mimics natural processes, using surface and/or subsurface storage, engineered soils, and planting of specific vegetation, to control, filter, and treat runoff from surrounding impervious surfaces. GI techniques promote infiltration of stormwater into the underlying soils and mimic natural nutrient filtering processes, treating stormwater as close to the source as possible. In this way, pollutants are retained on land rather than being discharged into the river. GI also reduces the volume of stormwater that is discharged into receiving bodies of water by slowly infiltrating and storing water in the ground. Not only does this help prevent stormwater catch basins from being overwhelmed and backing up onto streets, it is also better for rivers, because it maintains a balanced, more natural flow of water.

Where to start?

Recent replacement of two gas mains and a water main on Edenfield Avenue had left the roadway surface severely deteriorated. Although located in a residential neighborhood, the street was excessively wide (32-feet), lacked curbing, street trees, and green space that all provide "curb appeal". Additionally, the street acts as a cut-through for vehicles traveling between Route 20 in Watertown and Belmont Center.

As part of road resurfacing, the Town typically installs granite curbing, new concrete sidewalks, and restores grass borders to improve pedestrian safety and experience. On Edenfield Ave., the Town also proposed to reduce the width of the roadway surface to provide traffic calming and

then use the additional reclaimed impervious area for the inclusion of GI.

The goal of this project was to use the GI techniques to reduce the volume and improve the quality of stormwater directed to the Charles River from surrounding impervious surfaces.

Project Design

The Charles River Watershed Association (CRWA) and the Town of Watertown Department of Public Works (DPW) secured a grant to fund GI construction as part of the larger road reconstruction project under the Massachusetts Department of Environmental Protection's 2016 Section 319 Non-Point Source Pollution Grant Program. Horsley Witten Group, Inc. designed the GI components for the project and World Tech Engineering provided overall street reconstruction design.

As part of the design, the roadway width was reduced from 32-feet to 26-feet, allowing a 6.5-foot grass border area on each side of the street within the 50-foot right-of-way, in addition to 5-foot sidewalks.

Due to the roadway narrowing, new catch basins and drainage connections needed to be installed. Each proposed catch basin location was evaluated for GI suitability. Many issues were considered, including sub-surface soil suitability, location of existing utility services, presence of mature street trees, as well as proximity to driveways, walls, and other conflicts.

The final design included four stormwater tree trenches and seven bioretention systems. The tree trenches function very much like a subsurface infiltration system. Within each catch basin, a perforated pipe is set at an elevation lower than the outlet to the Town's drainage system. The perforated pipe is then laid underneath the grass border and surrounded in crushed stone, with a tree planted in the border. During a precipitation event, stormwater runoff is directed towards the perforated pipe, where it can infiltrate into the native soils. Only in large events, when the capacity of the tree trench is exceeded, will stormwater runoff discharge from the catch basin to the Town's drainage system through the outlet.

The bioretention systems are located at the ground surface within the grass border area upstream of catch basins. They consist of shallow depressions that contain an engineered soil fill, drought and flood tolerant plantings, and check dams to create stormwater storage cells. Openings in the road curbing direct stormwater runoff into the bioretention areas, where it is detained



Curbed inlets allow water to enter the constructed bio-retention systems (photo courtesy of Horsley Witten Group).



Tree trench underlain by gravel to enhance subsurface storage and increase rate of infiltration (photo courtesy of Horsley Witten Group)

within each storage cell and slowly infiltrated. Overflow outlets from the systems are provided so that in large storms, runoff can reenter the roadway and reach the downstream catch basin.

The GI built on Edenfield Avenue treats runoff from a drainage area of 2.3 acres. Together, these systems prevent approximately 1.4 kilograms of phosphorus, 0.79 kilograms of zinc, and 468 kilograms of suspended solids from entering the Charles River every year.

Where do we go from here?

The Town learned a lot from the Edenfield Avenue GI project that it has already put to use in other roadway reconstruction projects. Installed in spring 2018, both the tree trenches and bioretention areas have functioned well and have required minimal maintenance. Although the installation costs were similar, the tree trenches were easier to install than the bioretention areas, with fewer design constraints and greater adaptability to field changes. The Town is installing tree trenches as part of two other projects currently under construction and anticipates continuing the program in the future.

For more information about the project, visit the [Watertown Department of Public Works](#) and [Charles River Watershed Association](#) websites.

MWRA's Metropolitan Tunnel Redundancy Program

by Kathleen M. Murtagh, PE, Director, Tunnel Redundancy and Frederick O. Brandon, PE, Director, Design and Construction, Massachusetts Water Resources Authority

The Massachusetts Water Resources Authority's (MWRA) water system supplies wholesale water to 51 communities. The system's principal sources of water are the Quabbin and Wachusett Reservoirs located in central Massachusetts. The water is conveyed east to the metropolitan Boston area through a system of aqueducts. For the most part, the aqueducts have redundant systems as far east as the eastern terminus of the Norumbega Covered Storage Tanks in Weston so that they may be taken out of service for maintenance or repairs with no disturbance of water supply to the member communities. However, there is currently no redundancy for the Metropolitan Tunnel System that delivers water from the Norumbega Covered Storage Tanks to the Fells Reservoir and the Blue Hills Covered Storage. Introducing redundancy represents the next challenge for MWRA in improving the reliability of this great water system.

Metropolitan Tunnel System

The Metropolitan Tunnel System includes the City Tunnel (1950), the City Tunnel Extension (1963), and the Dorchester Tunnel (1976). Together, these tunnels carry approximately 60% of the total system daily demand with no redundancy.

Each tunnel comprising the Metropolitan Tunnel System consists of concrete-lined deep rock tunnel sections linked to the surface through vertical shafts with pipes and valves that connect to the MWRA surface pipe network. The tunnels and shafts represent a low risk of failure; however, many of the valves and piping at the surface are in need of repair or replacement. The City Tunnel appurtenances are 68 years old and cannot be adequately maintained or replaced until a back-up water supply exists. Failure of some valves could cut off a majority of the system's capacity to supply water. These valves have not been recently exercised for fear of failing in a closed position.

These valves should be, but cannot be, replaced until a redundant system is in place because shut down of the City Tunnel would be required.

Access to some of the valve structures and chambers is hampered by high groundwater or damp conditions. Original protective pipe coatings are gone and pipes and valves are coated in thick layers of rust. Loss of metal thickness and structural strength is a concern. Bolts and fasteners have corroded and are planned to be replaced where feasible. Some chambers must be pumped down to allow access, which impedes any emergency response and aggravates further corrosion concerns.

Water Main Break of May 1, 2010

Underscoring the need for redundancy, MWRA experienced a major break on a ten-foot diameter pipe connection at Shaft 5 of the City Tunnel on May 1, 2010. The break occurred at a coupling on the surface pipe interconnection between the recently constructed MetroWest Water Supply Tunnel and the City Tunnel. The MWRA had a redundant pipe (Hultman Aqueduct) at this location, but at the time of the break, the Hultman Aqueduct was out of service and being rehabilitated.

The incident resulted in a release of approximately 250 mgd over a period of eight hours until the break was isolated. During this time, an emergency water source was activated to maintain water supply prior to shutting down the affected pipe. While the pipe was being repaired over the following two days, the Boston metropolitan area was supplied through alternate lower capacity mains with augmentation from an emergency raw water reservoir with chlorination. The water service area was issued a boil water order during these two days. This boil water order affected approximately 2 million people in 30 communities.



2010 Water Main Break at the junction of the City Tunnel underscores critical role of redundant systems

History of Redundancy Planning for the Metropolitan Tunnel System

1937 Plan

A redundant tunnel system was proposed as early as 1937. The plan included a proposed pressure aqueduct and tunnel system with a tunnel loop beginning in Weston near the Charles River and running east into Boston, turning north to Everett, looping west to Belmont and connecting back to Weston. While much of the 1937 plan for pressure aqueducts and tunnels was implemented from 1937 to present day, the proposed tunnel loop was never completed.

Redundancy Planning 1990 through 2016

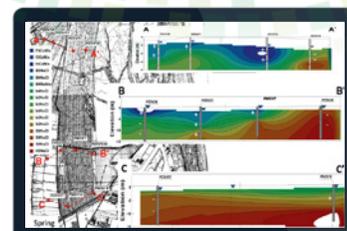
After MWRA was created, a plan was proposed in 1990 to construct a tunnel from Marlborough to Weston (the MetroWest Water Supply Tunnel) to provide redundancy for the Hultman

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Charts • Graphs • Maps

MWRA's Metropolitan Tunnel Redundancy Program

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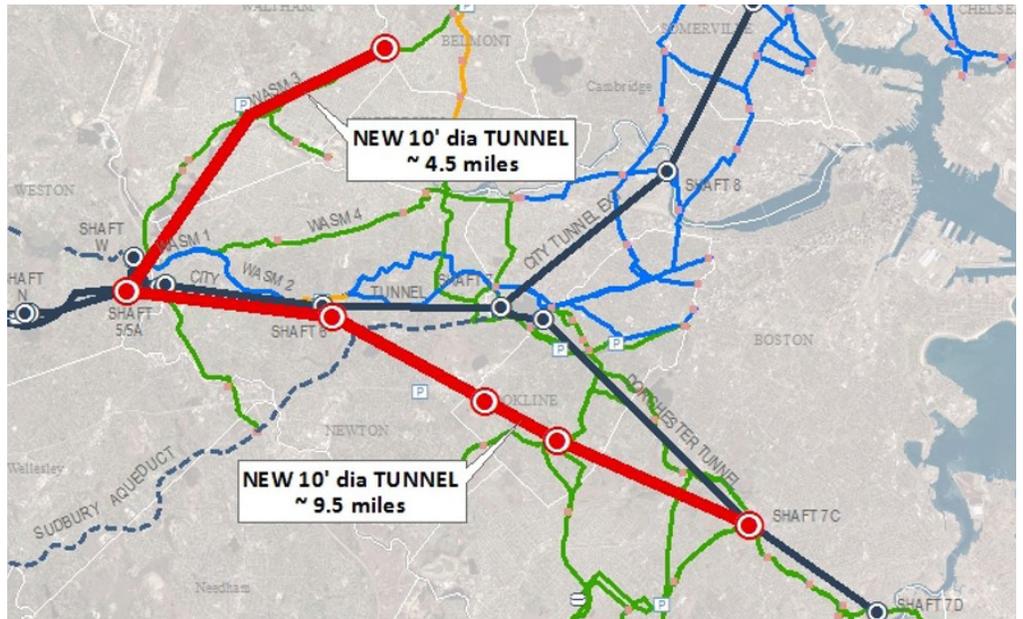
Aqueduct and a future northern tunnel loop from Weston to Stoneham and Malden. The MetroWest Water Supply Tunnel was approved for construction and was completed in 2003. The proposed northern tunnel loop, which would have provided redundancy to the northern portion of the Metropolitan Tunnel System, was not constructed.

In 2011, the MWRA completed a new redundancy evaluation including consideration of surface pipe alternatives in addition to tunnel alternatives. The result of that evaluation was a plan of constructing primarily large diameter surface pipes to provide redundancy. However, it became apparent that the construction of large diameter pipelines through dense urban areas would cause unacceptable community disruption and had serious implementation challenges.

Current Plan

In 2016, MWRA revisited the all-tunnel approach to providing redundancy to the Metropolitan area. Over 30 alternatives were screened based on level of redundancy, constructability, and construction and operation and maintenance costs. Based on this evaluation, an all-tunnel alternative was recommended for redundancy of the Metropolitan Tunnel System. A preliminary alignment has been proposed that will be subject to more detailed review and alternatives analysis during the public review period.

The recommended alternative consists of two deep rock tunnels beginning at the same location in Weston near the Massachusetts Turnpike/Route 128 interchange. The 4.5-mile Northern Tunnel generally follows the route of MWRA's existing Weston Aqueduct Supply Main (WASM) 3 to a point about midway along the pipeline near the Waltham/Belmont border. Construction of this new northern tunnel will allow flow in WASM 3 in both directions. The 9.5-mile Southern Tunnel will run east to southeast to tie into the surface connections at Shaft 7C of the Dorchester Tunnel.



Proposed alignment of deep rock tunnels (in red) to provide redundancy to Metropolitan Tunnel System

The estimated total midpoint of construction cost for both the recommended north and south tunnels is \$1.475 billion with an estimated time to completion of 17 years. This cost estimate includes 30 percent contingency and 4 percent annual construction cost escalation. As the program progresses and becomes more defined, the costs will be further refined.

Project Outlook

The organizational framework to manage the program within MWRA is in place in the form of the Tunnel Redundancy Department. Procurement of initial consultant contracts for Program Support Services and Preliminary Engineering are underway.

It is expected that the next several years will include a number of program-wide activities including risk management planning, quality management planning, health and safety planning, design criteria and standardization, document management and project controls,

work breakdown planning, procurement planning, construction package planning, field investigation procedures, rock core storage, critical path scheduling, and budget planning and management.

The Preliminary Design Phase of the program will involve significant efforts on geotechnical investigations, preliminary route and shaft site alternative evaluations, preliminary design, an assessment of environmental permits needed and preparation of the Massachusetts Environmental Policy Act (MEPA) review for the project. This phase of the project will initiate actual design. Preliminary design is anticipated to be complete by 2023. It is envisioned that final design will follow on the heels of preliminary design with the first tunnel construction package issued in or around 2027. Upon completion of this program, the MWRA water system will have redundancy for the entire tunnel and aqueduct system from the source to the community distribution systems.



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Retrospective on Boston Harbor Cleanup

by Ana Claudia Guedes, Civil Engineer

In the nineteenth century, the Boston Harbor started being heavily polluted due to the increase in industrial activities and population growth. For more than a hundred years, largely untreated sewage was discharged into the harbor by the population of Boston and surrounding communities. As a result, in the early 1980s, the largest seaport and one of the most important natural resources of New England was often referred to as the among the dirtiest harbors in the United States.

As the story goes, in 1982, Quincy city solicitor encountered raw sewage on a stroll along Wollaston Beach, which drove the city to sue the state. After much machination, Metropolitan District Commission was forced to turn over the provision of water and sewer services to a newly created Massachusetts Water Resources Authority. Another lawsuit brought by the US Environmental Protection Agency resulted in the famed federal court order to clean up Boston Harbor. That cleanup included the construction of the Boston Harbor outfall tunnel, a new wastewater treatment plant on Deer Island, and substantial changes upstream within the wastewater system to reduce combined sewer overflows that resulted in discharges of sewage during storm events.

The cleanup began in 1985. Much was finished by the year 2000, however the finishing touches were not made until 2015. Boston Harbor recovered from the pollution and today it is the habitat of restored aquatic ecosystems and a center for commercial fisheries and recreational activities. The Boston Harbor cleanup is recognized as one of the greatest environmental achievements in the USA. Its total cost is estimated to be \$4.7 billion. The following timeline describes the retrospective of the Boston Harbor cleanup.

Colonial Boston: Throughout the colonial era, Bostonians treated the harbor as a receptacle for all metropolitan waste.

1876: Boston's first sewer system was constructed. Although it represents the beginning of sanitation awareness, the combined sewer system did not have a significant impact on the pollution, as it collected and discharged the untreated wastewater into the harbor.

1952 and 1968: The city of Boston built the first treatment plants.

The primary treatment plants on Nut Island and Deer Island were built in 1952 and 1968 respectively. This step also did not show a positive effect on Boston Harbor, since the sludge removed from the sewage was only briefly decomposed before being discarded on the harbor. Moreover, when the flow exceeded the capacity of the primary treatment plants, untreated sewage was directly discharged into the harbor.

1972: Congress amended the Federal Water Pollution Control Act of 1948.

One of the requirements was that all publicly owned treatment works that discarded sewage into waters of the United States must install both primary and secondary treatment equipment by July 1977.

1985: The Massachusetts Water Resources Authority (MWRA), established by an enabling act in 1984, took responsibility for the Greater Boston's water and sewer systems.

By the early '80s, Boston Harbor was among the dirtiest harbors in the US, resulting in a crippled marine habitat and constraining most recreational activity. In 1985, under court supervision, MWRA was in charge of the Boston Harbor cleanup, a project that aimed



Anaerobic digester tanks of the new Deer Island Wastewater Treatment Plant

to improve the sewage collection, treatment and disposal system.

1986: Construction of a new treatment plant. Judge A. David Mazzone, in charge of overseeing and monitoring the cleanup, ordered the construction of a new treatment plant in Deer Island.

1991: MWRA stopped discarding sludge into Boston Harbor and combined sewer overflow (CSO) discharges were reduced by half.

1995: The new primary treatment plant on Deer Island began operation. As a result, there was a reduction of total solids, bacteria, biochemical oxygen demand (BOD), nitrogen and phosphorous.

1997: Beginning of secondary treatment on Deer Island, which effectively decreased BOD and improved water quality.

2000: Sewage stopped being discharged into shallow areas of Boston Harbor. Treated effluent started being released into the new outfall in Massachusetts Bay through a 9.5 miles undersea tunnel.

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Retrospective on Boston Harbor Cleanup

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Since 1989, MWRA has been monitoring the water quality in Boston Harbor and its tributaries. The collected data shows a decrease of Enterococcus Bacteria after the construction of the new treatment facilities. Before the improvements (1989 – 1991), the concentration of bacteria during wet weather was considerably high in large areas around the outfalls and

tributary rivers, reaching more than 275 colonies per 100 ml samples in some locations. By 2012, most of the harbor showed a concentration of 0 to 5 colonies per 100 ml during wet weather. The highest number of bacteria (36 to 104 colonies per 100 ml samples) were found only in certain areas of the Mystic, Charles and Neponset rivers.

After the MWRA projects, Boston Harbor's beaches became a recreational center in New England and are recognized as the cleanest urban beaches in the country. Although high bacteria levels may still happen due to stormwater runoff, South Boston, Constitution and Malibu beaches have met swimming standards for Enterococcus 99%, 94% and 91% of the time between 2012 and 2016.

Recent News and Updates

BSCES Awards Nominations Deadline is March 11

Do you know a worthy award recipient? If so, then download, complete and submit the 2018 BSCES Employer Recognition and/or Section Awards form contained in this newsletter by the Monday, March 11, 2019 submission deadline. The Large and Small Employer Recognition Awards are given to those organizations who exhibit exemplary support of ASCE and BSCES. Section Awards are given to individuals who have made significant contributions to the civil engineering profession and their communities. Please see the awards nomination forms at the end of this month's newsletter for further details.

2019 BSCES Sustainability in Civil Engineering Award—Call for Entries

The BSCES Committee on Sustainability is accepting nominations for the 2019 Sustainability in Civil Engineering Award until Monday, March 11, 2019. The purpose of this award is to recognize civil engineering infrastructure projects that embody the principles of sustainability espoused by the BSCES Committee on Sustainability, ASCE, and the Institute for Sustainable Infrastructure (ISI). For more information, please see the insert at the end of this newsletter.

Dr. Kenneth Maser Wins 2019 Wilbur S. Smith Award

The BSCES Board of Government would like to congratulate Dr. Kenneth R. Maser, PhD, PE, Senior Principal, Infrasense, Inc., for receiving the 2019 Wilbur S. Smith Award. Administered by the Transportation and Development Institute, this

award is made to the person who, during the fiscal year preceding the year of the award, shall be judged worthy of special commendation for contributions to the enhancement of the role of the civil engineer in highway engineering. Dr. Maser was awarded this honor for his "leadership and instrumental innovation, both domestically and internationally, in developing and providing highway agencies with driving-speed non-destructive methods for subsurface condition evaluation of pavements and bridge decks."

Renew Your BSCES Membership Today!

As an ASCE member you received a notice to renew your society membership. When renewing your ASCE membership, please don't forget to also renew your BSCES membership to continue to receive the numerous member benefits that BSCES has to offer and be among the leaders of your profession who make a difference. Thank you for your contribution.

Enhance the Profession by Serving on an ASCE Committee

Each year, thousands of civil engineering professionals lend their time and expertise to support the Society's vision and mission. The fresh perspectives that you or your members could provide to an ASCE committee could help it achieve its technical or professional objectives. Collaborate with professionals who also care about advancing the practice of civil engineering. Applications are accepted now through March 15. See what it takes, then [apply online](#).

Structures Congress 2019—Register Today

Schedule to occur April 24–26 at the Hyatt Regency in Orlando, FL, the Structural Engineering Institute's 2019 Structures Congress is the premier event in structural engineering. Experience all that's NEW to lead and innovate; learn from the experts on Performance-Based Design Trends, New Smart Technologies, Career Development, and Leadership Skills; special sessions include Grenfell Tower, Workshop on Conceptual Design, and Improve your Communication/Presentation Skills; featured keynote addresses are SE in Regenerative Medicine, Indispensable Structural Engineering, and Reimagining Fantasyland at Magic Kingdom. [Click here](#) for more information.

Stantec signs 46,668 sf Lease at Network Drive in Burlington, MA

Stantec, a global design and engineering firm with 12 offices across New England, has secured new space in Burlington, MA. The firm has signed on for 46,668 sq. ft. on the second floor of 65 Network Drive. Stantec plans to move its current Burlington team to the new space by late 2019.

Savanta Inc. Joins GEI Consultants Inc.

GEI Consultants, Inc. (GEI), one of North America's leading engineering and science consulting firms announced today that Savanta, Inc. (Savanta), an Ontario-based environmental and ecological services firm has joined the company. The new combined operations will provide the opportunity to serve new and existing clients in the rapidly growing Ontario market.

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, rkeenan@bsces.org.

Legal Corner

Engineers Beware: The Massachusetts Prompt Pay Act Contains Hidden Pitfalls for the Uninformed

by Joseph A. Barra, Esq., Construction Partner in the Boston office of Robinson + Cole, LLP



Massachusetts' Prompt Pay Act (Massachusetts General Law c.149§29E), sometimes referred to jokingly among the local Construction Bar as "The Construction Lawyers' Annuity Act," became effective on November 8, 2010 and over the course of the last eight years, has had a profound impact on the way that pay requisitions and change orders are managed on projects that fall within the Act's orbit.

Many contract and payment administration practices that were once commonplace and even expected on large private construction projects are now forbidden by law. At the very least, the Act requires more communication up and down the project's chain of command, especially for those owners/developers who rely upon design professionals to manage a project's construction phase. This note explains how the Act may affect the engineer's role during the invoicing and change order processes.

How the Act has changed the current landscape

A threshold question involves the Act's applicability as it doesn't affect *all* private construction projects, only those whose primary value is \$3 million or more. Further the Act's jurisdiction does not embrace residential projects with less than 5 units.

The Act is intended to promote fairness. To achieve that goal, the Act affects five important tenets, two of which are discussed here:

Show me the Money: The Act sets specific time limits for the preparation, submission, review, approval and rejection of applications for payment among all project participants. Most important for the engineer who is acting on the owner's behalf during the project's construction phase, a failure to properly reject all or any part of the contractor's pay application within the Act's time standards will deem the application approved as a matter of law. In addition to the need to be timely, the reasons for the engineer's decision must be in writing and include a good faith certification reciting the specific factual circumstances and legal rationale supporting such decision.

These times are a changin': The Act also imposes among all project participants, specific timeframes and protocols for processing, reviewing, approving and rejecting proposed change orders. Similar to the remedy for rejecting an invoice, a failure to comply with the Act's protocols will deem a proposed change order approved as a matter of law. An engineer who is acting on the owner's behalf during the project's construction phase is best advised to develop a joint protocol with the owner in order to comply with the Act's time standards and

substantive requirements. Equally important is the Act's requirement for a good faith certification. An engineer that rejects a proposed change order will need to certify that the rejection is made in good faith. A failure to follow the Act's requirements will result in the rejected change order being nevertheless approved as a matter of law.

The Act's impact on current practice

Based upon the Act's protocols for processing a contractor's application for payments and proposed change orders, engineers acting on the owner's behalf during the construction phase need to (1) streamline the timing of their invoice approval/review processes and coordinate the same with the project's owner, (2) retain construction counsel to examine the engineer's own contracts with the owner to (i) more precisely address the engineer's construction-phase obligations, and (ii) clearly allocate responsibility for situations where the engineer and the owner disagree when responding to a contractor's requisition or proposed change order; and (3) ensure that they have the appropriate procedures in place to properly manage project submittals.

Mr. Barra would like to acknowledge the efforts of his colleague, Jonathan Hausner, Esq., for his contributions in preparing this article.

In Remembrance of Stephen Taylor, CBE

by the membership of the Structural Engineering Institute of BSCES

On January 12, 2019 SEI Boston Chapter lost one of its longtime members. Steve Taylor had been a dedicated volunteer for SEI Boston Chapter (formerly the BSCES Structural Group) for the past 15 years including serving as the Committee's Clerk, Vice Chair and Chair. He continued being an active member on the Committee up until his passing where he was always regarded as a leader, friend, and mentor.

Steve was greatly appreciated for his commitment, technical excellence, high energy, and very dry wit, always delivered in his low-key British way. He was a highly regarded colleague to everyone and his participation was greatly appreciated at meetings and in all of the volunteer work he did.

Steve also volunteered for ACEC, serving as a long time member and Chair of ACEC/MA's Engineering Excellence Awards Committee. Having served for so long, the Committee granted him the title Chair Emeritus.

Outside of volunteering, Steve was a Senior Vice President for Mott MacDonald working out of their Boston office. One of Steve's most notable contributions to the profession included managing the Central Artery Project (The Big Dig) for Mott MacDonald, which won many awards and contributed to Steve being awarded a CBE (Commander of the British Empire).

Steve is survived by his wife Marijke, his daughters Jennifer, Stephanie, and Katie, his son Antony, and his grandson Nate. Steve will be greatly missed by all that knew him.



Steve Taylor, friend and colleague

Featured Group

ASCE Environmental and Water Resources Institute Boston Chapter 2019 Group Update

by Katie Swanson, PE, Water Resources Engineer, CDM Smith Inc

The ASCE Environmental and Water Resources Institute's (EWRI's) mission is to "provide for the technical, educational and professional needs of its members, and to serve the public in the use, conservation, and protection of natural resources and in the enhancement of human well-being." The EWRI Boston Chapter aims to fulfill this mission by engaging members throughout the Commonwealth of Massachusetts in a wide range of water resources and environmental engineering subjects. The EWRI Boston chapter hosts events throughout the year including lectures, workshops, tours, and social/networking activities.

So far, the EWRI Boston Chapter has hosted two events in the 2018–2019 fiscal year. For the first event, EWRI partnered with the Environmental Business Council for their annual softball game, held on Thursday, August 23, 2018. EWRI members hit it out of the park with others in the environmental industry while competing in a friendly, late-summer game. The second event was held on Tuesday, January 15th at CDM Smith in Boston. A panel of local and

national experts discussed the Envision™ certification program, which establishes an industry-wide framework of sustainability metrics to help guide the planning, design, and delivery of sustainable and resilient infrastructure. Anthony Kane from the Institute for Sustainable Infrastructure challenged the audience to think outside the industry norm when approaching sustainable infrastructure, noting that code compliance simply translates to: "if we were any worse, it would be illegal."

Our year is not over yet! We have a busy spring lineup of panel discussions and lectures. Our next event, scheduled for Thursday, February 28th, will feature a panel focusing on green stormwater infrastructure. Sara Burns from The Nature Conservancy, Kate England from Boston Water and Sewer Commission, and Michael Dutton from the Town of Bridgewater will each present on their unique perspectives of green stormwater infrastructure, followed by a Q&A session.

Later this spring will be the annual John R. Freeman Fund Lecture, scheduled for Wednesday, April 10th. At this event, Dr. Dan

Gessler of Aldan Labs will discuss the role of hydraulic and physical models in the management of the Mississippi River, focusing on the design and construction of sediment diversions aimed at restoration and risk reduction. As always, the lecture will be held at no cost to attendees, with the focus on fostering interest in water resources engineering for students and young professionals.

The biennial Karl K. Kennison Lecture on hydraulics will also be hosted this spring at a date to be determined. Additional information about upcoming events can be found on the [BSCES website](#).

All of these activities would not be possible without the dedication and support from our active EWRI committee members, who serve on a volunteer basis. We're always looking for new members to help run events and to bring new ideas to the table. If you're interested in getting involved with the EWRI Boston Chapter, please contact Katie Swanson at swansonk@cdmsmith.com or ewri@bsces.org for more information.

President's Report

continued from page 1

In other BSCES news, we are at the beginning stages of creating an Infrastructure Report Card for Massachusetts, similar to ASCE's national Infrastructure Report Card. This will be a big endeavor and we will need volunteers to assist, so if anyone would like to help this effort, please let me know!

Please join me in congratulating BSCES member Dr. Kenneth Maser, Ph.D., P.E., M. ASCE, who was recently selected by ASCE's Transportation & Development Institute (T&DI) to receive the 2019 Wilbur S. Smith Award for "leadership and instrumental innovation, both domestically and internationally, in developing and providing highway agencies with driving-speed non-destructive methods for subsurface condition evaluation of pavements and bridge decks." Congratulations Dr. Maser on this prestigious award!

As a reminder, the BSCES Awards Committee is soliciting nominations for a variety of annual awards through March 11, 2019. This is an excellent opportunity to recognize individuals and employers that have made significant contributions to the civil engineering profession and their communities, so if you know of a worthy candidate, please don't hesitate to fill out a nomination! More information including hyperlinks to the awards nomination forms is [available here](#).

The February *BSCESNews* theme is Water Infrastructure and its featured group is the Environmental & Water Resources Institute Boston Chapter. Please read the above article by EWRI Boston Chapter Chair Kathryn Swanson, P.E., a water resources engineer working for CDM Smith. If you are interested in submitting an article, please contact our Newsletter Editorial Board Chair, Bruce Jacobs, at sr.vp1@bsces.org.

I'd like to once again thank our Society Sponsors especially EarthSoft, Inc. which is the sponsor of this month's newsletter. I would encourage you to read EarthSoft's page 1 article entitled, "Benefits of an Automated Electronic Field Data Collection Workflow."

Finally, if you would like to participate in one of our 10 committees, or our eight technical groups/institute chapters, or volunteer at an Outreach event, please visit our [website](#) and email the current committee or group chair, or email me at the link below, and I will direct you to the right person!

Please do not hesitate to reach out with comments, questions, and feedback, so that we may continue to serve you.

Respectfully submitted,
Geoffrey
president@bsces.org

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.

What You Need to Know About the 2016 Modifications to the ASCE/SEI 7 Minimum Design Loads Standard

Sponsored by the Structural Engineering Institute Boston Chapter

Tuesday, March 5, 2019

Tufts University, Medford, MA

6:30 PM Social/Registration/Pizza

7:15 PM Presentation

Greg Soules, PE, SE, P.Eng, SECB
Senior Principal Structural Engineer
McDermott International

ASCE/SEI 7 Minimum Design Loads and Associated Criteria for Buildings and Other Structures is a nationally adopted loading standard for the analysis and design of buildings and other structures. The 2016 edition of this consensus standard has been adopted into the 2018 International Building Code. This lecture will provide an overview of the significant changes and much needed updates incorporated in the 2016 edition. The new ASCE 7 Hazard Tool will also be demonstrated. The presentation will also inform the audience about the ASCE/SEI standard development process and future of performance-based codes, as well as promote opportunities to get involved in the process.

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

YMG March Social/Rosie's Place Drive

Sponsored by the Younger Member Group

Tuesday, March 12, 2019

Bell in Hand Tavern, Boston, MA

6:00 PM – 8:00 PM

Please join the Younger Member Group for a networking social and Rosie's Place volunteer drive at Bell in Hand Tavern. Appetizers will be provided! Founded in 1974, Rosie's Place is the first women's shelter in the United States. Their mission is to provide a safe and nurturing

environment that helps poor and homeless women. Please consider bringing with you a donation item for Rosie's Place.

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

2019 Jon R. Freeman Lecture: The Role of Models in the Design of the Lower Mississippi River—Research Talk and Physical Model Open House

Sponsored by the Environmental & Water Resources Boston Chapter

Wednesday, April 10, 2019

Alden Research Laboratory, Holden, MA

6:00 PM Reception, Physical Models

7:00 PM Lecture

Dan Gessler, PhD, PE, D.WRE Vice President,
Alden Research Laboratory, Inc.

Between 1932 and 2010 the state of Louisiana has lost about 2,006 square miles of land due to a combination of subsidence, sea level rise, and management of the Mississippi River. The Barataria and Breton Basins have experienced some of the largest land loss—almost 700 square miles. The Coastal Protection and Restoration Authority (CPRA) is a single state entity with the authority to protect and restore the lands of coastal Louisiana. Their \$50 billion coastal master plan includes restoration and risk reduction projects including the design and construction of unprecedented sediment diversions for the Barataria and Breton Basins. After briefly discussing the history of the land loss, this presentation will focus on the numeric and physical modeling required to design the major diversion features. There will also be an opportunity to view the two 1:65-scale, live-bed physical models Alden is constructing to test performance and effectiveness of the diversions.

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

continued on page 11

ASCE Webinars

ASCE WEBINARS

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ASCE | CONTINUING EDUCATION

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. Some upcoming webinars include:

March 14, 12:00 – 1:00 PM ET

Stormwater and Environmental Permitting: Effective Communication and Permitting Preparation

March 18, 12:00 – 1:00 PM ET

21st Century Bridge Evaluation: New Technologies and Solutions

March 22, 12:00 – 1:00 PM ET

Introduction to the Seismic Design of Nonbuilding Structures to ASCE 7-16

April 3, 12:00 – 1:00 PM ET

Avoid Costly Mistakes Using HEC-RAS: Geometric Misrepresentations

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

2018–2019 BSCES Program Sponsors

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Upcoming Events *(continued from page 10)*

30th Annual Francis M. Keville Dinner

Sponsored by the Construction Institute Boston Chapter and The Transportation & Development Institute Boston Chapter

Wednesday, April 24, 2019

Revere Hotel Boston Common, Boston, MA

5:30 PM Reception, 6:30 Dinner

Keynote Speaker: Steve Poflak, General Manger, Massachusetts Bay Transportation Authority

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

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.

Suggest a Seminar Topic

Is there an engineering topic that you would like BSCES to feature in an upcoming seminar? If so, members of the BSCES Program Committee would like to hear from you.

Charged with developing technical training programs that address members' professional development needs, the Program Committee oversees the Society's National Highway Institute training, spring and fall Professional Engineer Refresher Courses and other topical workshops. If you have a technical topic that you would like the Program Committee to consider, send your suggestion to BSCES Program Committee Chair Jeff Lewis at jlewis@garofaloassociates.com or BSCES Association Manager Rich Keenan at rkeenan@engineers.org.

Become a BSCESNews Contributor

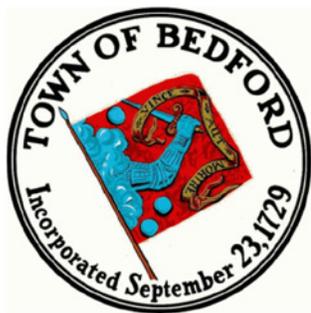
Would you like to contribute to the newsletter of the oldest civil engineering society in the country? The BSCES Newsletter Editorial Board is seeking members who are willing to write articles for publication in *BSCESNews* or to join the Editorial Board.

Typically 300 to 700 words, *BSCESNews* featured articles are about technical topics or professional matters of interest to civil engineers. The April 2019 issue of the newsletter for example, will highlight the Government Affairs & Professional Practice Committee and feature one or more articles on the theme of State of Infrastructure.

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

To learn how you can become a *BSCESNews* contributor contact BSCES Newsletter Editorial Board Chair Bruce Jacobs at sr.vp1@bsces.org or BSCES Association Manager Rich Keenan at rkeenan@engineers.org.

Classifieds



Town of Bedford—Transportation Program Manager Contract Employee

The Town of Bedford DPW seeks a contract Transportation Program Manager. The position is funded from 4/1/19 to 6/30/20 with future funding likely. This person will oversee a \$3.4M transportation capital and maintenance program in FY2020. This is an hourly (\$60–\$70/hr.), non-benefitted position. A complete job posting and application are on the Town's website at www.bedfordma.gov/employment. Applications received by 3/15 will be given first consideration.

The Town of Bedford is an Affirmative Action/ Equal Opportunity Employer

WDG | Waterfield Design Group

Office Director / Principal Opportunity — NY State

Boston based firm looking for mid-level + civil engineer to lead successful and established office located in Sullivan County area of New York State. Candidate must be a MA registered PE, be capable of obtaining NY PE within 6 months, a minimum of 15 years experience with site design, grading, drainage, stormwater reports, roadway design, utilities. Must be CAD proficient and have experience making permitting presentations. Must have client/project management skills and be able to manage people. Position is for Office Principal. Excellent writing and verbal communication skills are a must. Salary commensurate with experience. We would cover moving and relocation expenses. Projects are located in Sullivan, Ulster, Orange, county area.

Interested candidates contact Craig Miller at Waterfield Design Group at cmiller@wdgrp.com.

Classifieds (continued from page 11)

WHAT DOES IT TAKE TO DELIVER CLEAN WATER? IT COULD BE YOU!

The Massachusetts Water Resources Authority (MWRA) is looking to fill several full time positions to support the Metropolitan Tunnel Redundancy Program. The Program consists of planning, design and construction of approximately 14 miles of deep rock tunnel at an estimated cost of \$1.4 billion. Current openings include the **Senior Geotechnical Engineer** and **Engineering Intern**. As a member of the Tunnel Redundancy Department, you will serve in a leadership position on this exciting new megaproject.

Please visit <https://mwra.applicantpro.com/jobs/> for details, requirements on open positions, and to apply. Be sure to check back for future, exciting opportunities. Also, check out our comprehensive benefits plan.

MWRA provides wholesale water and wastewater services to 3 million customers in 61 communities in eastern and central Massachusetts.

MWRA is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, national or ethnic origin, age, religion, disability, sex or gender, sexual orientation, gender identity or expression, or veteran status.



Massachusetts Water Resources Authority
 100 First Avenue
 Boston, MA 02129
 (617) 242-6000



 **MILONE & MACBROOM**

We are seeking a **Geotechnical Project Engineer** to join our firm, HTE Northeast, Inc. (a Milone & MacBroom, Inc. company) located in Bedford, New Hampshire. This position is for a professional engineer who will be responsible for design, planning, scheduling and coordinating of Geotechnical Engineering work, as well as managing a range of projects varying in size and complexity.

Responsibilities:

- Provide engineering and consulting services for a wide variety of projects and clients.
- Plan, schedule, coordinate and execute detailed phases of geotechnical investigations and other technical work.
- Perform field investigations, engineering analysis, calculations, and provide comprehensive recommendations to clients both verbally and within written reports.
- Assist in preparing and responding to proposals and identifying new clients.
- Provide direction to and mentor other technical staff.
- Provide quality control review of technical work and deliverables.
- Lead and participate on multi-disciplinary/geographic project teams.

Qualifications:

- Bachelor's Degree in civil engineering with an emphasis in geotechnical engineering. Master's degree in geotechnical engineering preferred.
- 10+ years of experience in geotechnical engineering
- Professional Engineer licensure in New Hampshire
- Working knowledge of environmental considerations with respect to geotechnical engineering applications.
- Strong client relationships
- Strong report writing, communication, and presentation skills
- Team player, with patience and skill to train and mentor others
- Valid driver's license
- Ability to travel in the Northeast region

To learn more about this opportunity, please submit your cover letter and resume to: www.miloneandmacbroom.com/careers

Milone & MacBroom, Inc. is an Affirmative Action/Equal Opportunity Employer M/F/D/V.

2019 Employer Recognition Awards

The Boston Society of Civil Engineers Section of the American Society of Civil Engineers Awards Committee invites you to nominate an organization to receive the Small Employer Recognition Award or the Large Employer Recognition Award. Please see the following awards description and page 2 of this form for nomination instructions. To be eligible to receive this award your award nomination must be received by the BSCES Awards Committee no later than **Monday, March 11, 2019**.

As a means of fostering the members of the civil engineering profession, the Boston Society of Civil Engineers Section/ASCE has established an award to recognize those employers who commit to providing exceptional opportunities to their engineers. Special recognition will go to those organizations who exhibit exemplary support as evidenced by:

1. Encouraging technical and professional growth through continuing education, training, mentoring, project experience, participation in development of technical papers or presentations, and other means.
2. Tackling staff quality-of-life issues in the modern workplace.
3. Contributing to the community to make a positive impact.
4. Encouraging active participation in professional societies such as ASCE/BSCES.

Members who want an organization to be considered for recognition should provide a letter demonstrating the firm's commitment to its engineers. Firms nominated shall be actively participating in BSCES via sponsorship, employee membership, contributions to the newsletter, etc. Letters shall include the total number of employees in the firm, number of BSCES members, and cite specific examples of its employees being actively involved in BSCES.

The awards committee will review the nominations and select an exemplary small employer and a large employer in the Section. Organizations with less than 50 employees are eligible for the Small Employer Award. Awards will be presented at the 170th BSCES Annual Awards Dinner. Successful recipients will be considered for endorsement as potential (future) applicants for the ASCE Employer Recognition Award. No organization will be eligible to receive the award in consecutive years.

Name of Organization: _____

Complete and return this nomination form and attachment to the BSCES Awards Committee no later than Monday, March 11, 2019 to be eligible for the award.

Nominator/Title: _____

Address: _____

Telephone: _____ Email: _____

Signature: _____ Date: _____

Organization: _____

Contact Person: _____

Title: _____

Office Address: _____ Website: _____

Telephone: _____ Email: _____

Please attach a brief (no more than two pages) narrative describing why the organization meets the criteria described in this nomination form.

Please complete this form and the additional pages and return it via email, fax, or mail to bsces@engineers.org, 617/227-6783, or BSCES Awards Committee, Boston Society of Civil Engineers Section/ASCE, The Engineering Center, One Walnut Street, Boston, MA 02108-3616, respectively. For questions, contact BSCES Awards Committee Chair Michael Cunningham at 617/498-4773 or Vice.President2@BSCES.org.

Thank you for your continued support of ASCE and BSCES.

Each year, BSCES presents awards to deserving individuals in the Section or in the community who are nominated by their peers in recognition of their service. Here is your opportunity to nominate a co-worker, friend, or someone who you think deserves special recognition. Please see the following awards descriptions and page 2 of this form for nomination instructions.

The Nominations Deadline is **Monday, March 11, 2019**. The Awards Committee will review all nominations and present a list of candidates for selection by the Board of Government. Awards will be presented at the 170th BSCES Annual Awards Dinner.

I would like to nominate _____ For the:

- _____ **CITIZEN ENGINEER AWARD:** This award is presented to a BSCES member or registered professional engineer for outstanding public involvement in local or national legislation, education (at any level), non-profit volunteer organizations, community activities, or similar activities improving the image of ASCE, BSCES and the civil engineering profession.
- _____ **HORNE/GAYNOR PUBLIC SERVICE AWARD:** This award is presented to a BSCES member or registered professional engineer for unpaid public service in a municipal, state or federal-elected or appointed post for philanthropic activities in the public interest.
- _____ **GOVERNMENT CIVIL ENGINEER AWARD:** This award is presented to a BSCES member who is serving as a paid public sector engineer at a federal, state, or municipal agency, department, or authority in Massachusetts.
- _____ **CLEMENS HERSCHEL AWARD:** This award recognizes an individual who has published a paper, not necessarily published in the BSCES Journal, that has been useful, commendable, and worthy of grateful acknowledgment. If nominating for the Clemens Herschel Award, please attach the name of the paper and names of all authors, if co-authored.
- _____ **JOURNALISM AWARD:** This award is presented to a journalist or other author who has published one or more articles, papers, books, social media blogs, or films for a non-technical audience that raises awareness of the contributions of the civil engineering profession.
- _____ **PRE-COLLEGE EDUCATOR AWARD:** This award is presented to a member of the K-12 educational community who integrates engineering topics, particularly civil engineering, in a manner that benefits the profession and may promote students to pursue an engineering career. The Public Awareness & Outreach Committee reviews these nominations and recommends the recipient to the Board.
- _____ **COLLEGE EDUCATOR AWARD:** This award is presented to a member of the academic community who inspires and encourages civil engineering students through exceptional teaching and mentorship. Educators empower students to realize full potential and exemplify the profession in their classroom. Candidates should be actively teaching in a classroom setting at a college or university in New England.
- _____ **YOUNGER MEMBER AWARD:** This award is intended to recognize a BSCES member, 35 years of age or younger on February 1 in the year of the award, who has made an outstanding contribution to BSCES and/or the civil engineering profession.
- _____ **ENGINEER OF THE YEAR AWARD:** This award is presented to a BSCES member, with 15 years or more professional experience, who has exhibited extraordinary leadership in the form of managerial leadership, technical excellence, professional integrity, and mentorship of other engineers.
- _____ **PROJECT OF THE YEAR AWARD:** This award is presented to a BSCES member and her/his project team who has served in a major role on an innovative, challenging, unique, and/or complex project located in the Commonwealth of Massachusetts. The majority of the work should have been completed by engineers located within Massachusetts.

To submit a nomination, complete this form and return it by the nomination deadline via email, fax, or mail to bsces@engineers.org, 617/227-6783, or BSCES Awards Committee, Boston Society of Civil Engineers Section/ASCE, The Engineering Center, One Walnut Street, Boston, MA 02108-3616, respectively.

Name and Company Address of Nominee(s)*:

Is this a re-nomination? Yes _____ No _____

**Please attach a brief (no more than one page) explanation of the candidate's qualifications for nomination.*

Your Name: _____ Daytime Telephone: _____ Email: _____

NOTE: *If you nominated someone last year who was not selected, you may re-nominate the individual(s).*

QUESTIONS: *Contact BSCES Awards Committee Chair Michael Cunningham at 617/498-4773 or Vice.President2@BSCES.org.*



2019 SUSTAINABILITY IN CIVIL ENGINEERING AWARD

Call for Entries

The purpose of the Sustainability in Civil Engineering Award is to recognize civil engineering infrastructure projects that embody the principles of sustainability espoused by the BSCES Committee on Sustainability, ASCE, and the Institute for Sustainable Infrastructure (ISI). Such projects prominently and creatively incorporate the five sustainability indicators of quality of life, leadership, resource allocation, natural world, and climate risk.

In 2019, awards will be offered in two categories differentiating project scale.

Eligibility

To be eligible, a project must demonstrate adherence to the principles of economic, social and environmental sustainability as identified by ASCE/ ISI criteria for sustainable infrastructure. **The project must have been designed by a team of civil engineers based in Massachusetts, and must have been constructed within the last five years.**

Rules for Submission

1. Entries for the award must include:
 - A completed Entry Form ([BSCES Sustainability Award Form](#))
 - A printout of the Envision™ project assessment scoring table from the ISI website completed by an Envision Sustainable Professional (ENV SP).
2. **Entries must be submitted no later than March 11, 2019.** The winner will be announced at the BSCES Annual Awards Dinner event in 2019. Entries may be submitted electronically to bsces@engineers.org.

2017 BSCES Sustainability in Civil Engineering Award Winner

The 2017 award (small project category) was presented to the Town of Wilmington for the Yentile Farm Recreational Facility project. The Yentile Farm Recreational Facility features a multi-use turf field, basketball courts, open green space, playground, concessions building, parking, landscaping, and a hard-surfaced path. The design incorporated multiple social, environmental and economic sustainable principles allowing an abandoned, environmentally degraded site to become an energetic community space that meets the triple-bottom line of sustainability.

Prior project award winners:

- 2016 - Massachusetts Port Authority, *Logan International Airport Consolidated Rental Car Facility (ConRAC)*
- 2015 – City of Cambridge, *Alewife Stormwater Wetland*



Boston Society of Civil Engineers Section
American Society of Civil Engineers



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WSP

What You Need to Know About the 2016 Modifications to the ASCE/SEI 7 Minimum Design Loads Standard

Made possible by the [SEI Futures Fund](#) in collaboration with the ASCE Foundation

Greg Soules, P.E., S.E., P.Eng, SECB, F.SEI, F.ASCE

Senior Principal Structural Engineer, McDermott International

Serves as the Technical Authority for Seismic and Wind Engineering for McDermott International in Houston, Texas. He is Past Chair of the Energy Division of ASCE, Vice Chair of the ASCE/SEI 7 Main Committee, and Chair of the ASCE/SEI National Technical Program Committee for the ASCE/SEI Structures Congress.

Tuesday, March 5, 2019

Tufts University, Robinson Hall Room 253, 212 College Ave., Medford, MA 02155

6:30 PM Social/Registration/Pizza, 7:15 PM Presentation

ASCE/SEI 7 Minimum Design Loads and Associated Criteria for Buildings and Other Structures is a nationally adopted loading standard for the analysis and design of buildings and other structures. The 2016 edition of this consensus standard has been adopted into the 2018 International Building Code. This lecture will provide an overview of the significant changes and much needed updates incorporated in the 2016 edition. Some of the significant changes to be discussed are the new state snow load tables, the new tsunami provisions, new seismic ground motion maps, new site factors, important changes for nonstructural components and nonbuilding structures, new diaphragm procedures, new wind maps and the updated $G_C p$ values for components and cladding. The new ASCE 7 Hazard Tool will also be demonstrated. The presentation will also inform the audience about the ASCE/SEI standard development process and future of performance-based codes, as well as promote opportunities to get involved in the process.

Registration Deadline: Friday, March 1, 2019

\$25 Members, \$30 Non-Members

\$20 Public Sector Members, \$25 Public Sector Non-Members

\$10 Senior Members (65+), Students

Information/Registration:

Register to attend this meeting and pay by credit card online at <http://bit.ly/2CV2ric>. 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 Friday, March 1, 2019 and no-shows will be billed.

Directions to Lecture Hall and Parking:

Lecture Hall: [Tufts University, Robinson Hall Room 253, 212 College Avenue, Medford, MA](#)

Parking: [Tufts University, Dowling Hall Garage, 419 Boston Avenue, Medford, MA](#)



This presentation provides (1.5) Professional Development Hours (PDH)

Supported by the staff of The Engineering Center Education Trust



BSCES Younger Member Group is hosting...

March Social / Rosie's Place Drive

Tuesday, March 12, 2019

6:00 PM - 8:00 PM

Bell in Hand Tavern, 45 Union Street, Boston MA



Rosie's Place is the first women's shelter in the United States founded in 1974. Their mission is to provide a safe and nurturing environment that helps poor and homeless women. The place not only provides meals and shelter but also creates answers for 12,00 women a year through wide-ranging supporting, housing and education services.

Where:

Bell in Hand Tavern
45 Union Street, Boston, MA

Cost:

Free to attend. Please RSVP to
YMG@BSCES.ORG

RSVP Deadline:

Friday, March 8, 2019

Please Join the Younger Member Group for a Networking Social and Rosie's Place volunteer drive on March 12, 2019 at Bell in Hand Tavern. Appetizers will be provided! Please consider bringing with you an item from the Donation list below!

For more information, contact
YMG@BSCES.ORG

Donation Items:

- Shampoo & Conditioner (Full Size and Travel Size)
- Toothpaste & Toothbrushes (Full Size and Travel Size)
- Deodorant & Lotion / Soap / Lip Balm (Full Size and Travel Size)
- Brushes & Combs
- Maxi Pads
- New Towels
- New Clothes - Sunglasses, Yoga Pants, T-Shirts, Jeans, Other Spring Attire
- Books

2018-2019 Society Sponsors: **AECOM | CDM Smith | EarthSoft | GZA | Louis Berger**

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Subsurface Constructors | Tighe & Bond, Inc. | Tufts University | VHB | Wentworth Institute of Technology
Weston & Sampson Engineers, Inc. | WSP**

The Role of Models in the Design of the Lower Mississippi River Sediment Diversions

Research Talk and Physical Model Open House

Wednesday, April 10, 2019

Alden Research Laboratory, Inc.

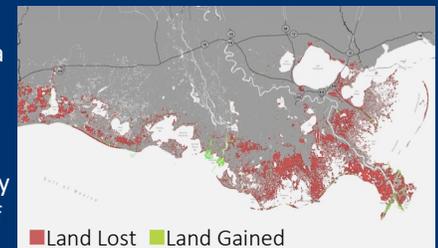
30 Shrewsbury Street, Holden, MA 01520 [Map It](#)

6:00 p.m. Reception, Light Dinner, Physical Models; **7:00 p.m.** Lecture

Presented by Dan Gessler, PhD, PE, D.WRE

Vice President, Alden Research Laboratory, Inc

Between 1932 and 2010 the state of Louisiana has lost about 2006 square miles of land due to a combination of subsidence, sea level rise, and management of the Mississippi River. Computer models predict a further loss of 1800 to 4200 square miles in the next 50 years, amounting to 55% of the land in Plaquemines Parish and resulting in \$300 million in annual economic damage. Following hurricanes Katrina and Rita, the Coastal Protection and Restoration Authority (CPRA) was formed as a single state entity with the authority to protect and restore the lands of coastal Louisiana.



The \$50 billion coastal master plan includes restoration and risk reduction projects. The restoration projects include barrier island restoration, hydrologic restoration, marsh creation, ridge restoration, sediment diversion, and shoreline protection. The Barataria and Breton Basins have experienced some of the largest land loss—almost 700 square miles. Two sediment diversions are being designed, one for each basin. The sediment diversions connect the Mississippi River to the basins, allowing for the controlled diversion of up to 75,000 cfs of water and sediment to the Barataria basin and 30,000 cfs to the Breton basin.

The design and construction of sediment diversions on the scale proposed for Barataria and Breton is unprecedented. After briefly discussing the history of the land loss, the presentation will focus on the numeric and physical modeling required to design the major diversion features, including the inlet, conveyance, and outlet structures. ***Alden is constructing two 1:65-scale, live-bed physical models to test performance and effectiveness of the diversions. The models are currently under construction and the lecture will include the opportunity to see the completed models.***



Dan Gessler, Vice President, Alden Research Laboratory, has been with the company for over 17 years. As a registered professional engineer, he leads the hydraulic modeling practice and provides technical leadership in numeric and physical modeling—he's particularly interested in modeling efforts that combine the two. Prior to joining Alden, Dan worked as a research scientist at Colorado State University where he also earned his PhD.

This FREE event is 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. [Register online](#) or at the door. Carpooling is encouraged. Alternately, for those traveling from the Boston area, the MBTA Commuter Rail 4:20 p.m. train from South Station arrives at Union Station in Worcester at 5:45 p.m. Transportation will be provided from Union Station to Alden, and carpooling will be coordinated to ensure a safe return to the Boston area.

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30th Annual Francis M. Keville Scholarship Dinner

Keynote Speaker:

Steve Poftak

General Manager

Massachusetts Bay Transportation Authority

Keynote Speaker Introduction:

Joseph Aiello

Chair, Fiscal & Management Control Board

Massachusetts Bay Transportation Authority

Wednesday, April 24, 2019

Revere Hotel Boston Common, Grand Master Ballroom

200 Stuart Street, Boston, MA 02116

5:30 PM Reception; 6:30 PM Dinner

Registration Deadline: Friday, April 12, 2019

\$100 Members, \$130 Non-Members

\$75 Public Sector Members, \$85 Public Sector Non-Members

\$85 Senior Members (65+), \$65 Students

\$1,000 Table of 10

Information/Registration:

Register to attend this meeting and pay by credit card online at <http://bit.ly/KevilleDinner2019>. 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 12, 2019 and no-shows will be billed.



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