

**Events**

162nd BSCES Annual Awards Dinner

9.16.10

Construction and Structural Groups Event

9.23.10

2010 Bertram Berger Seminar

9.30.10

Younger Member Group Networking Event

10.7.10

13th Arthur Casagrande Memorial Lecture

10.13.10

Waterways Group Event

10.21.10

Structural Group Event

10.28.10

*Further Details Inside*



**President's Report**

*Danielle H. Spicer, PE, LEED AP  
Project Manager, AMEC*

This past July, BSCES began its 163rd year. As this year's president I am looking forward to helping BSCES build on this history as one of the most successful sections of ASCE. Last year BSCES did just that, focusing on enhancing education opportunities for our members, establishing an active Government Affairs & Professional Practice Committee, strengthening the role of our executive director, and redefining the operational model for The Engineering Center and our interaction with it.

I am pleased to say that the BSCES technical groups provided a plethora of successful educational events last year and we will continue to provide these crucial educational programs to our membership for this upcoming year. In addition to our technical groups, our exemplary Public Awareness & Outreach (PAO) Committee continues to grow each year, not only with the number of events they put on, but also the educational opportunities they provide for up-and-coming engineers. Reed Brockman, chair of the PAO Committee, has worked tirelessly to make the committee one of the most successful groups in the country and BSCES looks forward to continuing his efforts this year.

Last year, Peter Richardson, chair of the Government Affairs & Professional Practice Committee, took on the initiative of reactivating this group. This was a big initiative, and his efforts resulted in

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**BSCES NEWS**

A MONTHLY PUBLICATION OF THE BOSTON SOCIETY OF CIVIL ENGINEERS SECTION/ASCE

**Infrastructure**



**ASCE and Governing Magazine Hold Infrastructure Roundtable Discussion in Boston**

*by Peter A. Richardson, PE, LEED AP, Vice President, Green International Affiliates, Inc.*

On Tuesday, August 30, 2010, leaders from the major state agencies involved with infrastructure, such as MassDOT, Massport, DCR and MWRA, as well as heads of City of Boston agencies, the Boston Water and Sewer Commission, regional planning agencies and the US Army Corps of Engineers met with ASCE and BSCES representatives at the Seaport Hotel in Boston. The purpose of this meeting was to discuss infrastructure investment and in particular, the *5 Key Solutions* developed by ASCE as part of the *2009 Report Card on America's Infrastructure*. The event was organized by ASCE and *Governing* magazine, with support from BSCES.

Earlier this year, ASCE and *Governing* magazine held national level roundtable discussions in Washington, DC, which included congressional leaders and federal agencies. ASCE reported on these talks in the April, 2010 issue of *Civil Engineering* magazine. In order to get a more local perspective, ASCE and *Governing* magazine decided to hold state level talks at five locations across the nation, Houston, Sacramento, Raleigh, Omaha and Boston.



*Past BSCES President and MWRA Chief Engineer, Charlie Button weighs in on ASCE's 5 Key Solutions*

The discussions, which were moderated by ASCE's Managing Director of Government Relations and Infrastructure Initiatives Brian Pallasch, were lively and open, with attendees offering their unique perspectives on the key solutions to increase the national cumulative grade of D cited in the ASCE Report Card and address the projected \$2.2 trillion deficit in infrastructure funding over the next five years. ASCE's *5 Key Solutions* are:

1. Increase Federal Leadership in Infrastructure
2. Promote Sustainability and Resilience
3. Develop Federal, Regional, and State Infrastructure Plans
4. Life-Cycle Costs and Ongoing Maintenance
5. Increase and Improve Infrastructure Investment from All Stakeholders

Most participants agreed that there must be greater federal leadership and political will to improve infrastructure, but not everyone agreed

*continued page 2*

**SPONSORING FIRMS**



### President's Report

*continued from page 1*

tremendous success. BSCES was a strong participant in Design Professional's Day at the State House and the Government Affairs Committee worked diligently with Senator Marc Pacheco's office on trying to pass Senate Bill 427 (An Act Relative to Dam Repair, Removal and Replacement). Largely due to our success last year in government affairs, ASCE selected BSCES (one of five sections selected) to host an ASCE government relations event on August 31. This event consisted of more than 20 political leaders, policy leaders and members of BSCES who are well versed on the subject of critical infrastructure. The discussion will focus on local infrastructure deficiencies, how best to address them and how they fit into the national picture. With events like these underway, BSCES looks forward to expanding such government affairs initiatives throughout this year

BSCES worked hard last year redefining our executive director role as well as working closely with The Engineering Center (TEC) and its sponsors on the TEC operational model, contracts, policies and personal interaction. This work will continue to evolve as we strive to make BSCES better each year.

In addition to the goals mentioned above, BSCES will also be revamping its website this fall. We look forward to having a more user-friendly website that will not only be useful to our members, but also a good source of information for parents, kids, and teachers interested in engineering.

The great success and growth we're fortunate to enjoy is solely dependent upon our volunteers. As we look forward to providing successful events for our membership and

growing our public awareness and government affairs initiatives, we continue to need more volunteers. I encourage you to go to our website ([www.bsces.org](http://www.bsces.org)) and take a look at the technical groups and committees we have. Show your support for BSCES by becoming active in one of them and helping us reach our goals.

### Infrastructure Roundtable Discussion in Boston

*continued from page 1*

on the level of federal involvement that is needed. For example, transportation systems which cross state lines may require more federal input than a water or wastewater system that serves a particular watershed.

All agreed that sustainability and resiliency need to be incorporated into future projects. It was noted how older pipes in the City of Boston that have greater wall thicknesses have stood the test of time better than more recent pipe installations. Through innovative rehabilitation methods, older pipes have been rehabilitated for much less money than replacement, extending their useful lives and freeing up much needed dollars for other projects.

The need to have adequate funding in place for long term maintenance was also discussed. The agencies or authorities that have control of their own revenue stream expressed a better ability to maintain their operations and make capital improvements as opposed to agencies that depend on general tax revenues. All seemed to be in agreement that an increase in the gas tax is needed for future transportation investment, but that the likelihood of a gas tax passing in the current political climate is slim. Look for a full report of the roundtable discussions in *Civil Engineering* and *Governing* magazines in the near future.

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**At Field's Point WWTF, Innovation Leads the Way**

*by Mark Thompson, PE, Principal Engineer, and David Peterson, PE, LEED AP, Senior Project Engineer, Kleinfelder/S E A Consultants*

The City of Providence, RI is situated at the head waters of Narragansett Bay, which forms New England's largest estuary, functioning as a large natural harbor. About 1.8 million people live in the watershed which covers a land area of 1,657 square miles. The wastewater treatment facility (WWTF) at Field's Point in Providence was constructed in 1901 and reconstructed in 1980. Today, this facility treats up to 77 MGD of wastewater from Providence and four surrounding communities making it the largest WWTF in Rhode Island. The plant currently operates with a complete mix conventional activated sludge process and discharges to the Providence River in the upper reaches of the Narragansett Bay. The Narragansett Bay Commission was created in 1980 to own and manage the wastewater utility. In response to high nitrogen levels in Narragansett Bay and a subsequent Rhode Island Pollution Elimination System effluent permit limit of 5 mg/l total nitrogen, the Commission retained Kleinfelder/S E A Consultants to help it plan, design, and provide construction oversight of the largest Integrated Fixed Film Activated Sludge (IFAS) treatment system in the world.

Implementing nitrogen removal to 5 mg/l at the Field's Point Facility has posed many challenges. In particular, these challenges include limited useable space at the WWTF and the need to maintain effluent water quality without relaxation in the permit. These challenges drove many of the design and construction approaches employed.

The IFAS process was chosen primarily due to space limitations, as it has the significant advantage of requiring no additional aeration tank volume. The process consists repurposing each complete mix aeration tank into a series of treatment zones, including a floating media zone



*Precision Engineering: Performing Major Surgery on Large-Scale Operating Wastewater Treatment Works. Photo courtesy of Rhode Island Department of Environmental Management*

made of floating plastic or sponge media. The suspended media provides significant surface area for the growth of attached (fixed) organisms. Because fixed growth organisms are known nitrifiers they enhance the activated sludge process by developing a greater than typical mass of micro-organisms in the aeration tank. Because the media is retained in the IFAS zone of the aeration tanks, no additional mass loading is passed downstream to the clarifiers, preserving TSS removal capabilities.

To maintain effluent water quality and minimize disturbances to plant operations construction sequencing was considered during design. Major sequencing requirements include: by-pass pumping around treatment units; restricting the number of units out of service; building construction sequencing; and defining the critical path for construction. Two important construction

sequencing and phasing methods used to maintain the facility's operations are critical path scheduling and coordinated, detailed sequencing as dictated in the Contract Documents. For instance, it is projected that sequencing the design and construction of the Screening Building in 39 steps will save the Commission \$1.5M in avoided by-pass pumping costs.

The project also includes several energy related improvements. Highly efficient pump drives and turbo blowers were specified, qualifying the Commission for utility rebates. Also, the project will upgrade the plant's electrical infrastructure by installing an electrical capacitor bank to reduce the peak electrical demand charges and provide up to a 25% savings to the Commission's annual electrical expenditure of approximately \$2M.

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## Ballot Questions Could Impact Civil Engineers

by Peter A. Richardson, PE, LEED AP, Vice President, Green International Affiliates, Inc., BSCES Government Affairs & Professional Practice Committee Chair

Two ballot questions that will appear on the state ballot this November 2, 2010, could impact civil engineers in Massachusetts depending on the outcome of the votes. **Question 2 on the 2010 Massachusetts ballot, Comprehensive Permits for Low- or Moderate- Income Housing**, involves Chapter 40B of the Massachusetts General Laws, which allows comprehensive permits for low- or moderate- income housing to be issued from a city or town's zoning board of appeals (ZBA), instead of by individual permits from each local agency or official having jurisdiction over any aspect of the proposed housing. A "Yes" Vote on Question 2 would repeal the state law allowing the issuance of a single comprehensive permit to build housing that includes low- or moderate-income units. The repeal would take effect on January 1, 2011, but would not stop or otherwise affect any proposed housing that had already received both a comprehensive permit and a building permit for at least one unit.

Under the existing law, the ZBA holds a public hearing on the application and considers the recommendations of local agencies and officials. The ZBA may grant a comprehensive permit that includes conditions or requirements concerning the height, site plan, size, shape, or building materials of the housing. Persons aggrieved by the ZBA's decision to grant a permit may appeal it in court. If the ZBA denies the permit or grants it with conditions or requirements that make the housing uneconomic to build or to operate, the applicant may appeal to the state Housing Appeals Committee (HAC). After a hearing, if the HAC rules that the ZBA's denial of a comprehensive permit was unreasonable and not consistent with local needs, the HAC orders the ZBA to issue the permit. The HAC's decision is also subject to review in the courts.

Many communities are opposed to Chapter 40B because the law limits their ability to regulate development in the manner originally established

under their Zoning /Development regulations and because it places the approval process in the hands of a state committee. Opponents also claim that after being in existence for 40 years, Chapter 40B has failed because Massachusetts is the third most expensive state in the country to live in and that only a small percentage of housing units built under 40B developments are actually affordable, with approximately 3 out of 4 being market value units. There are also claims of developers abusing the system and skirting the law's profit cap. Proponents of Chapter 40B contend that the law is needed to ensure that a minimum number of affordable housing units are provided in communities, especially in more affluent communities which may want to prevent low income housing.

**Question 3 on the 2010 Massachusetts ballot, Sales and Use Tax Rates**, would reduce the state sales and use tax rates from the current rate of 6.25% to 3% as of January 1, 2011. The proposed law provides that if the 3% rates would not produce enough revenues to satisfy any lawful pledge of sales and use tax revenues in connection with any bond, note, or other contractual obligation, then the rates would instead be reduced to the lowest level allowed by law. The proposed law would not affect the collection of monies due the Commonwealth for sales, storage, use or other consumption of tangible personal property or services occurring before January 1, 2011. A "Yes" vote on Question 3 would reduce the state sales and use tax rates to 3%.

Proponents of the measure, including The Alliance to Roll Back Taxes headed by Carla Howell and Michael Cloud, say rolling back the sales tax to 3% will stimulate \$132 million in private sector investment; put an average of \$688 back in the pockets of 3,400,000 taxpayers and create 33,000 new, private sector jobs. Opponents to Question 3 claim that there is no current backup plan in place if the measure is approved and that it would be

catastrophic to communities, which would likely see significant cuts to local aid. Furthermore, the measure does not address the funding of the MBTA, which depends on the state sales tax for a significant portion of its revenue.

BSCES has not yet taken an official position on either of these ballot questions but wants to inform the membership of the issues and the arguments on both sides. Certainly, any changes to existing laws that result in less housing units being built in Massachusetts (affordable and market rate) or that prevent the Commonwealth or cities and towns from being able to invest properly in infrastructure, will have negative consequences for our members and the citizens of Massachusetts.

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Would you like to contribute to an award winning ASCE section newsletter? The BSCES Newsletter Editorial Board is seeking members who are willing to write articles for publication in BSCESNews or join the Editorial Board.

Typically 300 to 700 words, BSCESNews feature articles are about technical topics or professional matters of interest to civil engineers. The November 2010 issue of the newsletter for example, will feature one or more articles related to structural and/or structures.

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

For more information on how you can become a BSCESNews contributor contact BSCES Newsletter Editorial Board Chair Dave Manugian at [dmanugian@town.oxford.ma.us](mailto:dmanugian@town.oxford.ma.us) or BSCES Executive Director Rich Keenan at [rkeenan@engineers.org](mailto:rkeenan@engineers.org).



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### BSCES Infrastructure Group

by Michelle Jose, EIT, Engineer, Greenman-Pedersen, Inc., BSCES Infrastructure Group Chair

Established as a committee in 1985 and a technical group in 1989, the BSCES Infrastructure Group is one of BSCES' ten technical groups. "Infrastructure" can be defined as public assets that help facilitate the operations of our society, including the diverse world of transit systems to water supply and distribution systems. With the multifaceted nature of our group, we strive to provide education in all fields of Civil Engineering, focusing on the challenges of the state of the infrastructure itself, as opposed to the technical aspects of design and construction covered by other technical groups. Our mission is to focus on bringing full awareness to the public and the civil engineering community in general about the existing conditions and improvements of the Commonwealth of Massachusetts' infrastructure systems. We in the Infrastructure Group focus on organizing a minimum of two to three technical meetings yearly, developing an annual special project, and coordinating and managing the Herzog Award technical writing contest.

For the past 16 years, the Infrastructure Group has been holding the Model Bridge Competition as a yearly special project. As one of our biggest events each year, the Model Bridge Competition has attracted students, teachers, and volunteer engineers from all over Massachusetts. Sponsored by our group through coordination with the BSCES Public Awareness & Outreach Committee, Northeastern University's NUPrime Program, MassPEP, and several local area consulting firms, many students from local area high schools and middle schools participate in the yearly Model Bridge Competition event which culminates every year in February. This year, we plan on adding design challenges to the

traditional competition specifications for the students to further test their design capabilities. Engineers from the community and teachers volunteer their time to mentor the students for approximately three months before the competition. In preparation, the students work hard for many after school hours to build their bridges and learn about structural engineering principles while perfecting their designs.

As advocates of our infrastructure system, every year the Infrastructure Group reviews submitted technical papers for the Annual Ernest A. Herzog Award, which was established to promote an awareness of and to recognize innovative improvements to infrastructure. The Infrastructure Group honors a worthy recipient whose paper identifies an infrastructure project, innovation, or idea which has dramatically improved service to the public. The recipient receives a monetary award and is invited to give a short presentation on their winning paper at our Annual Awards Celebration Dinner, which is held in May.

In addition to coordinating the Model Bridge Competition, the Infrastructure Group holds the Ralph Salvucci On-line Bridge Design Contest (local branch of the West Point Bridge Design Contest) with the BSCES Public Awareness & Outreach Committee. In this competition, students are assigned e-mentors and aim to design the most economical and well designed bridge using a free West Point designed program. Students begin designing in February and submit their designs via the internet by the end of March. Competition winners are also awarded at the Annual Awards Celebration Dinner in May.

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## Hidden Infrastructure

by David M. Manugian, PE, Town Engineer/Planner, Town of Oxford

Thanks to those who responded to June's hidden infrastructure question on the Minuteman Bikeway. The bikeway runs 11 miles from Depot Park on South Street in Bedford to the Alewife T Station in Cambridge. Thanks to Lee Wooten and Maureen Sakakeeny for responding.

In the colonial period the location of the bikeway was a traffic route to and from Cambridge. Paul Revere followed much of the route when warning neighboring towns that the British regulars were heading to Concord to seize military supplies. The rail line which eventually became the Bikeway was laid out east of Lexington in 1846 by the Lexington and West Cambridge Railroad. It was extended west of Lexington in 1873 by the Middlesex Central Railroad.

The concept for converting the rail corridor to a commuter bicycle path was first discussed in 1974. Rail service stopped in 1981 and the bikeway was completed in 1993. In 2008 the Minuteman Bikeway was inducted into the National Rail-Trail Hall of Fame.

Whereas the Bikeway route has provided distinct transportation services over time, other infrastructure is serving multiple purposes at the same time. The attached picture shows a section



Photograph courtesy of Google Earth

of state road in a Massachusetts mill town. Over 17,000 vehicles travel on it daily. But the road also sits on infrastructure serving another significant purpose.

Anyone who can identify the location of this infrastructure and one additional fact about it will be recognized in a future issue of *BSCESNews*. Please email your answer to David Manugian at [dmanugian@yahoo.com](mailto:dmanugian@yahoo.com). *BSCESNews* also welcomes input from members on other hidden infrastructure in our communities.

## Younger Members Map Out Their Futures

by Deborah M. Katzman, PE, LEED AP BD+C  
Nitsch Engineering

A Certified Professional Coach and fellow engineer, Anthony J. Fasano, PE, CPESC, CPSWQ, LEED AP, approached the BSCES Younger Member Group (YMG) and offered to speak with them about career development in the engineering field. Mr. Fasano feels that many younger engineers do not receive enough career development support at the beginning of their careers and is working to provide that support through his presentation. On Thursday, June 24, the YMG listened to Mr. Fasano and received helpful information, while helping Mr. Fasano continue his goal of reaching as many young engineers as possible with his message.

His talk highlighted six major points that are keys to professional success: setting career goals, obtaining credentials, improving networking skills, communication/responsiveness, increased organization, and improved leadership/delegation. For each of his points, Mr. Fasano provided examples from his and others experience on how to develop these skills, as well as suggested outside resources to find more information on each point. His presentation was well organized, interesting, thought provoking, and stressed the fact that young engineers must take the initiative to further their careers.

After his presentation, the attendees and Mr. Fasano had a spirited discussion about how to continue creating your own future. The presentation was a welcomed wake-up call for many of the Younger Members who were feeling stale in their current positions.

Mr. Fasano is also a soon-to-be published author, the President of the Rockland, New York chapter of the National Society of Civil Engineers, and active in ASCE. Check out Mr. Fasano's blog and company details at [www.powerfulpurposeblog.com](http://www.powerfulpurposeblog.com) which he established to provide engineers with free career advancement tips.

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## BSCES Legislative Fellow Report

by William F. Lyons Jr., PE, Esq., President, Fort Hill Infrastructure Services, BSCES Legislative Fellow

As my term as the BSCES Legislative Fellow draws to a close, it is a good time to reflect on the legislative session and the accomplishments of the Joint Committee on Transportation. It has been a very productive session from a transportation policy point of view. Under the leadership of the committee chairman, Representative Joe Wagner, the legislature adopted two very significant new statutes. These accomplishments include the transportation reform legislation and the distracted driver legislation.

Transportation reform was a major centerpiece of the 2009–2010 legislative session. A priority of the Governor as well as the legislature, this legislation aimed to streamline the number of transportation related agencies and consolidate them all under the leadership of a single Secretary and Chief Executive Officer. Our current Secretary/CEO, Jeffrey Mullan, has quite ably led this consolidated agency with his new mandate.

In addition to consolidating all of the transportation agencies under one Secretary, the legislation is intended to create a central focal point for transportation policy in the Commonwealth. By consolidating such functions as planning, staffing, and policy development for all transportation modes under the Secretary, the legislation was intended to result in a more consistent and professional policy agenda for our transportation system across all modes. To date, most would agree that the legislation has made significant improvements in the public policy arena.

A further objective of the transportation reform legislation was to improve cost efficiency. The legislative intent was to reduce staff and functional redundancies throughout the transportation agencies. Until all of the reforms are fully implemented and several budget cycles have been completed, it will be difficult to determine how effective this aspect of reform has been.

The second major accomplishment of the 2009–2010 legislative session was the adoption of distracted driving legislation. While many feel that the legislation adopted did not go far enough, the fact that some legislation was adopted is encouraging. At a minimum, the users of our transportation network, including

drivers, passengers, bicyclists, and pedestrians, will be safer as a result of the distracted driver legislation.

Following a national trend, Massachusetts adopted legislation prohibiting texting while driving. In addition, the legislation prohibits the use of mobile phones by junior operators, whether hands free or not. A significant component of the legislation prevents the use of mobile phones for calls, texting, or any other purpose by operators of public transportation, school buses, trains, ferries, or passenger buses—except in the performance of official duties as specified by the operating agency.

Another major component of the distracted driver legislation requires aging drivers to get eyesight screening before having a license renewal at age 75. The legislation also makes provisions for medical and law enforcement professionals reporting aging drivers who they suspect are no longer capable of driving. As long as the report is based on observations in good faith, the legislation shields these professionals from liability if they make a report to the registrar of a driver they suspect does not have the capacity to operate a motor vehicle.

While there were many other bills considered by the Joint Committee on Transportation and the legislature as a whole this legislative session, these two accomplishments stand out as major pieces of legislation. Despite an ending of the legislative session focused on controversy over gambling bills, the 2009–2010 legislation should be remembered for these major legislative policy successes. Ultimately, these two significant legislative victories will make the Commonwealth of Massachusetts a better place.

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*William F. Lyons Jr., P.E. Esq. recently completed his tenure as the BSCES Legislative Fellow. Bill is the President of Fort Hill Infrastructure Services, LLC and a practicing attorney. His work as an engineer, planner, and attorney focuses on transportation and land use matters.*

*BSCES is currently soliciting application for the 2011–2012 BSCES Legislative Fellowship, which has an 18 month term of service that begins in early February 2011. More information on this unique opportunity is available at [www.bsces.org/committees/Legislative%20Fellow](http://www.bsces.org/committees/Legislative%20Fellow).*

## BSCES Seeks Legislative Fellow

By Richard F. Keenan  
BSCES Executive Director

BSCES is looking for a member to become our 2011–2012 Legislative Fellow in the Massachusetts Legislature. The BSCES Legislative Fellows Program provides an opportunity for a BSCES member to work for 16–17 months on the staff of a Massachusetts legislative committee. It is possible to serve in this role on a part-time basis, while doing your regular job, depending on certain restrictions. The application deadline is October 31, 2010 for the Fellowship year beginning in early February 2011 and ending on July 31, 2012, the probable end of the legislature's formal session in 2012.

A BSCES Legislative Fellow participates directly in the lawmaking process and learns how the state government operates. The Massachusetts Legislature benefits from the Fellow's engineering expertise. Plus, at the end of the fellowship, the civil engineering community has an engineer with in-depth knowledge of the legislature's decision-making process.

For more information, visit the BSCES Legislative Fellows page on the BSCES website at [www.bsces.org/committees/Legislative%20Fellow](http://www.bsces.org/committees/Legislative%20Fellow) or contact me at 617/305-4110 or at [rkeenan@engineers.org](mailto:rkeenan@engineers.org).

This BSCES program is modeled on the ASCE Congressional Fellows Program, which places a member for one year on the staff of a Congressional Committee, US Senator or member of the US House of Representatives; contact ASCE directly for more information on the Congressional program.

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, contact Nicole Downey at [ndowney@engineers.org](mailto:ndowney@engineers.org).

## 162nd BSCES Annual Awards Dinner

Thursday, September 16, 2010

Boston Marriott Cambridge, Two Cambridge Center, 50 Broadway, Cambridge

5:30 PM Registration and Reception

6:30 PM Dinner; 7:30 PM Program

**Keynote Address: Boston Convention & Exhibition Center's Expansion Plans**

James Rooney, Executive Director

Massachusetts Convention Center Authority

Please join us for an evening celebrating BSCES and the engineering profession. BSCES will recognize new leaders, present annual awards, and honor new BSCES and ASCE Life Members, as well as honor our newest Honorary Members, Frederick P. Salvucci, MIT and Domenic T. Bua, TranSystems Corporation.

Register for this event and pay by credit card online at or complete and return the event flyer/registration form included at the end of this month's newsletter.

## PLAN TO ATTEND

### PIANC USA 2010 Annual Meeting

WEDNESDAY, SEPTEMBER 22, 2010

8:30 AM to 5:30 PM

Intercontinental Boston Waterfront

Please plan to attend the PIANC USA 2010 Annual Meeting. The organizing committee is busy organizing sessions and presentations on topics such as Innovations in Navigation Lock Design; Performance Indicators for Inland Waterways Transport; Sustainable Waterways Within the Context of Navigation and Flood Management; Ecological Engineering in Navigation — Fluvial Geomorphological Restoration on the Upper Mississippi; Educating the Next Generation of Navigation Professionals; Fluid Mud—Identifying the Bottom; and more!

The PIANC USA meeting is free and open to PIANC members and others interested in attending. For more information visit [www.pianc.us/conann2010.cfm](http://www.pianc.us/conann2010.cfm)

## Construction and Structural Groups Event

Thursday, September 23, 2010

Charles Riverboat Company Pier  
Cambridgeside Galleria Mall, Cambridge

5:15 PM Boarding; 5:30 PM Departure,

Bagged Meal, Presentation, Tour

7:15 PM Returning to Dock

**Boat Tour of the Charles River to Review the MassDOT/DCR Bridge Program**

Mike O'Dowd, MassDOT

Ted Long, Hardesty & Hanover (H&H)

Jerry Mackenzie, STV

The Massachusetts Department of Transportation and the Massachusetts Department of Conservation and Recreation are undertaking a major Bridge Program which represents a monumental and historic investment in Massachusetts bridges. The nearly \$3 billion in funding will be accelerated to improve the condition of bridges in every region of the Commonwealth. This boat tour will visit three Charles River bridges that are being repaired as part of the Accelerated Bridge Program, the Longfellow Bridge, the Craigie Drawbridge and the Boston University Bridge.

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

## 2010 Bertram Berger Seminar

Sponsored by the BSCES Transportation Group

Thursday, September 30, 2010

Anthony's Pier 4 Restaurant

140 Northern Avenue, Boston

8:00 AM Registration; 8:30 AM Panels

12:00 PM Social; 12:30 PM Luncheon, Bert

Berger Tribute, Keynote Address, and Awards

**Back to the Future — Making Our Rail System Work Effectively in Massachusetts and Beyond**

The 2010 Bertram Berger Seminar features two ninety-minute panel discussions. The first entitled *Key Issues — Technical Solution*, is moderated by Dr. John Collura, Transportation Program Director, UMass Amherst, and features Jamey Teslar, MassDOT; Dan Hodge, HDR; and Maurice O'Connell, CSX Corporation.

The second entitled *Policy and Planning*, is moderated by George Gefrich, Vickerman & Associates, and features Chris Steele, CWS; Joe Bryan, Halcrow; Todd Brauer, Whitehouse Group, Keystone (PA); and Matthew Coogan, New England Transportation Institute.

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

## BSCES Younger Member Group Networking Event

Thursday, October 7, 2010

Langone Park Bocce Courts, North End, Boston

5:00 PM Check-in; 5:30 PM Tournament

**Bocce Tournament**

The Boston Society of Civil Engineers Section Younger Members Group invites you to join them for a fun evening of bocce and networking. You will have a great time and may even win a prize.

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

*continued on page 9*

## REGISTER TODAY

**AISC and SFNE Invite you to a  
Breakfast Presentation  
in Boston**

FRIDAY, SEPTEMBER 24, 2010

Radisson Hotel

200 Stuart Street, Boston

7:30 to 10:00 AM

The American Institute of Steel Construction (AISC) along with Steel Fabricators of New England (SFNE) invites you to a special SteelDay breakfast presentation and networking event in Boston. This event is free of charge.

The morning will begin with a full breakfast followed by the presentation, *Building an Award Winning Structure*. There will be plenty of time for questions, discussions and networking.

This event is offered in collaboration with BSCES. For more information, including how to register, visit [www.aisc.org/WorkArea/showcontent.aspx?id=24808](http://www.aisc.org/WorkArea/showcontent.aspx?id=24808)

**REGISTRATION OPEN**

**Storm Water—  
Impaired Waters Training**

Co-sponsored by MassDOT  
ACEC/MA and BSCES

**MONDAY, SEPTEMBER 27, 2010  
10:00 AM to 12:00 PM**

**MassDOT, 10 Park Plaza  
2nd Floor Conference Rooms 2 & 3**

Beginning in October 2010, all MassDOT projects will need to ensure storm water compliance. This training will provide information on identifying impaired water bodies as well as guidance for determining the most appropriate storm water BMPs. Topics also covered will include DEP's 303(d) list of Impaired Waters and a new Water Quality Data Form to be used during the design process.

There is no charge to attend this repeat of the September 1st workshop, but you must register in advance. Space is limited to the first 100 people that sign up.

To attend this training you must register by September 20, 2010 at [www.surveymonkey.com/s/S7776RZ](http://www.surveymonkey.com/s/S7776RZ)

**13th Arthur Casagrande  
Memorial Lecture**

*Sponsored by the BSCES Geo-Institute*

**Wednesday, October 13, 2010**

DoubleTree Guest Suites Hotel  
400 Soldiers Field Road, Boston

*5:30 PM Reception; 6:30 PM Dinner*

*7:30 PM Welcome & Leo Casagrande*

*Scholarship Presentation; 7:45 PM Lecture*

**Evaluation of Earthquake Ground Motions  
at Soft Soil Sites**

*Izzat M. Idriss, PhD, PE*

*Professor Emeritus, Civil & Environmental  
Engineering, University of California, Davis*

The recently completed Next Generation Attenuation (NGA) project covered a wide range of local site conditions, but explicitly excluded "Soft Soil" sites, which are defined as Site Category E in NEHRP's Provisions. One reason for excluding these sites from the NGA project was the sparsity of recorded earthquake ground motions data at such sites. Dr. Idriss will examine the characteristics of the earthquake ground motions recorded at these soft soil sites, especially at sites with multiple recordings. He will also evaluate the ability of

available analytical procedures in capturing the essence of these characteristics. Lastly he will provide guidelines for estimating these characteristics during future earthquakes.

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

**Waterways Group Event**

**Thursday, October 21, 2010**

The Chateau, 404 Providence Highway  
Route 1, Norwood

*5:45 PM Social/Registration; 6:30 PM Dinner  
7:00 PM Presentation*

**Time of Year Restrictions**

*Dr. Kathryn Ford*

*Massachusetts Division of Marine Fisheries*

Marine Fisheries works to identify, manage, protect and restore vulnerable habitat areas. Because some of the managed marine fisheries resources are vulnerable to coastal alteration projects Marine Fisheries personnel provide technical comment to regulatory agencies regarding means to avoid, minimize, and/or mitigate impacts to marine fisheries resources. This presentation will provide an insight into the draft report, dated January 2010, focused on describing time periods when various resources might be more vulnerable to anthropogenic activities, defining specific seasonal or time-of-year (TOY) restrictions that Marine Fisheries recommends be implemented to minimize risk to those resources, and documenting the life history data that is used to define the TOY restrictions.

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

**Structural Group Event**

**Thursday, October 28, 2010**

Radisson Hotel, 200 Stuart Street, Boston

*5:45 PM Registration; 6:30 PM Dinner*

*7:00 PM Presentation*

**Structural Health Monitoring for Bridges**

*Brian Brenner, PE, Vice President*

*Fay Spofford & Thorndike*

*Masoud Sanayei, PhD, Professor*

*Tufts University*

*Erin Bell, PhD, PE, Associate Professor*

*University of New Hampshire*

This presentation describes instrumentation and modeling of a 3-span composite concrete steel girder bridge in Barre, MA. The bridge was instrumented and modeled as part of a National Science Foundation Partnerships for Innovation Project, "Whatever Happened to

Long Term Bridge Design." The overall goal of the project is to explore approaches to leverage rapidly developing sensing and modeling technologies to better address long term bridge maintenance goals, as a part of the initial design phase. This can be achieved by preparing a "baseline" analytical model of a bridge that is maintained throughout the life the structure. The baseline model is calibrated to data collected by the bridge instrumentation as part of a structural health monitoring system that supplements manual bridge inspection.

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

**ASCE FALL/WINTER  
SEMINAR SCHEDULE**

ASCE is pleased to announce the following seminars scheduled in Boston from October 2010 through March 2011:

**OCTOBER 28–29, 2010**

Sustainable Land Development—  
Ensuring Growth in a Green Economy  
(Construction/Development)

**NOVEMBER 4–5, 2010**

Testifying and Forensic Report Writing  
Skills for Civil Engineers  
(Management & Leadership)

**NOVEMBER 18–19, 2010**

Stormwater BMPs That Work:  
Effective Analysis, Design and Maintenance  
(Environmental)

**March 17–18, 2011**

Deep Foundations:  
Design, Construction and Quality Control  
(Geotechnical)

**March 24–25, 2011**

Seismic Design and Performance  
of Building Structures  
(Structural)

These in-depth, practice-oriented programs are produced by ASCE's Continuing Education Department.

**Log On to the TEC Website!**



[www.engineers.org](http://www.engineers.org)

- Employment
- Free resume search
- Event calendar
- Online registration

### Jacobs Associates

Jacobs Associates has 55 years of experience as a consulting engineering firm and we are recognized as worldwide industry leaders in tunnel engineering. We provide practical and innovative design and construction phase services for challenging underground projects in transportation, water, wastewater sectors for owners, engineers, contractors, and equipment manufacturers.

Our Boston office has immediate openings for experienced **design and construction professionals** from Staff to Senior level in the following disciplines; **Estimating and Scheduling, Geotechnical Engineering, Structural Engineering,** and **Tunnel Design Engineering.**

Jacobs Associates provides a competitive compensation and benefits package, professional

development and our in-house training program and the opportunity to work on projects that are both technically challenging and rewarding. Learn more about the Jacobs Associates and the available opportunities at [www.jacobssf.com](http://www.jacobssf.com) and come join our team. Please email your resume to [hr@jacobssf.com](mailto:hr@jacobssf.com). Jacobs Associates is an equal opportunity employer.

### Baker

Michael Baker Jr., Inc. (Baker) is recruiting for **Structural Engineers** with Bridge Inspection or Load Rating experience to work on projects in CT, MA and RI. Requirements include a BS Civil Engineering, a minimum of 5 years of relevant experience with CDOT, MassDOT or RIDOT; EIT required; CE positions require PE. Bridge Inspection positions require NBI standards experience; Load Rater positions prefer experience with AASHTO, Virtis, and Brass-Culvert/Girder. For more information on these positions, please visit the Career section of our website at [www.mbakercorp.com](http://www.mbakercorp.com). Baker is an EEO/AAP (M/F/V/H) e-Verify Employer

### Field's Point WWTF

*continued from page 3*

The Commission also sought to upgrade aging equipment, buildings and systems, and make operations more efficient and install back-up units to lessen the impact of a system failure at the facility. Kleinfelder/S E A assisted the Commission with upgrading a number of unit processes, including grit classifiers and primary scum dewatering equipment; both of which will have the current capacity doubled.

As part of the project, the Commission decided to replace its old Operations Building through design and construction of a new Administration Building where operations personnel will work from an energy-efficient, LEED certified facility that will be 30% more efficient than the previous building. This facility is pending a LEED Silver rating and will serve as an education center for public outreach area where visitors can learn about how the Commission is protecting the waters of the Narragansett Bay.

The project, which is on a seven-year timeline, began construction last fall and will be complete in early 2014. When complete, the

project will help preserve the natural majestic environment of Narragansett Bay by improving water quality through innovative, biological wastewater treatment.

### Infrastructure Group

*continued from page 5*

As one of our missions is to promote infrastructure maintenances and repairs, our group focuses on setting up training classes that will directly improve bridge inspectors' technical skills and knowledge. To date, the Infrastructure Group has been offering the two-week Safety Inspection of In-Service Bridges training course, the multi-day Bridge Inspection Refresher Training, Fracture Critical Inspection Techniques for Steel Bridges training, and Inspection and Maintenance of Ancillary Highway Structures course. These training classes have been coordinated by the Infrastructure Group and the National Highway Institute (NHI) in partnership with the MassDOT Highway and Transit Divisions. However, group members are constantly discussing new ideas for trainings and seminars to suit some of the needs of other disciplines of our field.

The BSCES Infrastructure Group is looking for more members who want to be involved and whose interests coincide well with the group's activities and present focus. The Infrastructure Group meets at 5:00 PM on the second Tuesday of each month at The Engineering Center in Boston. For more details and information about the group's activities and events, please feel free to contact me via email at [mjose@gpinet.com](mailto:mjose@gpinet.com) or call me at 781/632-9273. All are welcome! And feel free to join in an exciting and vibrant Infrastructure Group.

### CALL FOR PAPERS

*Civil Engineering Practice*, the Journal of BSCES welcomes papers for review and publication. We are looking for papers on topics in all areas of civil engineering that while comprehensive in scope, remain readily understandable to the non-specialist. For general guidelines for submittal of papers, visit [www.cepractice.org/cepauth](http://www.cepractice.org/cepauth) on the web. You may also submit your contribution to James Lambrechts at [lambrechtsj@wit.edu](mailto:lambrechtsj@wit.edu).



# 162nd BSCES Annual Awards Dinner

Thursday, September 16, 2010  
Boston Marriott Cambridge  
Two Cambridge Center, 50 Broadway  
Cambridge, MA 02142

*Keynote Speaker:*  
**James Rooney**, Executive Director  
Massachusetts Convention Center Authority



**You are Cordially Invited to Attend the  
162nd BSCES Annual Awards Dinner, Thursday, September 16, 2010**

### **Keynote Address: Boston Convention & Exhibition Center's Expansion Plans**

*James Rooney, Executive Director  
Massachusetts Convention Center Authority*

Jim Rooney is executive director of the Massachusetts Convention Center Authority, which oversees the Boston Convention & Exhibition Center, the John B. Hynes Veterans Memorial Convention Center in Boston's Back Bay, the 1,350-space Boston Common Parking Garage, and the MassMutual Center in Springfield. As executive director, Rooney oversees a \$58 million annual operating budget and about 210 full-time employees.

Rooney was named executive director in 2003 while also overseeing the construction of the Boston Convention & Exhibition Center. Since then, MCCA bookings have exceeded projections, with conventions at Boston facilities now generating more than \$500 million in annual economic impact for the Commonwealth and Greater Boston. Between 2010 and 2012, Rooney will oversee the three busiest years for convention in Massachusetts history, with an estimated \$1.25 billion in economic impact expected.

Please join us for an evening celebrating BSCES and the engineering profession. BSCES will recognize new leaders, present annual awards, and honor new BSCES and ASCE Life Members, as well as honor our newest Honorary Members, Frederick P. Salvucci, MIT and Domenic T. Bua, TranSystems Corporation.

**Registration Deadline extended until  
2:00 PM on Monday, September 13, 2010**

Register and pay by credit card online at:  
[http://www.engineers.org/index.cfm?pk=custom&ac=viewEventDetails&eventId=BS\\_AWARDS\\_9.16.10](http://www.engineers.org/index.cfm?pk=custom&ac=viewEventDetails&eventId=BS_AWARDS_9.16.10) or send Registration Form and payment to Rich Keenan at:

BSCES  
The Engineering Center  
One Walnut Street  
Boston, MA 02108-3616  
Fax: 617/227-6783  
Email: rkeenan@engineers.org

No-shows and cancellations received after Friday, September 10 will be billed. For questions please call 617/305-4113. No phone registrations.

**Boston Marriott Cambridge  
Two Cambridge Center, 50 Broadway  
Cambridge, MA 02142**  
5:30 PM Registration and Reception  
6:30 PM Dinner  
7:30 PM Program

Return with payment to BSCES, The Engineering Center, One Walnut Street, Boston, MA 02108-3616; 617/227-6783 (fax) or rkeenan@engineers.org

162nd BSCES Annual Awards Dinner

Please register \_\_\_\_\_ people

- \$90 BSCES Member
- \$100 Non-Member
- \$55 Public-Sector Employees
- \$55 ASCE Life Members/BSCES Life Members
- \$55 Students/Seniors (65+)
- \$720 Table of 8

Total \$ \_\_\_\_\_

Payment must be made in advance by American Express, MasterCard, Visa or check payable to BSCES.

Name on Card: \_\_\_\_\_

Billing Address: \_\_\_\_\_

Name(s): \_\_\_\_\_

Firm/Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Tel: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

BSCES members have been assigned a username and password which they must use to register online at the member rate. If you do not know your username and/or password, contact Nicole Downey at 617/227-5551

American Express    MasterCard    Visa

Card#: \_\_\_\_\_ Exp. Date: \_\_\_\_\_

Signature \_\_\_\_\_

**Registration Deadline is 2:00 PM on Monday, September 13.  
No-shows and cancellations received after September 13 will be billed.**

Thursday, September 23, 2010

## **Boat Tour of the Charles River to Review the MassDOT/DCR Bridge Program**

Mike O'Dowd, MassDOT  
Ted Long, Hardesty & Hanover (H&H)  
Jerry Mackenzie, STV

**Charles River Boat Company Pier**  
Located at Canal Park outside the food court of the Cambridgeside Galleria Mall

**5:15 PM Boarding; 5:30 PM Departure Bagged Meal, Presentation & Tour;  
7:15 PM Returning to Dock**

**\$55 Members, \$65 Non-Members**  
**\$50 Public Sector Members, \$60 Public Sector Non-Members**  
**\$30 Student Members and Senior Members (65+)**

The Massachusetts Department of Transportation and the Massachusetts Department of Conservation and Recreation are undertaking a major Bridge Program which represents a monumental and historic investment in Massachusetts bridges. The nearly \$3 billion in funding will be accelerated to improve the condition of bridges in every region of the Commonwealth. This program will greatly reduce the number of structurally deficient bridges in the state system, while creating thousands of construction jobs on bridge projects. The first of three bridges this boat tour will review is the iconic **Longfellow Bridge across the Charles River** between Boston and Cambridge. The main goals of this project are to repair deteriorated parts of the structure and to improve its ramped approaches. All repairs and modifications will be consistent with the historic character of the bridge. The **Charles River Dam Road between Leverett Circle, Boston and O'Brien Highway Cambridge (the Craigie Drawbridge)** and the **Boston University Bridge** reconstruction project will also be toured.

### **Registration Deadline: Friday, September 17, 2010**

**Information/Registration:** Register to attend this event and pay by credit card online at [www.bsces.org](http://www.bsces.org). Click on **Events** then **BSCES Events**; click on the link for a complete listing of BSCES Events; select **BSCES** from the drop-down list below Association and click on **search**; locate and click on the **event name** and detailed event information will appear. 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, contact Nicole Downey at [ndowney@engineers.org](mailto:ndowney@engineers.org). You can also register by contacting Eoin Walsh at 617/590-0806 or at [ewalsh@tcco.com](mailto:ewalsh@tcco.com). Cancellations received after September 17 and no-shows will be billed.

**Thursday, September 30, 2010**

**2010 Bertram Berger Seminar**  
*Back to the Future – Making Our Rail System  
Work Effectively in Massachusetts and Beyond*

**Preliminary Program**  
(Keynote speaker to be announced)

Panel One 8:30 AM – 10:00 AM

**Key Issues – Technical Solutions**

- Moderator – Dr. John Collura, Transportation Program Director, UMass, Amherst
- Jamey Teslar, MassDOT
- Dan Hodge, HDR, Statewide Freight/Rail Plan
- Maurice O’Connell, CSX Corp.

Panel Two 10:15 AM – 12:00 PM

**Policy and Planning**

- Moderator – George Gefrich, Vickerman & Associates
- Chris Steele, CWS, Developing with Rail in Mind
- Joe Bryan, Halcrow, Freight Movement Trends
- Todd Brauer, Whitehouse Group, Keystone (PA) High Speed Rail Program
- Matthew Coogan, New England Transportation Institute

Anthony’s Pier 4 Restaurant  
140 Northern Avenue, Boston, MA  
8:00 AM Registration; 8:30 AM Panels; 12:00 AM Social  
12:30 PM Luncheon, Bert Berger Tribute, Keynote Address, and Awards  
\$65 Members, \$75 Non-Members  
\$40 Public Sector Members, \$65 Public Sector Non-Members  
\$40 Senior Members (65+), \$30 Students (limited to 25)

**Registration Deadline: Tuesday, September 28, 2010**

**Information/Registration:** Register to attend this event and pay by credit card online at [www.bsces.org](http://www.bsces.org). Click on **Events** then **BSCES Events**; click on the link for a complete listing of BSCES Events; select **BSCES** from the drop-down list below Association and click on **search**; locate and click on the **event name** and detailed event information will appear. 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, contact Nicole Downey at [ndowney@engineers.org](mailto:ndowney@engineers.org). You can also register by contacting Tamorra King (McMahon Associates) at 617/556-0020, extension 2000. Cancellations received after September 28 and no-shows will be billed.

# Please Join Us for a Bocce Tournament

The Boston Society of Civil Engineers Section Younger Members Group invites you to join us for a fun evening of bocce and networking.

**Date: Thursday, October 7, 2010**

**Time: 5:00-5:30 (Check-in)**

**Location: Langone Park**

**Bocce Courts**

**North End, Boston**

**Registration Fee :**

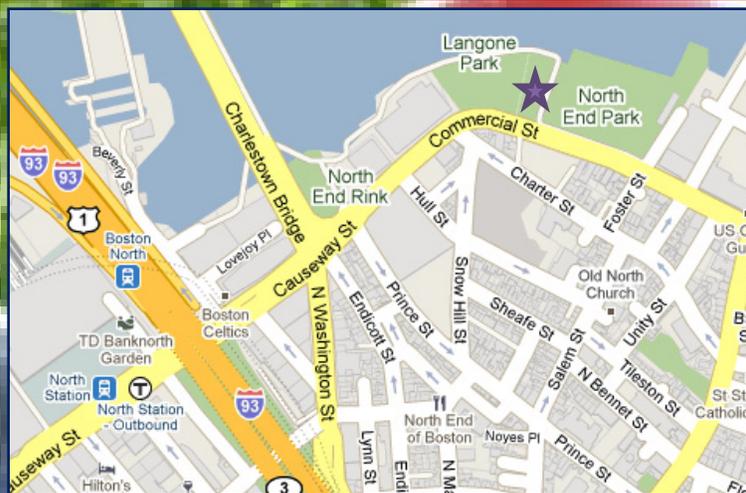
**\$10 for students**

**\$20 for professionals**

**Registration Deadline:**

**Tuesday, October 5, 2010**

**GRAND PRIZE: RED SOX TICKETS  
2<sup>ND</sup> PLACE PRIZE & DOOR PRIZES**



## **Directions:**

Arrive at North Station (MBTA Orange & Green Lines) . Walk down Causeway St. towards the Charlestown Bridge. Continue onto Commercial St. The Langone Park Bocce Courts will be located on the left.

## **Information/Registration:**

Registration fee includes pizza and tournament entry.

Register to attend this event by contacting Ryan St. Martin OR paying by credit card online at [www.bsces.org](http://www.bsces.org). Click on Events then BSCES Events; click on the link for a complete listing of BSCES Events; select BSCES from the drop-down list below Association and click on search; locate and click on the event name and detailed event information will appear. 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, contact Nicole Downey at [ndowney@engineers.org](mailto:ndowney@engineers.org). You can also register by contacting Ryan St. Martin at [bscesYMGevent@gmail.com](mailto:bscesYMGevent@gmail.com) or 401-497-3572. Cancellations received after Tuesday, October 5, 2010 and no-shows will be billed.

**Arthur Casagrande**  
(1902 - 1981)



Arthur Casagrande was born on August 28, 1902 in Austria and came to the United States in 1926. He worked at the Bureau of Public Roads and as a Research Assistant under Karl Terzaghi at MIT. He made or contributed to making the fundamental developments of Soil Mechanics and later became a Professor of Soil Mechanics. He also served the profession as the President of the ISSMFE in 1960's.

Prof. Casagrande started the Soil Mechanics program at Harvard University in 1932. Many of his students were inspired by Casagrande and entered the field of Soil Mechanics; these men later became the creators of the Geotechnical Engineering field as we know it today. Being a pioneer, Prof. Casagrande worked on the fundamental problems of Soil Mechanics, such as soil classification, seepage through earth and shear strength.

Casagrande's contributions to the profession were recognized by giving him the honors of *Rankine Lecturer* by the Institution of Civil Engineers (UK), and *Terzaghi Lecturer* by American Society of Civil Engineers. He was also the first recipient of the Terzaghi Award from ASCE. He authored more than 100 research papers and reports on a great many subjects, from frost heave to dynamic loading and everything in between.



2010 Arthur Casagrande Memorial Lecture

\_\_\_\_\_  
Last Name                      First Name                      Initial

\_\_\_\_\_  
Company / School

\_\_\_\_\_  
Mailing Address

\_\_\_\_\_  
City                                      State                                      Zip Code

\_\_\_\_\_  
E-Mail

\_\_\_\_\_  
Phone Number (Day)

\_\_\_\_\_  
Fax Number

- Are you a Student?                                      (circle one)    Y    N
- Are you a Senior (65+)?                                      (circle one)    Y    N
- Are you a member of BSCES?                                      (circle one)    Y    N
- Are you a Public Sector Employee?                                      (circle one)    Y    N

Amount enclosed \$ \_\_\_\_\_. *Registration will not be processed without payment.*

Check box for vegetarian meal.

***BSCES GEO-INSTITUTE***

is proud to present  
the

**13th ARTHUR  
CASAGRANDE**

**MEMORIAL LECTURE**

featuring

**Izzat M. Idriss, Ph.D., P.E.**

Professor Emeritus

Civil & Environmental Engineering

University of California, Davis

on

**Wednesday, October 13, 2010**

at

**DoubleTree Guest Suites Hotel**

**400 Soldiers Field Road**

**Boston, Massachusetts**



of the American Society of Civil Engineers

BSCES GEO-INSTITUTE  
13th ARTHUR CASAGRANDE MEMORIAL  
LECTURE

Evaluation of Earthquake Ground Motions at  
Soft Soil Sites

By  
Izzat M. Idriss, Ph.D., P.E.



Professor Emeritus,  
Civil & Environmental Engineering  
University of California, Davis

The recently completed Next Generation Attenuation (NGA) project covered a wide range of local site conditions, but explicitly excluded "Soft Soil" sites, which are defined as Site Category E in NEHRP's Provisions. One reason for excluding these sites from the NGA project was the sparsity of recorded earthquake ground motions data at such sites (approximately 55 recordings at soft soil sites compared, for example, with over 900 recordings at stiff soil/soft rock sites). Therefore, it is necessary to augment the recorded data with analytically generated motions at these soft soil sites.

One objective of the lecture is to examine the characteristics of the earthquake ground motions recorded at these soft soil sites, especially at sites with multiple recordings, such as those in Taiwan that recorded the main 1999 Chi-Chi shock and 5 of the stronger aftershocks. Another objective is to evaluate the ability of available analytical procedures in capturing the essence of these characteristics. The final objective is to provide guidelines for estimating these characteristics during future earthquakes.

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Established in 1848, BSCES is the oldest engineering society in the U.S. and currently supports over 2,900 members throughout Massachusetts. BSCES formally became a Section of ASCE in 1974 after the merger with ASCE's MA Section. In 1983, the Arthur Casagrande Fund was established to support a lecture given every other year by an eminent engineer with longstanding achievement in practice, teaching and/or research in geotechnical engineering.

Previous Arthur Casagrande Memorial Lecture Speakers

1983 Leo Casagrande	1985 Alfred Hendron
1987 Ralph Peck	1991 James Gould
1993 James Mitchell	1996 Fred Kulhawy
1998 Michael Duncan	2000 Charles Ladd
2002 Harry Poulos	2004 Lymon C. Reese
2006 John Schmertmann	2008 T. William Lambe

The BSCES Geo-Institute is pleased to present Izzat M. Idriss, Ph.D., P.E. as the 13<sup>th</sup> Arthur Casagrande Memorial Lecturer for 2010.

Professor Izzat M. Idriss is Professor Emeritus in the Civil & Environmental Engineering Department at the University of California, Davis. He received his Ph.D. from the University of California, Berkeley in 1966.

Dr. Idriss is a Member of the U.S. National Academy of Engineers. He has received many notable awards including ASCE's H. Bolton Seed Memorial Prize, the Norman Medal, the Walter L. Huber Civil Engineering Research Prize, the J. James Croes Medal, and the Thomas A. Middlebrooks Award. He also serves on numerous advisory boards and is a Diplomat of Geotechnical Engineering (D.GE).

Dr. Idriss is one of the pioneers in the Geotechnical Earthquake Engineering field, and has done fundamental and applied research related to geotechnical earthquake engineering; soil mechanics and foundation engineering; earthfill and rockfill dam engineering; probabilistic applications to geotechnical problems; and numerical modeling. He joined the department in 1989 as Director of the Center for Geotechnical Modeling. Prior to that, he was a principal at Woodward-Clyde Consultants.

LOCATION & SCHEDULE

DoubleTree Guest Suites Hotel, Longfellow Ballroom  
400 Soldiers Field Road  
Boston, Massachusetts 02134

Wednesday, October 13, 2010

5:30 to 6:30 PM	Reception with hors d'oeuvres and cocktails
6:30 to 7:30 PM	Dinner
7:30 to 7:45 PM	Welcome & Leo Casagrande Scholarship Presentation
7:45 to 9:30 PM	2010 Arthur Casagrande Memorial Lecture

FEES

BSCES Member	\$ 90.00
Non-Member	\$ 110.00
Public Sector Members	\$ 70.00
Public Sector Non-Members	\$ 100.00
Seniors (65+)	\$ 55.00
Students	\$ 40.00

(No shows will be billed at the Non-Member rate)

Parking (\$5) is available at the DoubleTree Hotel. Directions can be obtained from the interactive map at [http://doubletree1.hilton.com/en\\_US/dt/hotel/BOSSBDT-Doubletree-Guest-Suites-Boston-Massachusetts/directions.do#parking](http://doubletree1.hilton.com/en_US/dt/hotel/BOSSBDT-Doubletree-Guest-Suites-Boston-Massachusetts/directions.do#parking)

REGISTRATION DEADLINE

Wednesday, October 6, 2010

**\*\*When registering please indicate whether you are a BSCES Member, Non-Member, Student or Senior. \*\***

*To register by mail:* Detach the included form and mail with check made payable to BSCES to:

2010 Arthur Casagrande Memorial Lecture  
c/o Doris Soucy  
GEI Consultants, Inc.  
400 Unicorn Park Drive  
Woburn, MA 01801

*To register by fax or e-mail:* Send your Name, Company Name, Address, Phone and Fax Numbers, and E-Mail Address to Doris Soucy at GEI, fax to 781-721-4073 or e-mail: [doris.soucy@geiconsultants.com](mailto:doris.soucy@geiconsultants.com).

*To register online and pay by credit card:*

Go to [www.engineers.org](http://www.engineers.org) and search for this program under the "Events" tab.

*Registration will be limited to the first 150 registrations that are received.*

*Attendees will be awarded one (1) PDH.*

If you have any questions, contact:

Nabil Hourani  
13<sup>th</sup> Arthur Casagrande Memorial Lecture  
Organizing Committee Chairman  
617-532-2280  
[nhourani@hntb.com](mailto:nhourani@hntb.com)

Thursday October 21, 2010

## Time of Year Restrictions

Dr. Kathryn Ford

Massachusetts Division of Marine Fisheries

**The Chateau, 404 Providence Highway, Route 1, Norwood, MA 02062**  
**5:45 PM Social/Registration; 6:30 PM Dinner; 7:00 PM Presentation**

**\$55 Members, \$65 Non-Members**

**\$45 Public Sector Members, \$55 Public Sector Non-Members**

**\$45 Senior Members (65+), \$55 Senior Non-Members (65+), \$25 Students**

MarineFisheries works to identify, manage, protect and restore vulnerable habitat areas. Because some of the managed marine fisheries resources are vulnerable to coastal alteration projects, such as dredging, pipeline construction, and beach fill, MarineFisheries personnel provide technical comment to regulatory agencies regarding means to avoid, minimize, and/or mitigate impacts to marine fisheries resources. Seasonal or time-of-year restrictions on in-water work (seasons when in-water work should not be conducted to protect critical life stages) can be used to minimize impacts.

This presentation will provide owners, engineers, planners, scientists, consultants and those involved in water based projects an insight into the draft report, dated January 2010, focused on describing time periods when various resources might be more vulnerable to anthropogenic activities, defining specific seasonal or time-of-year (TOY) restrictions that MarineFisheries recommends be implemented to minimize risk to those resources, and documenting the life history data that is used to define the TOY restrictions.

### **Registration Deadline: Tuesday October 19, 2010**

**Information/Registration:** Register to attend this event and pay by credit card online at [www.bsces.org](http://www.bsces.org). Click on **Events** then **BSCES Events**; click on the link for a complete listing of BSCES Events; select **BSCES** from the drop-down list below Association and click on **search**; locate and click on the **event name** and detailed event information will appear. 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, contact Nicole Downey at [ndowney@engineers.org](mailto:ndowney@engineers.org). You can also register by contacting Charlie Roberts, 508/359-8945 or [robertsc@childseng.com](mailto:robertsc@childseng.com). Cancellations received after October 19th and no-shows will be billed.

Thursday, October 28, 2010

## **Structural Health Monitoring for Bridges**

**Brian Brenner, PE**

Vice President, Fay Spofford & Thorndike

**Masoud Sanayei, PhD**

Professor, Tufts University

**Erin Bell, PhD, PE**

Associate Professor, University of New Hampshire

**Radisson Hotel, 200 Stuart Street, Boston, MA**

**5:45 PM Registration; 6:30 PM Dinner; 7:00 PM Presentation**

**\$55 Members, \$65 Non-Members**

**\$45 Public Sector Members, \$55 Public Sector Non-Members**

**\$45 Senior Members (65+), \$55 Senior Non-Members (65+), \$25 Students**

This presentation describes instrumentation and modeling of a 3-span composite concrete steel girder bridge in Barre, Massachusetts. The bridge was instrumented and modeled as part of a National Science Foundation Partnerships for Innovation Project, "Whatever Happened to Long Term Bridge Design". The overall goal of the project is to explore approaches to leverage rapidly developing sensing and modeling technologies to better address long term bridge maintenance goals, as a part of the initial design phase. This can be achieved by preparing a "baseline" analytical model of a bridge that is maintained throughout the life the structure. The baseline model is calibrated to data collected by the bridge instrumentation as part of a structural health monitoring system that supplements manual bridge inspection.

The presentation includes discussion of the instrumentation design, installation and monitoring of the bridge as it was built, details of the baseline finite element model, and some results from two controlled load tests.

### **Registration Deadline: Friday, October 22, 2010**

**Information/Registration:** Register to attend this event and pay by credit card online at [www.bsces.org](http://www.bsces.org). Click on **Events** then **BSCES Events**; click on the link for a complete listing of BSCES Events; select **BSCES** from the drop-down list below Association and click on **search**; locate and click on the **event name** and detailed event information will appear. 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, contact Nicole Downey at [ndowney@engineers.org](mailto:ndowney@engineers.org). You can also register by contacting Steve Taylor at 781/915-0095, or at [stephen.taylor@hatchmott.com](mailto:stephen.taylor@hatchmott.com). Cancellations received after October 22 and no-shows will be billed.