ACEC INSIGHTS

AMERICAN COUNCIL OF ENGINEERING COMPANIES OF MASSACHUSETTS

The Engineering Center • One Walnut Street • Boston, MA 02108 • T: 617/227-5551 • F: 617/227-6783 • www.acecma.org SPRING 2017

ACEC/MA 2017 Engineering Excellence Awards

The American Council of Engineering Companies of Massachusetts (ACEC/MA) announced the recipients of the 2017 Engineering Excellence Awards along with several other awards at the ACEC/MA Engineering Excellence and Awards Gala. Emcees Carol Gladstone, Commissioner Division of Capital Asset Management and Maintenance (DCAMM) and Leo Roy, Commissioner, Department of Conservation and Recreation (DCR) presented the awards on Wednesday, March 15, 2017 in a ceremony at the Royal Sonesta in Cambridge, MA.

"These winning projects exemplify ingenuity and professionalism and represent the breadth of engineering's contribution to our everyday lives," said ACEC/MA President Mark Bartlett, PE. "They are outstanding examples of how engineers connect communities, provide safe and reliable water and energy, and make our buildings safe and efficient. The professional engineers and their colleagues at our member firms are dedicated to working on quality infrastructure, which wouldn't otherwise exist. These outstanding projects are but a few examples of the quality work designed by Massachusetts engineering firms."

Click here to view or purchase photos from the 2017 ACEC/MA Engineering Excellence and Awards Gala

Grand Conceptor

VHB

Route 79/I-195 Interchange Improvements and Repairs and Painting of the Braga Bridge, Fall River, MA

Client: Massachusetts Department of Transportation

Gold Award Winners

GZA GeoEnvironmental, Inc.

Driving Across the Hudson—Foundation Design for the New New York Bridge, South Nyack and Tarrytown, NY

Client: New York State Thruway Authority

continued on page 2

President's Message

Mark Bartlett, 2016–2017 ACEC/MA President

ACEC/MA as a business association, and each of us as individuals, are being re-shaped by powerful economic and political trends that are accelerating the pace of life and business. Additionally, this ever-changing and increasingly polarized political environment provides us with many issues to track as consulting engineers. A key annual objective of our strategic plan has been to prioritize and focus on those activities that offer the most impact and added value to membership.

Competitive Intelligence is fundamentally one of our key offerings. By providing valuable information, in many cases "inside information" (through our monthly programs and committee meetings, and publications such as Insights) we help members to cut through the clutter, and stay in tune with best management practices and industry trends. We also add value by serving as the voice of the engineering profession with respect to political action that will affect our business. The key to our collective success is Engaged Action: involving the intentional, collective behavior of our group. Actions include turning out at the polls, negotiating with policy makers, taking a class, attending an informative program (either in person or via technology), or tweeting en masse, etc. If you begin to consider everyone within ACEC/MA who has a stake in a particular action, suddenly the market expands way beyond membership. But when other issues arise including

continued on page 7

CONTENTS

TOPICS OF INTEREST

IN EVERY ISSUE

Click a link above to quickly find an article.

ACEC/MA Engineering Excellence Awards

continued from page 1

Kleinfelder
Massport Coastal Flooding Resiliency Project, Boston, MA
Client: Massachusetts Port Authority

Tighe & Bond, Inc.
Great Lakes Water Authority Biosolids Drying Facility, Detroit, MI
Client: New England Fertilizer Company

WSP | Parsons Brinckerhoff
National Museum of African American History and Culture, Washington, DC
Client: Smithsonian Institution

VHB
Greenough Boulevard Greenway Expansion, Watertown/Cambridge, MA
Client: The Lawrence and Lilian Solomon Foundation, Department of Conservation and Recreation

Silver Award Winners

AECOM
Mitchell River Wooden Drawbridge Replacement, Chatham, MA
Client: Massachusetts Department of Transportation

CDM Smith, Inc.
New Bedford Hurricane Barrier Access Improvements, New Bedford, MA
Client: City of New Bedford

CDR Maguire, Inc.
Muddy Creek Restoration Bridge Project, Route 28 (Orleans Rd) over Muddy Creek, Chatham/ Harwich MA
Client: Town of Chatham and Town of Harwich

Environmental Partners Group
From the Ocean to the Bay, How Eastham Compressed a Century of Water Systems Development into 5 Years, Eastham, MA
Client: Town of Eastham

GEI Consultants, Inc.
Gay Head Lighthouse Relocation, Aquinnah, MA
Client: Town of Aquinnah

Green International Affiliates, Inc. / Architerra Inc.
Massachusetts Division of Fisheries and Wildlife Headquarters, Westborough, MA
Client: MA Division of Capital Asset Management and Maintenance/Division of Fisheries and Wildlife

Simpson Gumpertz & Heger Inc.
MIT Kresge Auditorium and Chapel, Cambridge, MA
Client: EYP Architecture & Engineering

Tetra Tech, Inc.
Secondary National Roads Development Project, Samar Islands, Philippines
Client: Millennium Challenge Corporation and United States Army Corps of Engineers

Weston & Sampson
Medfield Charles River Gateway—Comprehensive Soil, Sediment, and Groundwater Redemption, Medfield, MA
Client: MA Division of Capital Asset Management and Maintenance

WSP | Parsons Brinckerhoff
Marblehead Pipeline Replacement Project, Marblehead & Salem, MA
Client: South Essex Sewerage District

Bronze Award Winners

Allen & Major Associates, Inc.
Benchmark Senior Living, Woburn, MA
Client: Benchmark Senior Living

Allen & Major Associates, Inc.
Brightview Canton, Canton, MA
Client: Shelter Development, LLC

Allen & Major Associates, Inc.
The Point Project, Littleton, MA
Client: Littleton Commercial Investments

BSC Group, Inc.
Belmont Street & Trapelo Road Transportation Improvement Project, Somerville/Boston, MA
Client: Town of Belmont

CHA
University of Massachusetts Design & CA—Tilson Substation, Amherst MA
Client: University of Massachusetts

City Point Partners LLC
Massachusetts Gaming Commission Advisory Services, Casino Application Evaluations, MA (Statewide)
Client: Massachusetts Gaming Commission

GZA GeoEnvironmental, Inc.
Muddy River Flood Damage Reduction and Environmental Restoration (Phase I), Boston & Brookline MA
Client: US Army Corps of Engineers—New England District

continued on page 3

ACEC/MA Engineering Excellence Awards

continued from page 2

HDR Engineering, Inc.
Government Center Station Improvements, Boston, MA
Client: Massachusetts Bay Transportation Authority

HNTB Corporation
Fitchburg Commuter Rail Involvement Program, Fitchburg to Boston, MA
Client: Massachusetts Bay Transportation Authority

Louis Berger
Route 2 Safety Improvement Project, Bridges Nos C-19-024, C-19-035 at Crosby's Corner, Lincoln and Concord, MA
Client: Massachusetts Department of Transportation

Michael Baker International
Holyoke Depot Square Railroad Station, Holyoke, MA
Client: City of Holyoke

Michael Baker International
Virtual Tunnel Inspection Training, Nationwide (including Worcester& Boston)
Client: National Highway Institute

Pare
University Hall, Boston, MA
Client: University of Massachusetts Boston

Parsons
Beach Road over Lagoon Pond Bridge Replacement, Oak Bluff/Tisbury, MA
Client: Massachusetts Department of Transportation

Rosales + Partners, Inc.
Moody Pedestrian Bridge, Austin, TX
Client: The University of Texas System, Austin, TX

STV
Long Island Bridge Demolition, Boston & Quincy MA
Client: City of Boston

STV
DCR LED Replacement Project, MA (Statewide)
Client: Massachusetts Department of Conservation & Recreation

Celebrating the ACEC/MA 2017 Grand Conceptor Award: Route 79/I-195 Interchange Improvements and Repairs and Painting of the Braga Bridge

Back row from left: David Vivilecchia (ACEC/MA Past-President, VHB); Ed Whatley (VHB); Josh Trearchis (VHB); Brent Richard (VHB); Pete Sorensen (VHB); Pat Tracy-Callahan (VHB); Howard Goldberg (Barletta Heavy Division). Front row, from left: Stefanie Beaver (VHB); Susan Kremer (VHB); Gerald Bernard (MassDOT); Amy Getchell (MassDOT); Tom Jackmin (VHB); Jonathan Lee (VHB); Susan Lee (VHB); Kelsey Munns (VHB) (Photo Credit: Frank Monkewicz Photography)

TranSystems Corporation
Revere Beach Parkway over the MBTA and B&M, Revere, MA
Client: Massachusetts Department of Transportation

VHB
Greenough Boulevard Greenway Expansion, Watertown/Cambridge, MA
Client: The Lawrence and Lilian Solomon Foundation, Department of Conservation and Recreation

Woodard & Curran
Willard's Woods Stream Daylighting and Drainage Restoration, Lexington, MA
Client: Town of Lexington

Small Firm Project Winner

Rosales + Partners
Moody Pedestrian Bridge, Austin, TX
Client: The University of Texas System

In addition to the project awards, ACEC/MA also presented these awards:

ACEC/MA Education Corporation President's Scholarships: Phil Ebben, student at the Massachusetts Institute of Technology.

ACEC/MA Young Professional Award: Colleen Heath, PE, Environmental Engineer at CDM Smith.

Writing Tip

Assure, ensure, or insure? Although these words often get confused and used interchangeably, each is unique with its own mission. Assure is to say something with confidence, dispelling any doubt. Ensure means to do or have what is necessary for success, or to make certain. Insure is to cover with an insurance policy.

Driving toward Driverless

By Jennifer Shelby, CPSM, Proposal & Communications Manager, Architectural Engineers, Inc.

As part of ACEC's on-line business education series, EasyMile's Director of Business Initiatives (formerly Manager of Sustainable Transportation at WSP) Lauren Isaac, spoke about the current and future state of autonomous vehicle technology and policy in her webinar entitled "Driving Towards Driverless: How Governments Should Prepare for Autonomous Vehicles."

In this thorough, multi-faceted, and easy-to-understand overview, Isaac has one main point that she underscores throughout the presentation: Driverless cars are coming soon and it is vitally important for government at all levels to proactively respond.

The question is never "if," but rather, when, how, and who's responsible for the litany of items that touch this topic from a variety of perspectives.

She starts with a general definition of full self-driving automation from the National Highway Traffic Safety Administration (NHTSA), which states vehicles are "designed to perform all safety-critical driving functions and monitor roadway conditions for an entire trip. Such a design anticipates that the driver will provide destination or navigation input, but is not expected to be available for control at any time during the trip."

On a scale from 0–5, with 0 being complete manual operation where humans do everything from depressing a clutch and steering a wheel to rolling up windows and locking doors by hand, and 5 being full automation where humans are not involved at all except for specifying the destination, the U.S. is currently experiencing a surge in cars with partial automation. We've seen it for years with features such as adaptive cruise control, self-parking, and driver-assist.

This, she says, opens up the discussion and practice that enables the industry's ability to rethink how vehicles are designed.

As Isaac notes, autonomous vehicle technology is here, and full automation is coming. How quickly depends on a number of factors, but one of the more aggressive forecasts from Morgan Stanley predicts the U.S. will see complete autonomous capabilities available in the 2018–2022 time-frame, with 100% penetration by 2026. This is a period of time that most automakers have committed to, with one interesting exception. Porsche has not made this commitment for the simple reason that its drivers enjoy the act of driving too much to invest in autonomous vehicle technology.

As the technology is developed and government hurries to catch up with regulation, a myriad of questions arise pertaining to safety and security, liability and insurance, financial and environmental ramifications, rules and regulations, and human readiness factors. Isaac spends a good amount of time outlining these topics, as well as the roles federal, state and local governments play in this arena, and how they interact while remaining separate.

Until recently, the federal policy was to defer to individual state regulations. However, increasingly, transportation agencies and car companies approached the federal government conveying their desire not to develop technology in response to state by state legislations. In September 2016, the federal government released the Federal Automated Vehicles Policy to address these issues. Still in draft form, this has not officially been written into legislation, but it does include a 15-point checklist for technology developers and manufacturers to use as a benchmark, as well as a model policy for states to consider.

Isaac does a good job of laying out the multitude of considerations, stakeholders, current and future conditions, and potential scenarios for the next five to 50 years. While it is clear the technology is more advanced than the policy that will regulate it, she is excited by the speed and nature of advancements, some happening on a daily basis. This means that the engineering industry must be prepped and ready to respond to these advances, for themselves and their clients, which affect the realities of our transportation future. Because, as she regularly notes, autonomous vehicles are already here, and getting more advanced by the minute. It's time for all of us, including local and state government agencies, to get on board.

Click here for more information about ACEC's online classes.

Jennifer Shelby, CPSM, is a Proposal & Communications Manager at Architectural Engineers, Inc., a mechanical, electrical, plumbing, and fire protection design firm in Boston. She can be reached by phone at 617/807-1672, or email JShelby@arcengrs.com.

Governor Baker Refiles Legislation to Administer EPA NPDES Program

The Baker-Polito Administration re-filed legislation to receive federal delegation of the National Pollutant Discharge Elimination System or NPDES on March 8. The federal government enacted the Clean Water Act in 1972 to grant the EPA permission to administer programs to ensure water quality across the United States, including NPDES. States may apply to the EPA to administer the programs themselves. Massachusetts stands to join 46 other states to do so.

There is precedent in Massachusetts, through MassDEP, of administering federal programs for drinking water, hazardous waste, and clean air, as well as other state water programs such as Title 5, wetlands, and water management. "Providing MASS DEP with the ability to make science based permitting decisions using up to date water quality data is a great opportunity for everyone in the Commonwealth," said Baker at a March 8th press conference (excerpts can be viewed here)

The legislation filed by the Administration will allow the Commonwealth to apply to EPA to administer the program at the state level, subject to federal oversight. This is needed for MassDEP to make the application. "State control over the permitting process will result in permits being written and issued in a timely way to keep pace with changing environmental conditions and ensure that local resources are directed to areas that will result in the greatest environmental improvement," said Energy and Environmental Affairs Secretary Matthew Beaton.

Governor Baker's Fiscal Year 2018 budget proposal includes a $1.4 million as seed money for MassDEP to hire 12 new staff members to phase-in and implement the NPDES program. This appropriation stands to increase in the Fiscal Year 2019 budget. "The Connecticut River Watershed Council supports creating a top-notch water quality program that administers the federal Clean Water Act at MassDEP," said Connecticut River Watershed Council Executive Director Andrew Fisk.

As part of its application, MassDEP must demonstrate it has an effective plan for managing the NPDES program, its legal authorities will meet federal requirements, and funding is in place. Once the proposal receives legislative approval, MassDEP may submit its application, however they continue to consult with EPA on requirements to develop elements for the formal submission.

Better Bike Lanes: Improving On What Got Us Here

By Steven Miller, Executive Director, New England Healthy Weight Initiative, Harvard School of Public Health

Except for the boldest and most confident people, even experienced cyclists feel more comfortable—and more people are likely to use their bikes—when they are separated from fast moving or heavy traffic. So it's not surprising that the spread of standard bike lanes—a painted corridor sometimes against the curb but usually between parked cars and moving traffic—has been a powerful catalyst for the growth of cycling in recent years. Since safety comes from numbers, these facilities have significantly lowered the risk and improved the environment for bicycling. Research shows that standard lanes increase the distance between cyclists and both moving and parked cars compared to unmarked streets—nudging parked cars closer to the curb and bicycle riders further away. But experience has also taught us that the next-to-the-driver-door location has significant flaws and that it's possible to do better. A lot of great design ideas have been developed. However, outside the advocacy community, many people still haven't heard about them. Here is an introduction to a few of them.

MAINSTREAMING

Over the past decade bicycling has been transformed from a provocation by risk-taking street-warriors into the regular choice of many "ordinary" people. Although still a small percentage of all trips, bicycling is now part of the urban scene. In nearly every city and into the suburbs there are growing numbers of adult cyclists going to work, running errands and visiting each other. On popular commuter routes some intersections now have "bike jams" where people have to wait for a light cycle or two to get through. The two-wheeled, muscle-powered flow now continues rain and shine, even through the winter. Many of them sit more upright and go slower than their predecessors. They more frequently wear helmets and are often wearing regular clothes rather than spandex. Most dramatically different: growing numbers of them have kids or groceries in seats and trailers and "cargo boxes." From near total absence, bike facilities are now a standard part of transportation policies and design standards.

Fifteen years ago the much smaller bike world was dominated by macho "vehicular cyclists" whose techniques for cycling in traffic are still useful but whose opposition to bike lanes and other bike facilities kept the community elite and small. Today, bike advocacy is led by people who seek to encourage broader involvement and see cycling as a type of Active Transportation with a positive impact on other issues—neighborhood livability, car congestion, environmental pollution and climate change resilience, public health, equity and economic development. For some advocates, bikes are a necessary ingredient in the creation of sustainable cities, a key part of what makes cities desirable, prosperous, healthy, and happy—good places to live, work, and play.

As a result, the current decade has seen an amazing maturation of bike facility and road design. From "share the road" signs, narrow shoulders, and shared lanes (sometimes with sharrows—bike symbols painted in the car lane) we moved to "standard bike lanes", to today's "physically protected" or "separated" bike lanes and intersections as well as traffic-calmed slow zones, neighborways, bike highways or bike boulevards, and Greenways. All this is pushed forward by a spreading demand for Complete Streets (which give walking, cycling and transit facilities the same or higher priority than motorized traffic) and the adoption of Vision Zero policies (which seek to eliminate death and serious road injuries by, in part, redesigning streets).

It's not surprising that the once-radical sharrow and standard bike lane are now being criticized as inadequate. Sharrows do announce the legitimate presence of bicycles and help educate road users. But sharrows are purely an attitudinal nudge rather than a traffic flow control and do little to reduce the stress on bicyclists or drivers stuck behind them. Standard bike lanes are often too narrow—when located outside parked cars it is too easy for traffic-avoiding cyclists to veer closer to the parked-car side of the lane, putting themselves in a "door zone" where a driver's unthinking exit can knock them into the way of passing vehicles: one of the leading causes of cyclist injuries and death. (It would really help if new drivers could only pass their RMV road test if they used the "Dutch Reach" to open their door -- reaching over with their right hands which turns their head so it's easier to see if another car or a bicyclist is approaching!)

BIKE LANE BENEFITS

There are effective ways to make better bike lanes and safer streets. But the current chorus of attacks on next-to-parked-cars standard bike lanes as "killing fields" is dangerous in its own right. We need to remember that these bike lanes have allowed many people to bike who were interested but afraid or concerned, and that it is possible to ride safely away from car doors in the vast majority of these lanes. Furthermore, there will continue to be roads too narrow or otherwise constrained to have anything else—and as past experience shows, having no bike lanes at all is an even worse option. Most "ordinary" bicyclists—the "interested but cautious" majority—will simply not "take the lane" on a busy street. They, and most of us, are not likely to be willing to plod forward at 10mph with a growing line of impatient rush-hour cars stuck behind. When traffic is congested, and the noisy fumes are

continued on page 6

UPCOMING ISSUES OF *INSIGHTS*

Insights is published four times a year—fall, winter, spring and summer. Watch for our Summer issue in which we continue to focus on regulations, technology and other impacts to our industry. If you would like to contribute an article to *Insights* or have ideas for new topics, please contact Allison Hopkins at allison.hopkins@tetratech.com or DebbieWhitney@tighebond.com.

Better Bike Lanes: Improving On What Got Us Here

continued from page 5

spewing, even the boldest among us have little pleasure in being part of the polluting mass.

The huge increase in today's bicycling came from the addition of standard bike lanes. Going forward with even better facilities will increase bicycling even more, contributing the "safety in numbers" dynamic of making roads safer for both cyclists and car drivers as they become more used to being with each other. Whenever possible we need to demand more than standard bike lanes. But we shouldn't stop welcoming them where nothing else is possible.

MANY PATHS TO PROTECTION

On the other hand, there are easy ways to improve standard bike lanes, both against the curb and next-to-parking versions. Visually separating a curb-side bike lane from moving traffic with "flex posts" or "bollards" will help keep drivers aware that they shouldn't pass on the right. (Studies in Canada show that these can be as much as 100 feet apart and, once established, can be easily unattached for winter snow plowing.)

On streets that have parallel parking on both sides, changing to "back-in angle parking" on one side retains roughly the same number of spots and allows drivers to see on-coming cars and bikes as they pull out. It also allows the installation of a bike lane against the curb on the other side. (These ideas are most easily applied on one-way streets: Bow Street, in Somerville's Union Square is a good example.) Many streets with only enough width for parallel parking on one side alternate it from side to side on each block, or on different days. Putting all the parking permanently on one side of the street allows a bike lane to be put next to the curb on the other side, away from the door zone.

Where parallel parking has to be retained, instead of putting the bike lane on the driver's side between the car and moving traffic, it is safer to move the cars away from the curb and put the bikes on the passenger side, between the car and the curb. This takes advantage of the sad reality that most car trips are made solo, with no one in the vehicle except the driver. If a passenger is present, it is still possible for that person to suddenly open a door in front of a moving cyclist which can cause injuries, but the rider will not be thrown into the street or under truck wheels. And if there's space to add a few feet of paint-stripped buffer space between the bike lane and the parked cars the odds of collision are further reduced. Adding some vertical "flex posts" or planters in the buffer will make it less likely that parked cars will pull into the bike area. This set up does require driver-side car occupants to exit into the traffic lane, but that's what they already "normally" do on most streets.

The strongest protection comes from curbs. Behind the curb a bike path can be at street or sidewalk level or somewhere in between. This treatment often includes trees or bushes in storm-water retention pits, as well as devices such as swales to further capture and filter road run-off. The strip of greenery can help separate the bike lane from the road (especially important if there still is parallel parking) or from the sidewalk in which case it can also contain benches and other socializing inducements. Bus stop waiting areas can be included on the street side of the bikeway. (Cambridge's new Western Avenue is a good example of how this should be done.) If the remaining road is inadequate for emergency vehicles the curb can be "mountable" (titled inwards) like the ones in many residential areas in western states.

SAFER INTERSECTIONS

Just as dooring is the key danger along a road, turning cars is the threat at intersections. Left-turning cars are a major cause of pedestrian deaths. Right-turning cars hit cyclists. A first step—important for car and pedestrian safety as much as for cyclists—is moving parked cars away from corners and "raising" the intersection or crosswalk. At the cost of a couple parking spots it becomes significantly easier to see (and avoid) pedestrians and vehicles coming from the cross street. It also allows easier turns by fire trucks.

More open corners also create room for what is now being described as "protected intersections" that create separated pedestrian routes and bike lanes through the most dangerous part of the road. A curb extension or island protects pedestrians and cyclists and forces turning cars enter the cross street at more of a right angle, making pedestrians and cyclists more visible. Separate signals for each mode—cars, bikes, pedestrians—can also be used to add temporal in addition to physical protection for bicyclists (and pedestrians) where needed.

At a minimum, even if there isn't money or space to create a protected intersection, bike lanes should be painted a highly visible green through the crossing to make it clear that they have a legitimate path. If separate bike and pedestrian signals are not available, signage should allow bikes to go with the Walk signal—which should be timed to provide a 5 second head start (rather than the typical 3 seconds) giving pedestrians and bicyclists a chance to get across (or at least become visible) before cars can begin turning. Of course, this does not change bicyclists' requirement to yield to crossing pedestrians.

Some European intersections now have bridges or tunnels for bicycles at particularly busy or complex intersections, notably at highway junctions. It will be a long time before those become standard, especially here. But they're an intriguing example of creative thinking and effective safety-enhancing public investment.

OFF-ROAD ALTERNATIVES

The main strategy for improved safety is separation. Our public right of way already has separate lanes for cars and for pedestrians, which we call sidewalks. Now, people are demanding separate lanes for bicycles and perhaps for transit (buses and trolleys) as well. But what about pushing separation even further—creating totally separate routes for non-motorized travel?

Several European countries are now creating Bicycle Highways—arterials for cyclists: wide, two-way, totally dedicated paved paths from surrounding areas into major cities. Planners see these as vital to continue boosting the percentage of commuters who bicycle rather than add their car to already overburdened roads, thereby providing a host of other benefits.

In this country, Frederick Law Olmstead pioneered the use of special paths for different users in his design for New York's Central Park and Boston's Emerald Necklace. The national Rails-to-Trails movement translated the idea into a way to preserve the miles of abandoned railroad right-of-way corridors—many reaching deep into our cities and outward across entire regions—from getting lost in marginal expansion of abutters' private property.

Our growing vulnerability to climate extremes has prompted the growth of Greenways—low traffic stress routes for non-motorized activity bordered by storm-water catch-basins, bushes, trees, and permeable-surface picnic or play areas. If connected into seamless, region-wide network these facilities have enormous value for both recreation and mobility. In eastern Massachusetts, the Emerald Network Initiative focuses on the urban core and the Land Line Coalition brings together the larger region.

continued on page 7

Better Bike Lanes: Improving On What Got Us Here

continued from page 6

SEPARATE OR TOGETHER

Instead of separation, what about togetherness? What about eliminating all the lanes for everyone? There is an entirely opposite strategy that is equally effective in the appropriate situations—of putting everything together using designs that force everyone to move in a way that prioritizes the safety of the most vulnerable. Called "shared space," these roadways violate traditional practice and are therefore controversial. The most common application of this design principle has been along the main streets of small business districts. Removing all curbs, signage, and signals forces pedestrians, bicycles, and motor vehicle drivers to all move slowly, paying attention to their surroundings and negotiating with each other. In some locations, the absence of traffic light back-up actually lets vehicles get through the area in less time—slow but steady. Many shared-space areas handle traffic smoothly and provide access to local users of the street.

There is, in addition, a much less radical version of the idea appropriate for low-traffic residential areas, sometimes called a "slow zone" or "neighborway". Without banning cars (although trucks require a special permit) the goal is to create a public space in which neighborhood families can play, picnic and party without the noise, pollution, or danger of fast moving cars pushing them off the pavement. The speed limit is set very low—perhaps 5 mph—which is made self-enforcing by the installation of speed humps, raised crossings, curves, uneven pavement, or other techniques. The street also has in-road barriers at the ends (or in the middle) of the block to help keep movement slow. Signs and pavement paintings are used to make the message explicit. Resident and visitor parking is allowed, although limited. Pushing the "play space" concept further, some Neighborways add play equipment. Some are designed to maximize storm water retention. Most have trees and other greenery. The core idea is that the street space itself should be safe for children, with everyone else welcome but only on the condition that they act in ways that honor the code.

It is standard practice today to discourage through traffic in residential neighborhoods by using opposing one-way streets to reduce connectivity. However, this also discourages bicycling by making it more difficult for cyclists, dependent on their muscles rather than fossil fuels, to take the most direct desire-line routes. Neighborways, contra-flow lanes, and two-way bike paths are ways to create safe, pleasant, low-traffic routes for bikes without flooding a street with short-cutting cars. This concept extends to larger-scale road design as well. For example, many European cities have designed their streets so that a car cannot drive straight through the downtown. Instead, the driver must first go out to a ring road to navigate cross town. However, people on bikes can move directly between all the parts of the city quickly and easily. This has a two-fold effect. First, it moves regional traffic out of the city center making for a friendlier and more prosperous business district. Second, it encourages people living in the city center to not use their car for short trips. As Bostonians are already learning, it is almost always faster and easier to travel by bike (or walk or take transit) than to get through town by car.

PEOPLE PRIORITY STREETS

Danish urban planner Jan Gehl says that the key to urban livability is to stop thinking that vehicular movement is the only or even the most important function of a street. He strives to create "people priority streets" that are a public spaces available for a variety of purposes.

Of course, the needs of city and suburban town-center areas are different than those of exurban and rural locations. But in regions of denser population the most powerful way to make bike lanes safer is to reduce the currently hard-to-avoid need to use a car to get around. Ultimately, we need better trolley, subway, and bus systems. But in the meantime—or at the same time—it is important to continue the amazingly rapid advance of bike safety design.

Steven Miller is the Executive Director of the New England Healthy Weight Initiative at the Harvard School of Public Health, and a Livable Streets Alliance Board Member. This article is his October 7, 2016 blog post from his blog, Livable Streets. He would like to thank Charlie Denison for insightful feedback on earlier drafts. Steven can be reached at steve@livablestreets.info.

President's Message

continued from page 1

infrastructure funding / tax challenges, the mobilization of our base for advocacy is still the most widely validated currency on Capitol Hill. So, I continue to strongly encourage you all to get involved, participate in our committee activities, attend our programs and, if you have any questions or concerns, please contact me or our Executive Director Abbie Goodman.

To achieve our objectives, our collective talent is our greatest asset, and it serves us well at ACEC/MA, through the chairs of our various committees and forums, and through our active members who contribute so much to our organizational value. In this regard, a special word of thanks needs to go out to our very talented Executive Director Abbie Goodman who has been serving us so well, and who recently passed her 20th year with us. At this year's Engineering Excellence Awards dinner it was my great pleasure to congratulate and offer an award to Abbie in recognition of her service at this milestone. For those of you who may have missed the event (our largest attended event ever), I believe it is important to repeat some of what was said:

"First, it is hard to believe Abbie that you have just passed through your 20th year as our Executive Director, a truly significant anniversary. We would be remiss if we did not pause and take this opportunity, with great admiration and affection, to congratulate you on this milestone. Abbie, we truly value your dedication and commitment to our diverse engineering community. You are the beating heart of our organization. It is with sincere gratitude for the contribution you have made to our successes that we say thank you for all that you do. Again, congratulations, and thank you so much for all your hard work and dedication!"

In closing, let me say that I truly appreciate the commitment and efforts of all our active members, our ACEC/MA support staff at The Engineering Center Education Trust (TECET), and our Executive Director Abbie Goodman. Our engineering consulting workdays are hectic, with deliverable deadlines, appointments, and meetings; amidst the sometimes all-consuming emails, text messages, and phone calls. We need to pause and reflect on those issues that matter most, and those that help us so much. Thank you!

P.S. I hope you can join us for Engineers and Land Surveyors Day at the State House on Tuesday, May 23 to advocate for transportation and water infrastructure funding and other issues important to our engineering business.

What Doesn't Kill a Company Makes It Stronger: Inside CannonDesign

By Rich Friedman

Imagine that a senior manager in your firm and an external consultant were engaged in activities that did not just cross an ethical gray area—they were illegal.

It's unthinkable. Yet it happened at 950-person A/E firm CannonDesign, and today, the firm is a better business partner because of it.

In this article, I share their remarkable story, one that I believe every A/E/C and environmental consulting firm can learn from. Whether your firm is involved with government contracting (as CannonDesign is) or not, read on to learn why transparency, communication and professional ethics must be baked into your firm's culture—and how to make that happen.

In 2013, CannonDesign made headlines when they became publicly embroiled in a federal investigation by the U.S. Attorney's Office into an external consultant they had worked with for 18 months in 2010 and 2011. The former Veteran's Affairs (VA) official who had been brought in to help develop VA projects during that time, but whose contract wasn't renewed, was under federal investigation for trading in government information. Worse, one of their own senior designers was implicated in the bribery scheme.

"It was a shock given our long history of corporate citizenship," says Brad Lukanic, AIA, who became CEO in July 2016. "CannonDesign has been around for more than 100 years, and had never been involved with anything like this, but we were not as sophisticated in our policies, practices and compliances as we should have been."

"It was a very difficult situation," he says. "For many CannonDesigners, this is an avocation. It's not just a job. Good architects, engineers and designers were concerned. It was a very emotional time. It was also expensive financially. It's not just the penalty and the lost work. Compliance itself has a cost attached to it."

Rather than hunkering down and waiting for the storm to blow over, CannonDesign leaders saw an opportunity to grow from the experience and set their firm apart in a positive way. Three years later, they've resolved the case. Both individuals are serving jail time. And CannonDesign has created what is arguably the gold standard of formal compliance and corporate ethics programs.

Here's how they did it:

Cooperation with authorities. CannonDesign cooperated with the government and participated in the investigation, sharing more than 400,000 documents with investigators. The employee under investigation was relieved of his responsibilities. It wasn't without pain. The firm was suspended as a federal contractor for six months in 2015, but successfully argued for reinstatement. (They continue to provide professional services to the VA.) CannonDesign also agreed to remove itself from a large VA hospital project in California, which had been tied to the investigation. And they paid $12 million in penalties—a big blow to the employee-owned firm.

A clear and cohesive external message. CannonDesign's leadership knew their clients would hear or read about the investigation and have questions. They created talking points for all leaders, and proactively broke the news to clients. In a handful of cases where clients expressed questions or concerns, leaders followed up personally to assure them that CannonDesign had put new measures in place to assure that this would not happen again.

Transparency with employees. "Internally, it was a learning experience for us," says Lukanic. "It is the culture at CannonDesign to have as much transparency as possible. We communicated with our employees about what was happening to the degree allowed by law." The firm also developed a common language to enable their people to better understand and discuss the topic.

A new Office of Compliance. CannonDesign invested heavily in building a new Office of Compliance. Paul Moskal, a former FBI division counsel, was brought on as Principal and Director of Compliance in 2014, a role with direct access to the CEO, General Counsel and Board of Directors. The office, which is also staffed by an attorney with A/E experience, was trained for and tasked with developing, rolling out and managing a robust corporate compliance program.

Top-down leadership. Ethics and compliance have become part of everyday life, starting with a Code of Conduct for the Board of Directors, and today includes a Director of Compliance. Firm bylaws were scrutinized and modified to strengthen review and oversight, and additional legal staff was brought in to implement risk management and business practices, as well as to help with project due diligence reviews. They also established an Ethics Committee overseen by the Office of Compliance and trained Integrity Champions in each office. "We wanted to identify policies and procedures that show everyone how we live at CannonDesign," says Moskal.

An established Code of Conduct. CannonDesign's Board created its first Code of Conduct with specific federal and international contracting language. The Code, called "Living Our Vision," is published on the firm's internal and external websites, along with a hotline for confidential reporting. Employees are now required to annually certify in the code.

Compliance language everywhere. Today, CannonDesign includes compliance language in all of its contracts, not just those with federal clients, subject to client approval, says Moskal. "Our clients see this as a value add," he says. In fact, recently, an institutional client cited CannonDesign's ethics and compliance guidelines as a top reason for their selection. "They appreciated that we have compliance language and policy that informs and protects them as much as it protects our firm."

Human Resources now uses compliance and ethics language in job postings, offer letters and exit interviews, and has established guidelines about the hiring of former government employees. Moskal meets with new hires to personally introduce the firm's compliance program. CannonDesign has also created an "Acts of Integrity" program to reward ethical and compliance-related behavior.

Education and training. Staff training has been extensive, using internal and external experts and an electronic library. From the CEO on down, employees must have basic ethics and compliance training. Company policy mandates an additional 1 to 4 hours per year, depending on position. Since 2014, employees have completed nearly 12,000 hours of training, including training specific to the Foreign Corrupt Practices Act (FCPA) and federal procurement and contracting.

A/E/C and environmental consulting firms need to be aware of the things they can do to protect everyone involved in their projects. With ever-changing technology, increased awareness and the global economy, issues of compliance and ethics are becoming more important. They're also being more carefully watched than ever before.

"Ultimately, we were in receipt of government information that we should not have been given," says Moskal. "We take responsibility for that. We take responsibility for our former employee, for not having a compliance program in place, and for other employees not stepping forward. We believe that by talking about it, we can help other firms avoid this experience."

Rich Friedman is President of Friedman & Partners, a marketing and management consulting firm serving the AEC industry. He can be reached at rich@friedmanpartners.com or 508/276-1101.

ACEC
American Council of Engineering Companies of Massachusetts

What Has ACEC/MA Done For You Lately?

Spring 2017

With the support of our member firms, ACEC/MA works hard to protect and promote your business in a variety of ways. In addition to our robust programs, here is an account of our recent actions.

MASSACHUSETTS AGENCIES

- Our ACEC/MA DCAMM Partnering Committee continues to meet with the Division of Capital Asset Maintenance and Management (DCAMM) Deputy Commissioner and key staff on contract issues and design specifications.
- As of result of partnering with ACEC/MA, the MWRA recently announced an increase in its salary cap to $75/hour for consultant services.
- ACEC/MA's Transportation Agency Liaison Committee (TALC) partnering groups are meeting with MassDOT Highway, MBTA and Massport on a range of issues to help agencies streamline project delivery. TALC hosted key leaders from the agencies over the past few months discussing such issues as cost estimating, project scheduling, developing MBTA project scopes of work and quality assurance.
- Recent Member Briefings with key public agency leaders include ACEC/MA's Energy and Environmental Affairs Committee (EEAC) briefing with a representative of the State Auditor's Division of Local Mandates on the recent Water Infrastructure Report and the Building Engineering Committee with the Designer Selection Board Executive Director.

LEGISLATIVE AND REGULATORY

- ACEC/MA continues to co-chair the Water Infrastructure Alliance, a broad-based group of business, industry, government and environmental organizations focused on the needs for more funding for water, sewer and stormwater management infrastructure. We plan to host a meeting with State Treasurer Deb Goldberg in early May.
- ACEC/MA continues to advocate for changes to draft regulations proposed by the Board of Registration of Architects that would adversely impact A&E firms.
- Through TECET, The Engineering Center Education Trust, ACEC/MA participates in meetings of the Board of Registration of Professional Engineers and Professional Land Surveyors.
- Plans are underway for the May 23 Engineers and Land Surveyors Day at the State House. This year it will be held in conjunction with Water Infrastructure Awareness Day. Public Works professionals from the Mass. Highway Association, Mass. Water Works Association, and Mass. Municipal Association are joining with us to talk with legislators.
- ACEC/MA continues to support or oppose Massachusetts Senate and House bills that affect our industry.

PROFESSIONAL PRACTICE

- On March 15, ACEC/MA honored 35 outstanding engineering projects and several individual leaders at our 2017 Engineering Excellence and Awards Gala, with co-emcees DCAMM Commissioner Carol Gladstone and DCR Commissioner Leo Roy.
- ACEC/MA's 2017 Emerging Leaders Program for firm leaders graduated 18 future leaders in April 2017. Plans are underway for our Odyssey Leadership Program, which will start in October 2017. Massachusetts firms with 100 or fewer employees are eligible for Workforce Training Grant funding to assist with tuition.
- ACEC/MA held a successful State Markets Conference in early April, with public agency leaders from MWRA, MassDOT, MBTA, Massport, DCAMM, UMBA and ACEC National.
- Plans are underway for a Design-Build Symposium, our Annual Celebration/Board Transition and some programs over the summer. At press time, our April Effective Writing Program at GEI Consultants was almost sold out.
- Our Leadership Education Committee held another successful 3-session Genesis Program in January and early February.

American Council of Engineering Companies of Massachusetts (ACEC/MA)

The Engineering Center
One Walnut Street
Boston, MA 02108-3616

T: 617/227-5551, F: 617/227-6783,
www.acecma.org

ACEC/MA NEWS AND NOTES

Engineers and Land Surveyors Day

It is time to register for this event to be held at the State House on Tuesday, May 23, from 9 am to 11:45 am (in cooperation with Water Infrastructure Awareness Day, which begins at 11:45 am). This yearly event provides the opportunity for Engineers, Land Surveyors, Public Works Professionals and other design professionals to meet with Massachusetts state legislators. ACEC/MA will make appointments for you and provide advance issue briefings. For more information click here. To register for the event, click here.

ACEC Citizen Lobbyists Make Progress on Infrastructure, Tax Reform at 2017 Annual Convention in Washington, DC

During the April 23–26, 2017 Annual Convention, ACEC members urged lawmakers to move forward with an aggressive infrastructure agenda this year that increases funding for core federal programs—including the Highway Trust Fund and water programs—and improves incentives for private investment. The Council's citizen lobbyists specifically asked House members to sign onto a bipartisan effort led by Representative Sam Graves (R-MO) and Delegate Eleanor Holmes-Norton (D-DC) urging the House Ways and Means Committee to provide for the solvency of the Highway Trust Fund in upcoming tax reform legislation. ACEC has launched a grassroots Action Alert urging all members to contact their Representatives to support this bipartisan effort. On tax reform, ACEC members urged Congress to treat corporations and passthrough businesses equally in setting tax rates, and also focused attention to other key industry priorities, including the preservation of cash accounting, the 9 percent A/E tax deduction (Section 199), and other issues. Click here for more information.

TECET Silver Anniversary Golf Tournament

It's Tee Time! Support The Engineering Center Education Trust (TECET) programs by registering to play and sponsor the Silver Anniversary Golf Tournament. This annual fundraiser will be held Monday, June 19, 2017 at the Shaker Hills Country Club in Harvard, MA. Register online here. Or download an entry and sponsorship form.

ACEC National Working on H-1B Visa Issue

Recognizing the challenges our firms face in finding qualified technical professionals in specialized areas, ACEC has long advocated for increasing the number of H-1B visas allocated each year by lottery. Unfortunately, we are up against a potential Trump Administration executive order on H-1B visas, along with several bills that have, or will be, introduced in Congress with some restrictions on H-1B visas. These are primarily with respect to salaries, and especially when the firm is a heavy user of H-1Bs (more than 15% of their employees are on H-1Bs). There are currently 65,000 H-1B visas allocated each year, with an additional 20,000 granted to those with master's degrees or Ph.Ds. ACEC has long advocated for increasing those numbers and will continue to be very active in pushing Congress to lift the cap on H-1B visas to give our members more opportunities to hire the best and brightest from abroad.

ACEC/MA Resource Page on the FY2018 Budget Process

The Massachusetts government is funded on a fiscal year basis, and Fiscal Year 2018 runs from July 1, 2017 – June 30, 2018. Click on our budget page for updates on the FY2018 budget process where the newest actions are listed first.

Changes at the Department of Public Safety

Effective March 27, 2017, programs previously under the purview of the Department of Public Safety have been transferred to the Department of Fire Services and the Office of Public Safety and Inspections within the Division of Professional Licensure. As a result of this legislative change, the respective agencies are in the process of transitioning information over to their new website locations. For reference, see Chapter 6 of the Acts of 2017, An Act to Reorganize the Department of Public Safety. ACEC/MA testified in support of this bill earlier in 2017.

ACEC/MA Emerging Leaders Class of 2017

ACEC/MA hosted another successful Emerging Leaders program during six consecutive Wednesdays in March and April. Participants attended six sessions on topics of significant value to engineers on a leadership track. Topics include: People Management, Strategic Planning, Government Affairs, Risk Management, Marketing and Finances.

ACEC/MA Government Affairs Update

March Revenues Widen FY17 Budget Gap—courtesy of Rasky Partners Inc.

March tax revenues were $81 million below budget benchmarks for the month, opening up a $220 million gap. Income tax collections of $889 million in March were 1.1% below the benchmark, while the $451 million collected in sales taxes missed targets by 2. %. Corporate and business taxes also fell below 2016 levels by $27 million.

While the state has taken in $18.1 billion this fiscal year, representing a 1.7% growth over the same period last year, year-to-date revenues remain below the projected benchmarks. In March, Governor Baker's budget Chief Kristen Lepore would not rule out another round of emergency cuts if the revenue gap worsened that month. Lepore and the Department of Revenue stated that they will be carefully monitoring the last three months of the fiscal year, as they contribute roughly 30% of the Commonwealth's tax collections for the year.

Rosenberg Suggests Tax on Services—courtesy of Rasky Partners Inc.

While addressing the Greater Boston Chamber of Commerce in early April, Senate President Stanley Rosenberg said that Massachusetts should discuss imposing a tax on services. Rosenberg stated that Massachusetts has a sales tax that applies to goods, but not services, even though our economy is largely driven by services.

This would not be the first time the state has attempted to tax services. A business and professional services sales tax was passed in the 1990's, but it was quickly repealed by the Weld administration. Then in 2013, lawmakers attempted to establish a sales tax on certain computer services. They ultimately repealed the tax amid an outcry from businesses.

Rosenberg noted that he is not aware of any formal proposals to establish a sales tax on services in the legislature, and that he would assume that any action towards a service tax would begin after the 2018 election.

Legislative Leadership for 2017–2018 Legislative Session

In February, House and Senate leaders assigned members to committees and leadership positions. The process of scheduling public hearings on the more than 5,700 bills filed by House and Senate lawmakers can begin now that committees are constituted. Click here for a link to a complete list of leadership positions in both branches, House standing committees, Senate standing committees, and joint committees.

Join an ACEC National Committee

ACEC National committees recommend legislation, provide guidance and oversee the performance of ACEC programs. Sign up here.

Join an ACEC/MA Forum or Committee

ACEC/MA Committees recommend legislation in Massachusetts, brief you on public policy issues, provide leadership education and guidance and oversee the performance of ACEC/MA programs. Sign up here.

UPCOMING EVENTS — SAVE THE DATE

ACEC Business Insurance Trust Drone Webinar for ACEC Members
May 17, 2017
Click here for more information

Engineers and Land Surveyors Day at the State House + Water Infrastructure Awareness Day
May 23, 2017
Boston, MA
Click here for more information

ACEC/MA Member Briefing on Quality Control for MassDOT Highway Projects
May 31, 2017
Aldrich Center, The Engineering Center, Boston, MA
Click here for more information

ACEC 2017 Expert Witness Seminar in Boston
June 15-16, 2017
This is an ACEC national event
Click here for more information

TECET Annual Golf Tournament
June 19, 2017
Shaker Hills Country Club, Harvard, MA
Click here for more information

ACEC/MA Annual Celebration
June 21, 2017
Bruce C. Bolling Municipal Building, Roxbury, MA
More details to follow

ACEC/MA Committee/Forum Meetings on www.acecma.org.
Follow us on Twitter at http://twitter.com/ACECMA

NEW MEMBER

Affiliate:

Zuk International LLC
31 Bobby Jones Drive
Andover, MA 01810-2880
713/876-8785

Firm Representative: Peter Zuk

Peter M. Zuk has over 35 years of large-scale Program and Project Management experience as well as Stakeholder Management, Risk Management, Asset Management, and Dispute Resolution.