

Pennsylvania State Transportation Innovation Council
Innovation Through Collaboration
Accomplishments 2016



Table of Contents

A Message from the Co-Chairs.....	1
STIC Overview.....	2
Strategies to Increase Safety and Congestion Reduction.....	3-4
Innovations to Accelerate Construction and Enhance Project Delivery.....	5-6
Efforts Underway to Support Sustainability.....	7-9
PennDOT District 2 Spotlight.....	10
Every Day Counts Showcase and STIC Roundtable.....	11
Safety Symposium.....	11
2016 Outreach Highlights.....	12-13
Looking Ahead to 2017.....	14

Cover Photo: PennDOT District 8 utilized Accelerated Bridge Construction to replace the State Route 581 Bridge over 10th Street in just four weekends.

Inside Cover Photo: PennDOT District 3 used Accelerated Bridge Construction techniques to expedite two bridge replacement projects on State Route 287.

2016 STIC Members

Co-Chairs

Leslie S. Richards, Secretary

Pennsylvania Department of Transportation

Renee Sigel, Division Administrator

Federal Highway Administration - Pennsylvania Division Office

Members

Bechara Abboud, Ph.D.

Temple University

A. Emin Aktan, Ph.D.

Drexel University

Rodney Bender, P.E.

Pennsylvania Public Utility Commission

James Casilio, P.E.

Pennsylvania Aggregates and Concrete Association

Sherri Chippo, Ph.D.

American Public Works Association

Will Clark

York County Planning Commission

Mark Compton

Pennsylvania Turnpike Commission

Crystalann Deardorff, P.E.

Women in Transportation Seminar

Nathan Flood

Pennsylvania Department of Conservation and Natural Resources

Douglas George, P.E.

American Society of Highway Engineers

Charles Goodhart

Pennsylvania Asphalt Pavement Association

Mark Hartle

Pennsylvania Fish and Boat Commission

Brad Heigel, P.E.

Pennsylvania Turnpike Commission

Elam Herr

Pennsylvania State Association of Township Supervisors

Steve Howsare

Southern Alleghenies Planning and Development Commission

Doug McLearn

Pennsylvania Historical and Museum Commission

Seri Park, Ph.D., P.T.P.

Villanova University

Jim Runk, (retired)

Pennsylvania Motor Truck Association

Kevin Stewart

Pennsylvania Motor Truck Association

Megan Ryerson, Ph.D.

University of Pennsylvania

Richard Sause, Ph.D.

Lehigh University

Clayton Stahl, P.E.

American Concrete Pavement Association

Scott Sternberger

American Council of Engineering Companies

Darlene Stringos-Walker

Pennsylvania Association of Environmental Professionals

Edward Troxell

Pennsylvania State Association of Boroughs

Jason Wagner

Associated Pennsylvania Constructors

Ramez Ziadeh, P.E.

Pennsylvania Department of Environmental Protection

A MESSAGE FROM THE CO-CHAIRS

The Pennsylvania State Transportation Innovation Council (STIC) has made tremendous progress to support the deployment of innovations that make Pennsylvania's transportation system safer and more sustainable. In 2016, the Pennsylvania STIC introduced four new innovations and supported the deployment of 72 ongoing initiatives. These innovative tools and techniques are proven to help reduce congestion, accelerate construction, enhance sustainability and ultimately save lives. 2016 represented a year of significant growth for the STIC, and we are proud to present the Accomplishments Summary featuring highlights from the past year.

The STIC recognizes that education is the key to success. The STIC has developed a robust outreach and educational program with the goals to provide training to all PennDOT districts, engage industry partners such as transportation engineers and contractors, host workshops in partnership with the Pennsylvania Turnpike Commission, and increase awareness and engagement of local governments. 2016 marked an important milestone in this effort. As of December 2016, the STIC has trained almost 2,000 transportation professionals; partnered with every PennDOT district, industry organizations and the Pennsylvania Turnpike Commission to host custom Innovation Day workshops; and launched a local government outreach program.

The Pennsylvania STIC's efforts have not gone unnoticed. This year, Pennsylvania was selected by the United States Department of Transportation (U.S. DOT) and Federal Highway Administration (FHWA) as a model for the nation. In August 2016, Pennsylvania hosted a national forum, the Every Day Counts (EDC) Showcase and STIC Roundtable, which was co-chaired by U.S. DOT Deputy Secretary Victor Mendez and FHWA Administrator Greg Nadeau among other industry leaders. The forum provided an opportunity for STIC members to discuss the strategies that have been successful in Pennsylvania and share lessons with other states.

As we look ahead to 2017, the STIC will be focusing on the deployment of innovations and exploring how PennDOT can institutionalize tools, policies and procedures into standard business practices. In addition, the STIC will build on its efforts to engage local governments by hosting regional workshops and safety demonstration events focused on tools that communities can use to enhance transportation safety and environmental sustainability.

We commend you for your efforts to support the STIC's success, and we encourage you to help us continue to lead the way through innovation.



A handwritten signature in black ink that reads "Leslie S. Richards".

Leslie S. Richards
Secretary of Transportation



A handwritten signature in black ink that reads "Renee Sigel".

Renee Sigel
FHWA Pennsylvania Division Administrator

State Transportation Innovation Council: Moving Innovation Forward

The Pennsylvania STIC is comprised of a multi-stakeholder leadership team co-chaired by the Secretary of Transportation and the FHWA Pennsylvania Division Administrator. The STIC brings together a diverse team of transportation stakeholders to forge an environment of innovation, imagination and ingenuity to pursue specific initiatives and their rapid implementation to deliver a modern, high-quality transportation system to the citizens of Pennsylvania. The STIC supports the deployment of FHWA Every Day Counts (EDC) initiatives, and identifies new strategies and innovations to enhance safety, efficiency and sustainability.



“Pennsylvania’s secret to success is teamwork and executive leadership support; it does not take long for those who come to the STIC meetings to realize this isn’t just a regular meeting. It is something that everyone is very passionate about.”

– James D. Ritzman, P.E., Deputy Secretary for Planning, PennDOT

Technical Advisory Groups Evolve to Meet Needs

Much of the STIC’s success is due to the hard work of the Technical Advisory Groups (TAGs), which are comprised of industry experts who assist the STIC in evaluating, promoting and deploying innovations. The TAGs are responsible for developing white papers for each initiative and presenting those ideas to the STIC members for approval. White papers define the purpose and anticipated benefits of the initiatives. The STIC has 11 TAGs led by a chair or co-chairs, and facilitators from FHWA and PennDOT. The TAGs maintain an agile management structure and are constantly evolving to respond to changing needs and opportunities in the transportation industry. For example, in 2016, the Intelligent Transportation Systems (ITS) TAG rebranded to Traffic Operations to better represent all aspects of traffic systems and operations.



The TAGs evaluate, pilot and deploy innovations that improve performance and durability. One such innovation, as depicted in the photo above, is the Elastomeric Spray Type Membrane Waterproofing of Structures, which has been proven to provide a superior seal, and can be used in various bridge construction applications and rehabilitation programs.

PennDOT Leadership

Since its inception in 2011, PennDOT has provided staff support to manage STIC operations. In 2016, management of the STIC transitioned from the Bureau of Planning and Research to the Bureau of Innovations (BOI) under PennDOT’s Administration Deputate. BOI, under the leadership of Deputy Secretary for Administration Suzanne Itzko, is committed to guiding and

supporting performance improvements that align with PennDOT’s vision, mission and values. As part of this ongoing commitment to identify efficiencies and help PennDOT work smarter, the STIC was a natural fit in BOI. This decision allows for participation of PennDOT staff across all deputates and aligns the STIC’s mission with PennDOT’s overall strategic vision to advance innovation.

“I am proud to be part of a group of professionals who volunteer their time and talents to make the Pennsylvania STIC the very model of success for other states to follow. As the STIC evolves as part of the Bureau of Innovations, I have every confidence that our path forward will lead to our raising the bar on the expectations of our STIC volunteers and the public that we serve.”

– Suzanne Itzko, Deputy Secretary for Administration, PennDOT

Putting Innovation into Practice

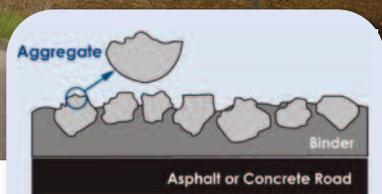
Strategies to Increase Safety and Congestion Reduction

PennDOT is working to deploy STIC innovations that improve safety on roadways, reduce traffic congestion, accelerate construction, improve project delivery and enhance sustainability. Here are updates on a few initiatives that support these goals.



High Friction Surface Treatment

PennDOT and North Cornwall Township, located in Lebanon County, hosted a live demonstration of the High Friction Surface Treatment application.



High Friction Surface Treatment

PennDOT has applied HFST at 177 locations statewide with 72 more projects planned

In 2015, more than 1,200 people lost their lives while traveling on Pennsylvania roadways. Although roadway fatalities are decreasing, one life lost is too many. Through the STIC, PennDOT is deploying High Friction Surface Treatment (HFST), which is proven to reduce roadway departure crashes and fatalities. In fact, PennDOT evaluated the cost-benefit ratio of this product and determined that HFST saves roughly one life each year for every 15 locations where HFST has been installed.

As of December 2016, PennDOT has applied HFST at 177 locations statewide with 72 more projects planned. HFST is typically applied on curves, but PennDOT is also applying the product on bridge decks to increase roadway friction and reduce ice accumulation by enhancing the effectiveness of salt brine. HFST is comprised of durable aggregate and a polymer binder, which increases pavement friction and helps motorists maintain control. This product can be applied to asphalt and concrete. PennDOT is currently evaluating binder products and anticipates updates to Bulletin 15 in 2017.

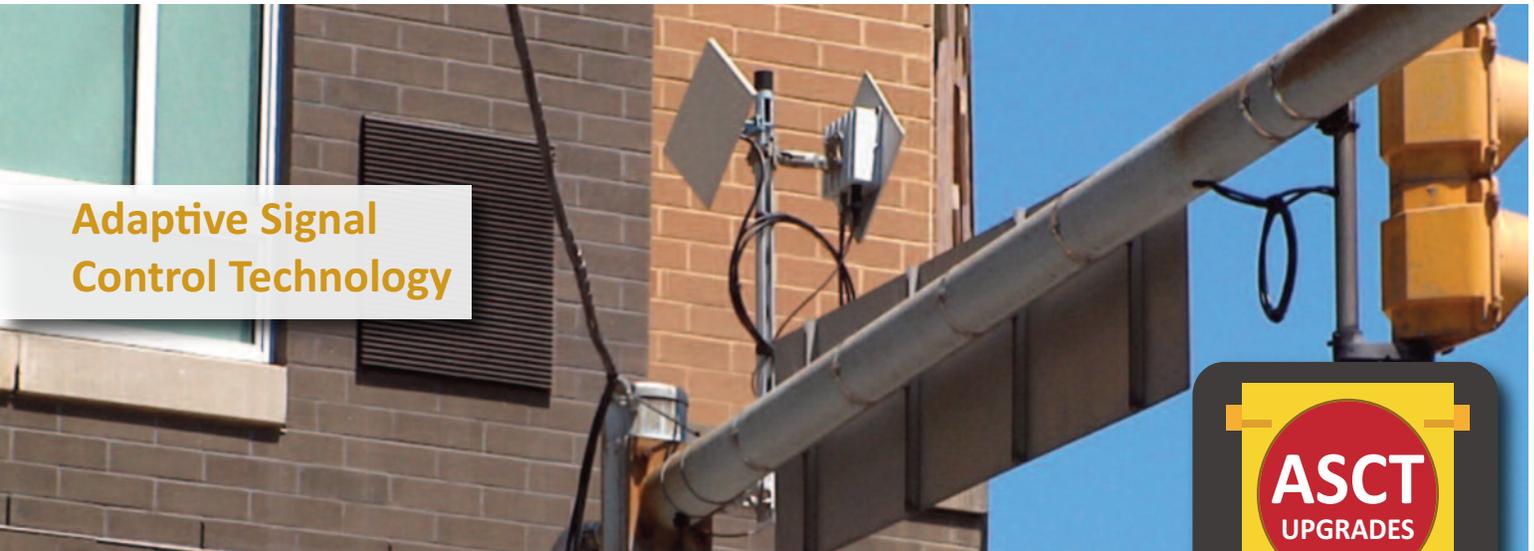


Road Diets

The Road Diet project on Front Street in Harrisburg has helped calm traffic and enhance safety.

As Pennsylvania strives to enhance roadway safety for all users, PennDOT is turning to Road Diets to “right-size” travel lanes and better accommodate motorists, bicyclists and pedestrians. This innovation is proven to increase roadway efficiency as well as safety. For example, the City of Harrisburg, located in Dauphin County, deployed a Road Diet on Front Street, a main north-south artery through the city. The project included reducing travel lanes

from three to two, and adding crosswalks, a bike lane and other enhancements. The project improvements resulted in improved bicyclist and pedestrian accommodations, reduced average vehicle speeds from 40 to 35 mph, and enhanced safety and driver comfort without compromising traffic flow. Across the state, PennDOT has constructed eight Road Diets, with one project in construction and five more in design.



Adaptive Signal Control Technology

Adaptive Signal Control Technology uses smart systems to manage traffic flow and reduce congestion.

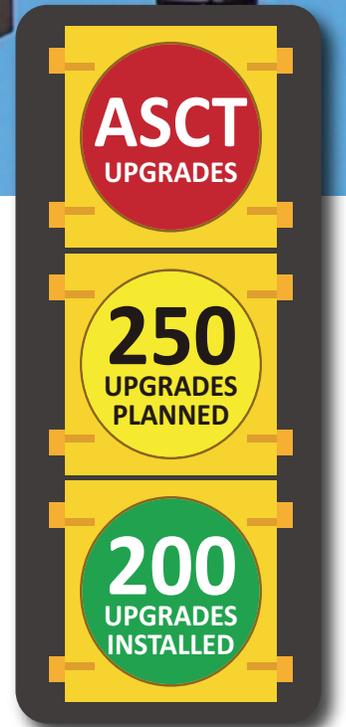
One of the most effective ways to reduce congestion, and improve safety and air quality, is to improve traffic signal timing and reliability. PennDOT has installed Adaptive Signal Control Technology (ASCT) at over 200 signals statewide with another 250 signal upgrades planned.

One project included ASCT upgrades along a congested commercial section of U.S. Route 22 from Murrysville, Westmoreland County through Monroeville, Allegheny County. This roadway is an important travel corridor for local residents and commuters into Pittsburgh. Prior to the installation of adaptive signals, local governments received frequent complaints

about the long traffic delays on Route 22. To address the problem, local governments partnered with PennDOT Districts 11 and 12 to install adaptive signals at 18 intersections, which improved traffic safety and reduced travel time on the eight and a half mile corridor by 10 to 15 minutes.

PennDOT is leading efforts statewide to support enhancements through the Green Light-Go Program. Through the initiative, PennDOT provides grant funding to support traffic signal upgrades; and, for select roadways across the Commonwealth, the Department has assumed traffic signal operations and maintenance.

“This technology allows us to quickly and efficiently solve traffic flow problems, which provides cost savings to our municipality and the traveling public.” – Jim Morrison, Chief Administrator, Municipality of Murrysville, Westmoreland County



TIM Training

Traffic Incident Management (TIM) training provides life-saving tools to first responders to facilitate the safe and quick clearance of vehicles at incident scenes. This effort helps protect drivers and emergency responders, minimize the backlog effect on traffic congestion and restore traffic flow. In 2016, PennDOT partnered with the Pennsylvania State Association of Township Supervisors (PSATS) to host six TIM training workshops. To date, there have

been a total of 37 workshops conducted and over 8,300 first responders trained. In addition, PennDOT and the FHWA Pennsylvania Division Office held a TIM Summit on Nov. 16, 2016, where more than 100 emergency response professionals met to discuss the development of a statewide TIM program. This summit focused on developing an organizational approach and business process to integrate TIM strategies into operations.

PennDOT provided TIM training to more than 8,300 first responders at 37 workshops across the Commonwealth.

Putting Innovation into Practice

Innovations to Accelerate Construction and Enhance Project Delivery



Accelerated Bridge Construction

PennDOT District 8 utilized Accelerated Bridge Construction to replace the State Route 581 Bridge over 10th Street reducing construction time and improving safety.

PennDOT uses numerous Accelerated Bridge Construction (ABC) techniques to build bridges faster and stronger, reducing onsite construction time and improving safety without sacrificing quality. The benefits of ABC include reducing the cost to the Department for construction, while at the same time lessening the impact to the traveling public by limiting travel delays and detours.

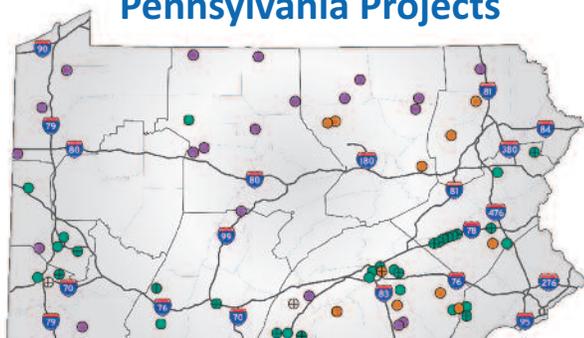
Four effective methods of ABC techniques are Geosynthetic Reinforced Soil-Integrated Bridge Systems (GRS-IBS), Quick Construction Box Culverts, Prefabricated Bridge Elements and Systems (PBES), and Ultra-High Performance Concrete (UHPC) Connections. PennDOT has institutionalized many of these techniques and considers them standard practice. For example,

PennDOT has constructed 15 bridges utilizing Prefabricated Bridge Elements and Systems, with 19 more structures in design. To date, PennDOT has built 17 GRS-IBS, with three more planned.

One area where Pennsylvania is leading the nation is in the deployment of Ultra-High Performance Concrete (UHPC) Connections. UHPC is a steel fiber-reinforced, cementitious-based material that provides exceptionally high mechanical and durability-related properties to improve strength and simplify connection details. This product is often utilized in conjunction with ABC technologies to build bridges stronger and faster. To date, PennDOT has utilized UHPC connections on eight projects with 13 more planned.

“We have managed to build two bridges in 41 days using ABC techniques, on a typical bridge construction that could take one or two years. This would have never been possible without innovation.” - George Dunheimer, Assistant District Executive for Construction, PennDOT District 6

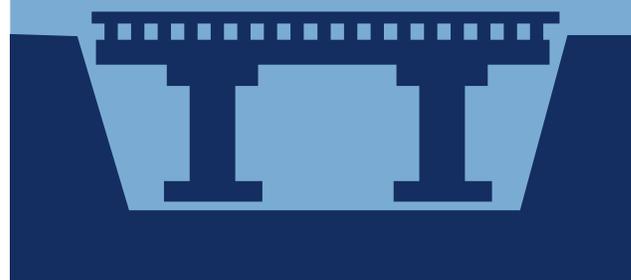
Pennsylvania Projects



Project Types

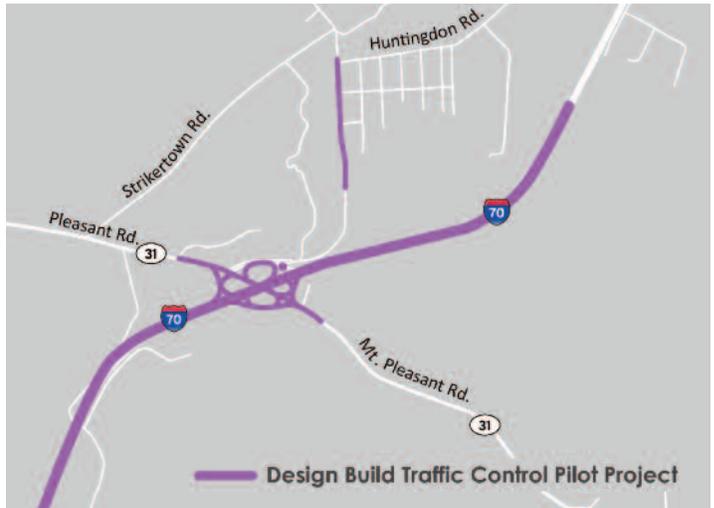
- GRS-IBS
- QCBC
- PBES
- ⊕ UHPC

PennDOT has constructed **15** bridges utilizing Prefabricated Bridge Elements and Systems with **19** more structures in design.



Design-Build Traffic Control

Through the STIC, PennDOT is working with industry partners to identify opportunities to enhance efficiency and streamline project delivery. One area that was mutually identified for improvement is the development of traffic control plans. These plans are typically developed as part of the project design process, but sometimes require significant changes as the contractor prepares for construction. In an effort to enhance communication and reduce duplicative efforts, the STIC introduced the Design-Build Traffic Control Plan (DBTCP) initiative. PennDOT is piloting this initiative in District 12 on Interstate 70 in South Huntingdon Township, Westmoreland County. The DBTCP allows the contractor and designer to work together to develop the final plan, which can result in more flexibility in selecting materials, construction methods and resources. This innovative approach allows the construction team to work collaboratively to explore efficiencies and respond to schedule changes.



PennDOT District 12 is piloting the innovative traffic control initiative on the Interstate 70 project.

e-Construction

PennDOT is leading the nation in developing e-Construction applications, which improve project delivery and performance. The Department is currently utilizing three new applications: PennDOT Project Collaboration Center (PPCC), Construction Documentation System, Version 3 (CDSv3) and mobile computing.

The PPCC is an online Microsoft SharePoint-based system that allows the project contractor to share submissions through an automated review and approval process. This system provides a secure environment for sharing construction files, improves consistency across reports, and enhances workflow and performance.

The CDSv3 system is used for field documentation and payment estimates, and provides immediate uploads into PennDOT's web-based Engineering and Construction Management System (ECMS).

PennDOT is currently using two mobile computing applications; the first allows field inspectors to access and download all documents and contracts to their devices, including specifications, drawings and

submittals. The second application allows the field inspector to complete their daily diary including payments on a mobile device and then synchronize that data to the ECMS CDSv3 system.

PennDOT has found e-Construction to be a more secure and successful way to store and distribute information. As an example, through PennDOT's Highway Construction Mobile App project, approximately 1,600 construction inspectors now use iPads with the mobile app installed to submit reports and access key documents, such as engineering drawings, contracts and design requirements.

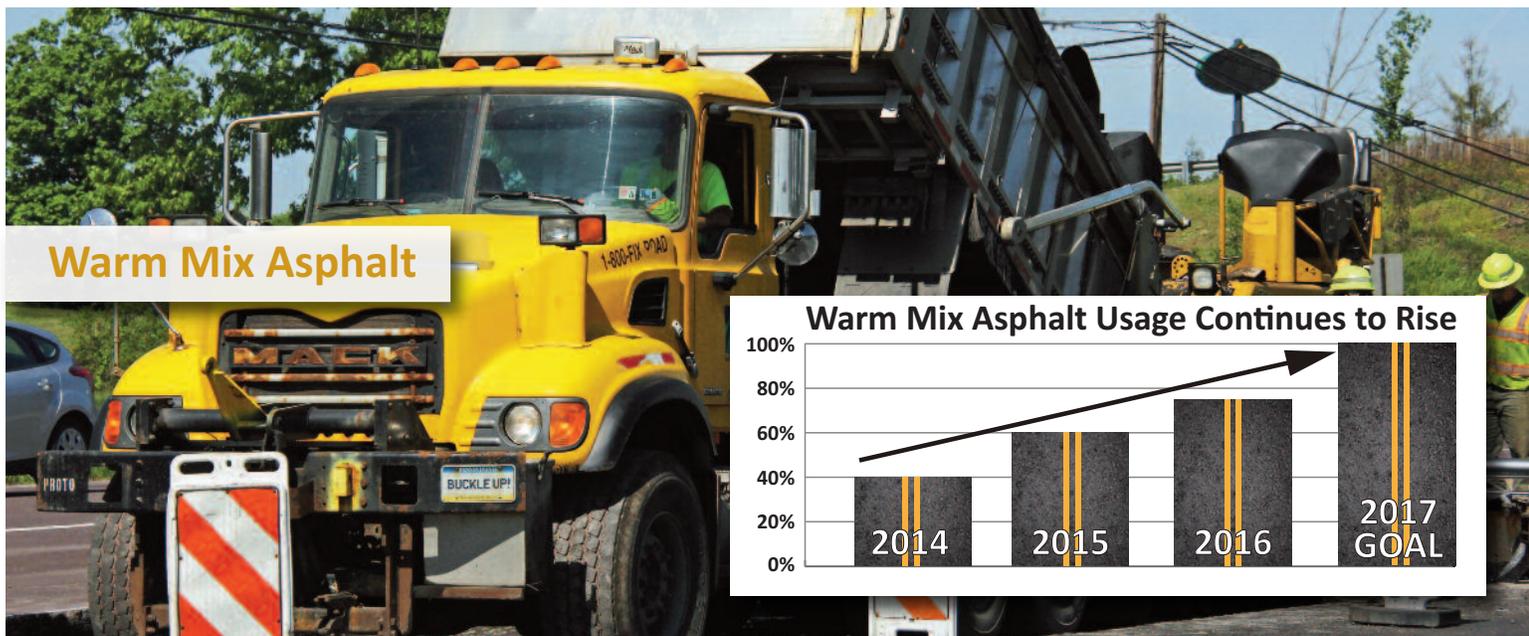
This enables the real-time data entry of construction results and eliminates the need for the inspectors to travel back to the office to input data, and brings a higher level of automation to construction activities. Inspectors are spending one and a half fewer hours each day on administrative tasks, enabling them to spend more time engaged in valuable inspection and quality assurance duties. As a result, PennDOT has already realized approximately \$22 million in savings since the app was deployed.

A blue graphic with a white icon of a hand holding a tablet. Below the icon, the text reads: '\$22 Million in savings since the Highway Mobile Construction App was deployed.' Below the text is a photograph of two construction workers wearing hard hats and safety vests, looking at tablets on a construction site.

e-Construction allows field inspectors to access project documents and provide real-time data entry resulting in significant savings.

Putting Innovation into Practice

Efforts Underway to Support Sustainability



PennDOT plans to use Warm Mix Asphalt on 100 percent of new paving projects.

PennDOT is committed to using Warm Mix Asphalt because of its environmental and pavement-quality benefits. By using lower temperatures than traditional asphalt, Warm Mix Asphalt reduces fuel consumption and lessens emissions, which enhances worker safety and reduces pollution. In 2017, PennDOT plans to include Warm Mix Asphalt on 100 percent of new paving projects, and many PennDOT districts have committed to using 100 percent Warm Mix Asphalt for Department-force work. In addition, PennDOT is working with

local governments to provide training and funding to encourage the use of Warm Mix Asphalt on local roads. For example, Warm Mix Asphalt is now eligible for Municipal Liquid Fuels Funds, an important funding source for local transportation projects. Information about the Municipal Liquid Fuel Funds can be found on the LTAP webpage under the “Doing Business” section of PennDOT’s website, www.penndot.gov.



PennDOT installed bioswales as part of a pilot project in Carlisle, Cumberland County.

PennDOT is working with local governments to achieve shared goals for managing stormwater and meeting regulatory requirements. Over the next year, the Department plans to pilot demonstration projects, develop an Asset Management Framework for PennDOT stormwater control measures, and deploy IT solutions such as mobile apps to increase inspection efficiency. Through the STIC, PennDOT has partnered with local

governments and landowners to install bioswales instead of traditional facilities (concrete curbing, inlets and drainage pipes) on a pilot project in Carlisle, Cumberland County. The pilot is being evaluated to determine if this model can be applied to other projects. Moving forward, PennDOT will continue partnering with local governments to use innovation to successfully manage stormwater across the Commonwealth.

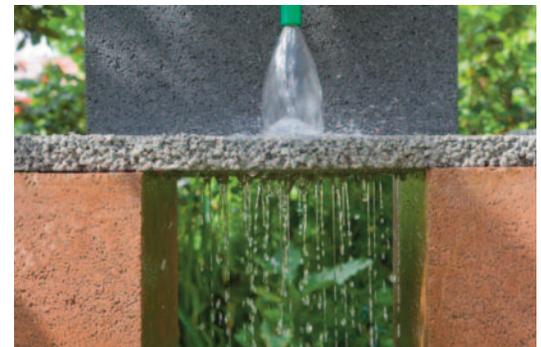


Pervious Pavement

The Department of Conservation and Natural Resources (DCNR) has constructed several pervious pavement parking lots to enhance stormwater management in various state and local parks.

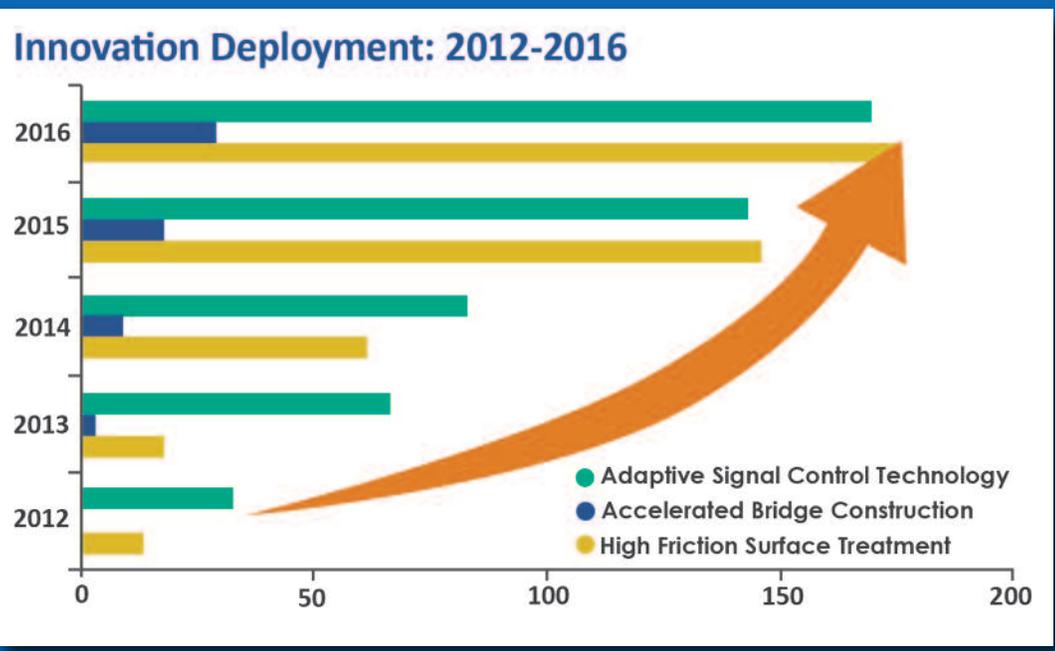
Pervious pavement is a best-management practice used to reduce stormwater runoff. Through the STIC, PennDOT has updated Publications 23, 242, 408 and 584, paving the way for this application to be used statewide. This pavement technique (asphalt or concrete) allows water to pass through the surface and temporarily settle in a stone reservoir before infiltrating into the ground or being released downstream. It is approved for use in

parking lots, sidewalks and trails, but is not appropriate for roads with high traffic volumes, heavy hauling and high rates of speed. While PennDOT is exploring options to use pervious pavement on projects, other state agencies like the Department of Conservation and Natural Resources (DCNR) have constructed several projects in various state and local parks such as a Benjamin Rush State Park parking lot in Philadelphia County.

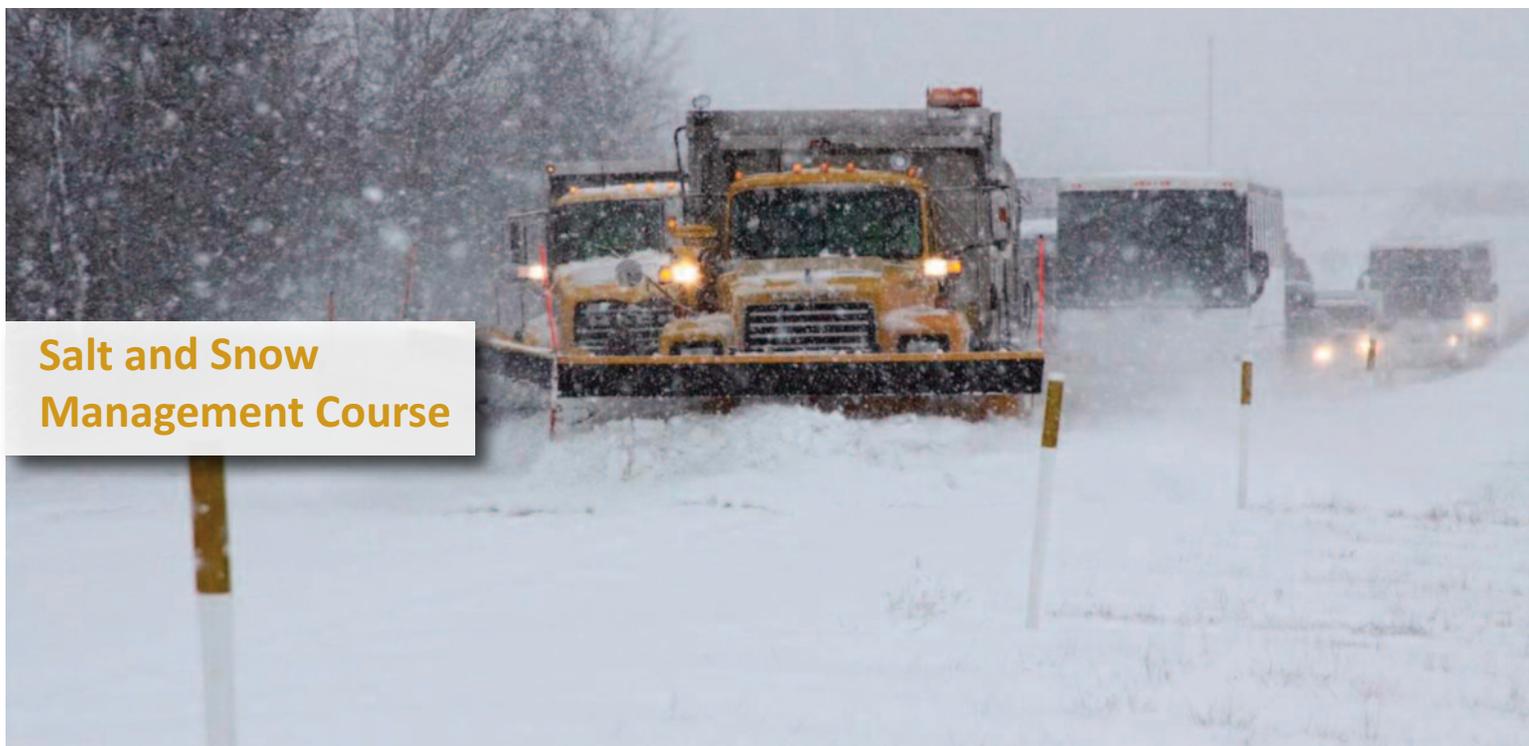


Pervious pavement allows water to pass through the surface and temporarily settle in a stone reservoir before infiltrating into the ground.

Rapid Growth in Innovation Deployment



Across the Commonwealth, PennDOT is working to deploy a number of innovations. Since 2012, there has been steady growth in the use of Adaptive Signals Control Technology (ASCT), Accelerated Bridge Construction (ABC), and High Friction Surface Treatment (HFST). On every project, PennDOT evaluates the best products and technology to solve the transportation need. STIC techniques provide PennDOT with the tools to solve complex transportation issues.



Salt and Snow Management Course

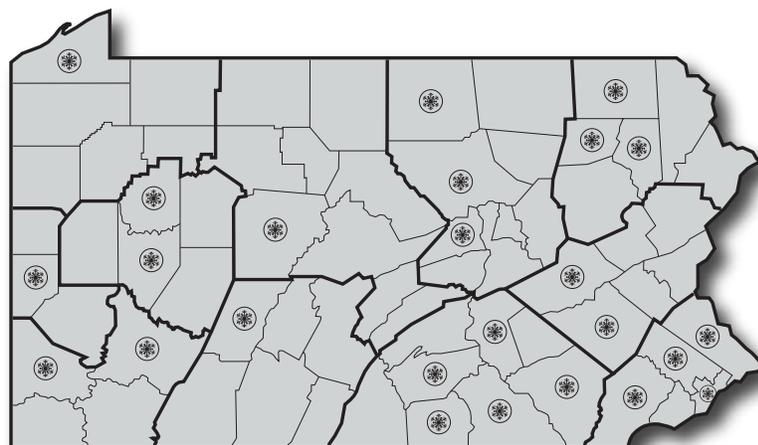
The Salt and Snow Management Course provided local governments with new methods to improve local winter maintenance operations.

Over the past year, PennDOT has taken significant steps to advance partnerships and collaborate with local governments. The Salt and Snow Management Course is a prime example of this effort. The program was funded in partnership by PennDOT's Local Technical Assistance Program (LTAP) and FHWA STIC Incentive Funding. Through the program, 29 on-site classes were held in 25 counties across the state, providing training to more than 600 participants.

At the training, attendees learned new methods to improve local winter maintenance operations and deliver on their responsibilities to provide safe, passable roadways during winter events as efficiently as possible. Municipal staff also learned about the benefits of purchasing salt through the Pennsylvania Department of General Services (DGS) cooperative purchasing program (COSTARS) and how to manage winter services when salt supplies run low. The training increased awareness, promoted operational efficiencies and equipped municipalities to better meet Pennsylvania's Municipal Separate Storm Sewer Systems (MS4) requirements.

In addition to providing hands-on training, the LTAP team developed a webinar and workbook to extend the impact of the training course by making the information widely accessible to interested municipalities on the PennDOT website. Due to the success of this initiative, PennDOT is in the process of scheduling training for 2017 at locations across the state, with 13 already planned. For more information, visit the LTAP webpage under the "Doing Business" section of PennDOT's website, www.penndot.gov.

"Through STIC, we have been able to advance our winter services programs out into the community to our local municipalities and townships." – Jon Fleming, Chief, Maintenance Technical Leadership Division, PennDOT



Through the program, 29 on-site classes were held in 25 counties across the state, providing training to more than 600 participants.

"One of the most important things I learned from the training was to be prepared. After the training, we all sat down and met as a team to develop the Winter Maintenance Plan. We made sure all of our equipment was working, up-to-date and ready to go, and we decided who is responsible for which locations and developed a call list. This training helped us become aware of what should be discussed in detail ahead of time to be most efficient." – Jay Jarrett, Borough Manager, Watsonstown Borough, Northumberland County



PennDOT District 2 Spotlight

The District 2 Innovation Day showcased innovations through poster sessions.

PennDOT District Executive Karen Michael, P.E., has established a culture of innovation in District 2, where she challenges her staff to find creative ways to integrate innovation into daily work. PennDOT District 2 recognizes that innovation is a key component of improving safety and increasing efficiency and quality. One District 2 employee that is known for looking outside of the box is Assistant District Executive for Construction Ben LaParne, P.E. Mr. LaParne has been a long-time supporter of the STIC and currently serves as the chair of the Construction TAG. We interviewed Ms. Michael and Mr. LaParne and asked them to share their strategies for success.

How do you promote innovation?



KM: I encourage employees to start small, keep your focus on improving a certain aspect or piece of a project, and testing the innovation until it is ready to grow. Another piece of advice when dealing with new ideas is to find a passionate champion who is willing to carry out the idea to completion. We are lucky here in District 2 to have a lot of passionate staff willing to put the time in to develop and test these new innovations.

What would you tell other transportation agencies considering a new innovation?



BL: I think you need to perform a risk analysis and examine the odds of failure. Determine the overall cost implications of possible failure, and then try to minimize those risks. That's what engineers are all about: looking at cost-effective ways of doing our business better. We find solutions to build projects faster and identify products that are more durable, last longer and improve overall customer service.

How do you create a culture of innovation?

BL: First, it begins with your management style. We have an open door policy. You have to empower your employees to make decisions and work with them on creative solutions. You look at what other states are doing and then give employees the flexibility and freedom to do the research, develop the solution and then support the initiative. This is what the STIC does by giving us the ability to try new ideas and to accelerate the delivery of new initiatives.

District 2 Innovation Day

On Nov. 15, the Pennsylvania STIC achieved a major milestone to complete the goal of delivering STIC training to all PennDOT districts, the Pennsylvania Turnpike Commission and the transportation industry. The Innovation Day Workshop in PennDOT District 2 marked this accomplishment by highlighting the power of the STIC and the importance of building a culture of innovation. The District 2 Innovation Day presentations and poster exhibits provided excellent examples of how ideas can begin at a grassroots level and can be championed to become institutionalized across the Commonwealth through the support of the STIC.



Every Day Counts Showcase and STIC Roundtable

FHWA selected Pennsylvania to host the event to highlight the Pennsylvania STIC as a model of success.

This year, FHWA selected Pennsylvania to host the Every Day Counts (EDC) Showcase and STIC Roundtable, which highlighted the Commonwealth as a nationally recognized model of successful implementation of the STIC initiative. The August event featured U.S. DOT Deputy Secretary Victor Mendez, FHWA Administrator Greg Nadeau, FHWA Pennsylvania Division Administrator Renee Sigel, PennDOT Secretary Leslie Richards and members of the Pennsylvania STIC. Top STIC innovations were showcased through displays and hands-on demonstrations

staffed by technical experts and STIC members. U.S. DOT Secretary Anthony Foxx spoke via video message to congratulate the Pennsylvania STIC on their successful implementation of innovations, specifically highlighting the rapid deployment of Warm Mix Asphalt in Pennsylvania. “We want to multiply your work, your success and your impact all across the country,” said Secretary Foxx. Through the FHWA EDC program, interviews and footage from the event will be shared with STICs nationwide to promote the strategies that have been effective in Pennsylvania.

“Top leadership combined with front lines of project delivery who understand the day-to-day implications; I think that is the secret sauce of this success and is what really makes the STIC so valuable in this process.” - Greg Nadeau, FHWA Administrator



Safety Symposium

On Sept. 28, 2016, PennDOT, FHWA and the Safety TAG hosted the second Safety Symposium in Harrisburg, Dauphin County. Several distinguished leaders attended the Safety Symposium, including Pennsylvania legislators and national safety experts, who discussed pressing transportation safety issues and emphasized the overall goal of zero deaths for motorists in the Commonwealth.

There were four concurrent tracks featuring: legislative priorities, driver behavior, new technology and advances in engineering. Additionally, PennDOT held an interactive presentation on the Strategic Highway Safety Plan, which gave attendees an opportunity to provide input.

A key component of the event was to promote awareness about autonomous and connected vehicles. The event featured a keynote presentation by PennDOT Secretary Leslie Richards, PennDOT Deputy Secretary Kurt Myers, and Stan Caldwell, executive director of Carnegie Mellon University's Traffic 21 Initiative, on the potential safety and efficiency benefits of this emerging technology. A highlight of the event was a unique opportunity for Pennsylvania legislators to take a test ride around the Capitol Complex in an autonomous vehicle, which was provided by Carnegie Mellon University.

The Safety Symposium provided attendees the opportunity to hear from leading experts in transportation safety.

2016 Outreach Highlights: Putting the Tools into the Hands of Practitioners

Effective communication and a robust educational outreach program are essential to expand awareness and institutionalize innovations. In 2016, the STIC hosted three Innovation Day workshops, launched a local government outreach initiative, presented on industry webinars and events, and exhibited at conferences across the state.



Eastern Regional Innovation Day

The workshop hosted attendees from PennDOT Districts 5, 6 and 8 to share best practices and innovative strategies.

This year, the STIC brought the successful regional workshop model, developed last year with western Pennsylvania Districts 10, 11 and 12, to eastern Pennsylvania. Using the same conference-style format, the Eastern Regional Innovation Day brought together PennDOT Districts 5, 6 and 8 for a regional workshop on innovation. More than 220 attendees participated in the June 7 training at Penn State University's Berks Campus in

Reading, Berks County. The workshop featured a keynote presentation by Pennsylvania Turnpike CEO Mark Compton as well as six concurrent sessions on STIC innovations. Each district presented projects that highlighted STIC innovations deployed in their regions. The workshop provided an opportunity for interactive learning and peer sharing across districts.

"The STIC is constantly evolving and innovating the work that we do. It is in our transportation systems and efficiencies that we can develop through better designs, better construction techniques and better maintenance philosophies to make us more efficient and cost effective." – Mike Rebert, District Executive, P.E., PennDOT District 5



Design Consultant Innovation Day

The Design Consultant Innovation Day brought together industry professionals from consulting firms across Pennsylvania.

The STIC recognizes that collaboration is the most effective tool to promote innovation. Professional organizations, such as the American Council of Engineering Companies of Pennsylvania (ACEC/PA) and the American Society of Highway Engineers (ASHE), participate in the STIC to bring an industry perspective and to promote awareness among consulting engineers and contractors. As part of this effort, the STIC partnered with ACEC/PA and ASHE to host the Design Consultant Innovation Day on Aug. 30 at the Lancaster Marriott at Penn Square,

Lancaster County. Approximately 150 attendees participated in the training that brought together professionals from consulting firms across Pennsylvania. Presentations were given by FHWA Pennsylvania Division Administrator Renee Sigel and PennDOT Deputy Secretary for Planning James D. Ritzman, P.E., on the importance of innovation in the transportation industry. Rod Schebesch, vice president of Stantec, delivered the keynote presentation on connected vehicles and the key role the consulting industry will play in moving this innovation forward.



Local Government Outreach Initiative

The STIC hosted the Local Government Innovation Pilot workshop to increase the awareness and implementation of innovations at the local level.

Local governments in Pennsylvania maintain more than 78,000 miles of roadways and 6,400 structures. The STIC recognizes that a key to success is promoting deployment of innovations across all levels of government. To support this effort, the STIC launched a program to enhance relationships with local government stakeholders and increase the acceptance and implementation of STIC innovations on the local level. The STIC worked closely with PennDOT's Municipal Services to develop an in-depth outreach plan, which included exhibits at conferences, collaboration with PennDOT's Municipal Advisory Committee and a training survey.

The effort culminated in a pilot Innovation Day Workshop for local government officials and staff on Nov. 2 at California University of Pennsylvania, Washington County. Session topics for the pilot workshop included: funding and partnerships, winter maintenance, innovative stormwater management techniques, and case studies on local roundabouts and smart signals.

FHWA Pennsylvania Division Administrator Renee Sigel and PennDOT Deputy Secretary for Planning James D. Ritzman, P.E., provided keynote presentations on the importance of utilizing innovations. Representatives from local municipalities spoke about the successful deployment of STIC innovations, including the installation of adaptive signals in the Municipality of Murrysville, Westmoreland County and a dual roundabout in North Strabane Township, Washington County.

Moving forward, the STIC plans to build upon this foundation and host local government safety seminars. These events will provide an opportunity for local government representatives to learn about innovations that can help enhance safety on roadways, prevent crashes and save lives in communities across Pennsylvania.

STIC e-News: Innovation in Motion

State Transportation Innovation Council (STIC)

Innovation in Motion
A newsletter with highlights from the STIC

INNOVATE
DEPLOY
EDUCATE

Transportation leaders discuss the success of the PA STIC during the EDC Roundtable event.

What is the STIC?
The State Transportation Innovation Council (STIC) is comprised of a multi-stakeholder leadership team co-chaired by the Pennsylvania Department of Transportation (PennDOT) and the Federal Highway Administration (FHWA). The STIC brings together a diverse team of transportation stakeholders to forge an environment of innovation, imagination and ingenuity to pursue specific initiatives and their rapid implementation to deliver a modern, high-quality transportation system to Pennsylvania. The STIC newsletter features highlights from the STIC business meetings. Read below for the full details.

Innovation in Motion is the STIC's electronic newsletter that provides highlights from the quarterly STIC Business Meetings.

In 2016, the STIC introduced Innovation in Motion, a new electronic newsletter to share highlights from quarterly STIC Business Meetings. The newsletter delivers updates on STIC initiatives, links to approved specifications and publications for STIC products, and recent outreach events. STIC members, TAG members and PennDOT employees receive the e-newsletter after each business meeting. For more information or to submit a question to be included in a future issue, please visit the STIC webpage, located under the "About Us" section on PennDOT's website: www.penndot.gov.

Looking Ahead to 2017

The STIC has become a national model for how to lead through innovation. Pennsylvania's secret to success is collaboration; the process of bringing together different perspectives to fully evaluate new ideas, discuss complex transportation problems and jointly identify solutions. As we look forward, the STIC plans to build on this tradition and promote new partnerships to deploy innovative products across the state. In 2017, the STIC will focus outreach efforts on engaging local governments and plans to host two local government safety seminars. The seminars will provide local officials and transportation stakeholders the tools they need to enhance safety in their communities.

In addition to promoting education and awareness, the STIC is focusing efforts on innovation deployment. The TAGs and PennDOT champions are currently working to deploy almost 80 initiatives. In many cases, this effort includes evaluating pilot projects and developing new policy or specifications. Over the next year, the STIC has set the goal to fully implement at least five initiatives. In addition, PennDOT has

elected to support the deployment of several new EDC innovations introduced by FHWA in October 2016. These include the following:

- e-Construction and Partnering: A Vision for the Future
- Automated Traffic Signal Performance Measures
- Data-Driven Safety Analysis
- Using Data to Improve Traffic Incident Management
- Pavement Preservation
- Collaborative Hydraulics: Advancing to the Next Generation of Engineering (CHANGE)

The STIC's success is due in large part to the commitment of TAG members and PennDOT champions who dedicate their time and talents to deploying products and tools. The STIC will continue to support these efforts to encourage transportation stakeholders to find creative solutions and invest in new initiatives that make Pennsylvania roadways safer, smarter and more sustainable.

Thank You to Our Members

The Pennsylvania STIC Co-Chairs, PennDOT Secretary Leslie Richards and FHWA Pennsylvania Division Administrator Renee Sigel, express their sincere gratitude to the following members for their dedication and outstanding service performed to the commonwealth as a member of the Pennsylvania STIC from 2013 – 2016:

- **Steve Howsare** – Southern Alleghenies Planning and Development Commission
- **Jim Runk** – Pennsylvania Motor Truck Association
- **Richard Sause, Ph.D.** – Lehigh University
- **Scott Sternberger** – American Council of Engineering Companies of Pennsylvania
- **Darlene Stringos-Walker** – Pennsylvania Association of Environmental Professionals
- **Nathan Flood** – Department of Conservation and Natural Resources (2015-2016)

2017 STIC Quarterly Business Meetings – Save the Dates

Jan. 31, 2017

May 10, 2017

Aug. 9, 2017

Nov. 8, 2017

Please note: The dates are subject to change.

For More Information:



State Transportation Innovation Council
ra-pdpenndotstic@pa.gov
www.penndot.gov