



THE
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SUMMER/FALL 2022



EMBRACING INNOVATION TO IMPROVE MOBILITY



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This quarterly newsletter highlights our latest efforts to improve mobility and quality of life in Pennsylvania.

As always, feel free to send story ideas or requests for information you want to see. If you're involved in an interesting or innovative project or initiative, have ever wondered about other parts of PennDOT's operations or have other suggestions, email the Communications Office at DOTcomm@pa.gov.

We hope you enjoy this latest issue!

PENNDOT'S MOVING FORWARD WITH STEM TOUR PULLS INTO CARNEGIE MELLON UNIVERSITY



PennDOT Secretary Yassmin Gramian is passionate about engaging the next generation of science, technology, engineering and math (STEM) leaders. As part of that commitment, Secretary Gramian is bringing her Moving Forward With STEM event series to academic institutions across Pennsylvania to spark discussion about how current and future leaders can collaborate to reimagine transportation, introduce safety innovations, and increase diversity and equity in transportation, government, and STEM fields.

Recently, Secretary Gramian and Carnegie Mellon University (CMU) convened a panel alongside Aurora Senior Manager of Government Relations Matt Blackburn, Pittsburgh Technology Council CEO Audrey Russo, CMU Robotics Institute Global Programs Manager Rachel Burcin, and Community College of Allegheny County Skilled Trades Department Chair and Automotive Ford Asset program professor Robert Koch, moderated by PennDOT District 11 Executive Director Cheryl Moon-Sirianni.

The event kicked off with an introduction from Stan Caldwell, Executive Director of the Traffic21 Institute, and the Mobility21 National University Transportation Center, both housed at CMU. Caldwell reminded the audience of CMU's long history in AV education and research, and said, "Access to STEM education is core to preparing the future workforce for new and emerging technologies, including AV technology.

The panelists were then introduced by Hajra Shahab, a 2020- 2022 Traffic21 Women in Transportation Fellow and President of CMU's Transportation Club. The lively and informative conversation was highlighted by the panelists sharing their views on the importance of STEM, cultivating

the next generation of transportation industry workers, and Pittsburgh's leading role in the transportation revolution through higher education institutions and transportation-related technology companies.

During the discussion, Secretary Gramian reminded the audience that as a public agency, PennDOT is not focused on research and development of advanced transportation innovations – but rather, working with the private sector to prioritize which innovations require state and federal support and manage collaboration.

"PennDOT must balance the public interest with the private sector's investment, stepping in at all phases of the process to provide proper guidance and regulations to keep the public safe. The government invests in technology in the pursuit of the public interest at-large," said Secretary Gramian.

Additionally, the panel discussed ways to increase diversity and equity in STEM and the transportation workforce – a topic that Secretary Gramian has prioritized. According to the U.S. Census Bureau, women are still vastly underrepresented in the STEM workforce. Despite making gains since the 1970s, women accounted for only 27% of the STEM workforce in 2019.

Secretary Gramian shared that she was the first female in her family to become an engineer; as a student and young professional in the 1980s, there were few educational and professional development opportunities for female engineers. Because of her experiences, Secretary Gramian committed to engaging with students and young professionals throughout Pennsylvania to help encourage more women and people of color to pursue and excel in STEM careers.

Stay tuned as Secretary Gramian continues this series of conversations with academic institutions and other stakeholders about the work being done right here in Pennsylvania to reimagine our transportation future. You can watch a video recording of the CMU session on YouTube.

WARREN COUNTY TEAMS UP WITH TECH SCHOOL

By Jill Harry, Communications Coordinator, District 1



A little collaboration led to some savings and a lot of experience as PennDOT's Warren County maintenance and students from the Warren County Career Center teamed up for two projects this spring.

In the welding shop, students repaired about a dozen leafless vane grates. A few doors down, the machine students helped fabricated and equal number of delineator drivers.

"It may have seemed like a little project to you, but it's huge to us," Warren County Maintenance Manager Adam Elms told the students during a recent visit to the school.

He estimates the grates cost about \$250 each and the drivers another \$125 apiece. But the savings goes beyond the monetary value of those items.

The county has one welder. Not having to work on the grates, means the welder has time to take on other needed projects.

Plus, it gave the students in grades 10 to 12 some real-world experience, their teacher Nate McNett said. "They worked together almost in an assembly line," McNett said of his class's grate welding efforts.

"Every grate you made will be out of the roads this summer," Elms told the teens.

The machinery teacher Colton Black also made sure all his students had a chance to contribute to the collaboration by making one of the drivers. Making the items meant writing code for a machine to turn a solid metal cylinder into a cap fit to the exact needs of the delineator base. "There's a lot of work building up to it," he said of the final 20-minute step done by the machine.

"Each foreman crew will have one," Elms told the students about the outcome of their work.

The cap is used to drive the delineator base into the ground, a process that is done manually by maintenance crews as needed throughout the summer. Without the cap, the base could become distorted as it is being hammered into the ground. Without the base, there is no delineator to help warn motorists about curves and other possible hazards along the road.

"We appreciate your efforts," Elms said. "They are important to safety."

It is the first year for the collaboration, which was born out of a visit to the career center earlier this school year.

"The school had an open house. We toured the facility, got a feel for the school's capacity and came up with possible partnership opportunities." Elms said.

Talks are already in the works about how to expand on the success of the spring collaborations.

During his more recent tour, Elms was joined by District 1 Executive Brian McNulty, who thanked the students and spoke about employment opportunities with the state.

"A lot of people don't know what we do, but it is so much more than plowing and paving roads," he said, pointing out how the grates are an example of work PennDOT routinely does. "We are always looking for good candidates for a variety of positions. Keep up in mind in the future. And thank you for helping us serve the Warren County community."

STATE PARTNERS WITH INDUSTRY TO HIGHLIGHT SUBSTANCE USE DISORDER PREVENTION, EDUCATION TOOL FOR CONSTRUCTION INDUSTRY

The Department of Drug and Alcohol Programs (DDAP) and PennDOT are joined by the Associated Pennsylvania Constructors (APC) in a discussion about substance use disorder (SUD) in the construction industry, highlighting the importance of education and prevention for employees in this field, and to remind them of available safety resources.

A recent study showed that construction workers prescribed opioids for pain had a higher risk for long-term opioid use and

for developing opioid use disorder (OUD); annually, 15% of workers who were prescribed opioids became long-term users; and, long-term users were nearly 10 times as likely to develop OUD.

The Just Five initiative is a self-paced program designed to increase awareness, reduce stigma, and provide education about SUD prevention and treatment. It is displayed as six short learning modules that each take "just five" minutes to complete.

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The interactive lessons include:

The Science of Addiction

Are You at Risk?

The Dangers of Opioids

Signs, Symptoms and Treatment

How You Can Help

The Gift of Recovery

DDAP rolled out a version of Just Five to Pennsylvania commonwealth employees in May 2021 and an additional version of Just Five is now available to all of Pennsylvania's workforce. Since roll out, the state-wide Just Five tool has had more than 11,000 new users and users have remained engaged with the lessons for an average of 13 minutes per session.

Use of the Just Five website is completely confidential and voluntary, and no personal information regarding utilization of the program is shared. It can be accessed virtually from

anywhere at any time with no registration required. The program is also available in English and Spanish and accessible for individuals with visual and/or hearing impairments.

APC is a membership organization of more than 400 contractors, consulting engineers, material suppliers, manufacturers, and others with an interest in Pennsylvania's road and bridge construction industry.

DDAP operates the Get Help Now hotline at 1-800-662-HELP (4357). The hotline is a trusted resource for individuals and/or their loved ones if substance use disorder treatment or resources are needed. The hotline is confidential, available 24 hours a day, 365 days a year and staffed by trained professionals who will connect callers to resources in their community. Callers can also be connected with funding if they need help paying for treatment.

To learn more about combating the addiction crisis, visit ddap.pa.gov.

50TH ANNIVERSARY OF THE BUREAU OF EQUAL OPPORTUNITY

By PennDOT Bureau of Equal Opportunity

The Bureau of Civil Rights, now, the Bureau of Equal Opportunity (BEO) was formed on February 15, 1972, as a division within the Bureau of Personnel. BEO was assigned the responsibility of planning, directing, and administering the Department's Affirmative Action, Equal Employment Opportunity, and Title VI programs.

Over time, BEO's responsibilities increased in the areas of affirmative action and contract compliance. Additional Affirmative Action programs were assigned to BEO, including the federal Disadvantaged Business Enterprise, On-the-Job Trainee and supportive services programs, the state Minority and Women Business Enterprise Program, now known as the Diverse Business Program, and the Americans with Disabilities Act Program.



Though BEO has gone through many incarnations, the primary objective remains the same: "to ensure fair treatment for all."

Julius McCoy, BEO's first director, was a famed basketball player, educator, and Civil Rights advocate. He is shown in the accompanying photo, as one of Pennsylvania's Department of Highway (now PennDOT) representatives, at the signing of the Federal-Aid Highway Act of 1968, in Washington DC.

The present-day Bureau team carries on the mission to ensure compliance with all related federal and state non-discrimination laws, regulations, directives, and Executive Orders in all department programs and activities by supporting PennDOT, its customers, employees, and stakeholders through program administration, education, outreach, and Civil Rights advocacy.

PENNDOT ENHANCES CUSTOMER INFORMATION WITH NEW DATABASE OF SUSPENDED INSPECTION STATIONS, INSPECTORS, DEALERS, AND ISSUING AGENTS

PennDOT enhanced transparency for customers by launching a new database showing which vehicle inspection stations, inspectors, dealers, and issuing agents are under suspension for infractions of state inspection regulations and laws as well as contract violations.

Visit the Suspended Inspection Stations and Inspectors page to see what stations or inspectors are under suspension. Visit the

Suspended Issuing Agents page for a list of dealers or issuing agents under suspension.

These webpages consist of a daily up-to-date listing of suspended inspection stations, inspectors, dealers, and issuing agents within the commonwealth. Suspensions are levied upon an inspection station and/or inspector for a violation of the Pennsylvania

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EMBRACING INNOVATION: PENNSYLVANIA'S STATE TRANSPORTATION INNOVATION COUNCIL MARKS 10 YEARS OF DELIVERING EFFICIENCY AND LOWER COSTS

By Rich Kirkpatrick, PennDOT Bureau of Innovations



Government officials who are serious about public service understand the challenge of explaining how critical adequate resources are to addressing pressing needs. This is especially true for infrastructure, and Pennsylvania was very fortunate that key federal and state leaders aligned in 2012 to commence a long-lasting transportation effort to foster efficiencies and innovation. The result was the creation of the State Transportation Innovation Council (STIC), which celebrates its 10th anniversary this year. Still going strong, STIC has built a legacy of transformative approaches to design, construction, maintenance and safety and traffic operations. STIC has brought together federal, state and local governments, industry and transportation advocates to share grassroots generated innovations that have improved services and saved taxpayer dollars.

Karyn Vandervoort, now a technology transfer specialist with the Innovation and Research section of the Federal Lands Highway Office within the Federal Highway Administration (FHWA), played a key role in creating the STIC. She said the STIC idea came from Gregory Nadeau, FHWA administrator and later DOT Deputy Secretary, a former Maine DOT CEO and a former legislator.

"It goes to the history, timing and aligning of the stars that happened all at once," Vandervoort said. The STIC idea grew from FHWA's Every Day Counts program, which was intended to drive grassroots innovation efforts.

"The original vision as put out by FHWA was to bring public and private transportation stakeholders and academia together to evaluate existing innovations not widely used and spearhead their development," said Renee Sigel, former Pennsylvania division administrator for FHWA, who also was instrumental in advancing the Pennsylvania STIC.

"They knew there had to be more to it than FHWA pushing things out," Vandervoort said. Hence, she added, the notion

emerged of a state council that would foster innovations locally, and the states would have leeway on how it would be designed.

Nedeau contacted all the FHWA division offices and encouraged every division office to work with the states to form the innovation councils.

Part of the stars aligning was Vandervoort was just returning from maternity leave and her husband, Barry Schoch, P.E., was the new Pennsylvania Transportation Secretary. Vandervoort was a management analyst and research program coordinator at the time working under Sigel.

"The leadership in our state was such that they were open to the encouragement of FHWA to have this communication," Vandervoort said. "Both Barry and Renee and her deputy were all of the same spirit of open communication, sharing resources and sharing knowledge. That was Barry's mantra: 'to find efficiencies' and this fit right in."

Schoch, now senior vice president and regional manager for KCI Technologies, said he first heard about the concept from Sigel when she was addressing a meeting of the Pennsylvania Highway Information Association (PHIA).

"We were interested in getting a transportation funding bill done, and in my estimation, we needed to aggressively impress the Legislature that we were making the best use of every dollar we had," Schoch said.

"Fortunately, Pennsylvania went gangbusters on that (STIC) and later Pennsylvania advanced to using STIC to research new opportunities for achieving new innovations and new ways to deploy these innovations," Sigel added.

Schoch noted that every government agency pursuing programs to make life better argues that they need more resources.

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"My idea was we had to differentiate ourselves," he said. "We had to aggressively head off the question about whether we were making good use of our resources and show we were using every opportunity to improve our efficiency and get the most dollars back into the infrastructure."

He added that STIC fit nicely with the PennDOT innovation initiatives at that time, Next Generation, Mapping the Future and the IdeaLink employee engagement program, which was a renewed effort to generate money-saving ideas from employees at all levels of the organization.

Participants read over materials at a STIC meeting. "The idea was to get the people doing the work to suggest things to make the work more efficient and then communicate that to the Legislature and say, 'Look, we are as an agency making efficient use of every dollar you give us.'"

At PennDOT, then Deputy Secretary for Highway Administration Scott Christie assigned Chris Reilly (now Norris) and Rich Heineman of his team to work with Vandervoort on designing the STIC structure and making it happen.

"The three of us tackled that and got it off to a good start," Vandervoort said. "Two to three years in, it was transferred to PennDOT's Bureau of Planning and Research, where Mike Bonini was charged with running the program for PennDOT."

According to Bonini, now director of PennDOT's Public-Private Partnership (P3) Office, the charge of the STIC was to "establish a process for not only the identification of innovations but also to make sure that our partners across the industry were at the table to identify innovations as well as which ones to deploy."

"We put together Technical Advisory Groups (TAGs) to involve as many people as possible in the innovation identification, evaluation and deployment to really look at how do we improve the system, the security, the mobility of transportation users and how to we get as many people as possible from our partners organizations interested in helping us really carry that mantel forward," Bonini added.

Shortly after Bonini and his team took charge of running the STIC, McCormick Taylor, an engineering firm, was hired to assist with STIC communications. "That was when things took off," Vandervoort said.

"I wanted to create something that was sustainable and left a legacy and not just something that would vanish at the turn of the administration at either the state or national level," Vandervoort said. "After 10 years, the proof is in the pudding."

PennDOT's Bureau of Innovations, under the direction of Steve Chizmar, assumed administrative oversight of the STIC in 2016. Led by STIC Manager Anja Walker, the STIC continues its mission and has evolved and grown through an enhanced organizational structure with robust TAGs and a streamlined innovation development process.

A vital component of the STIC is the bottom-up approach it generates for creating innovations, Vandervoort said.

"I thought it best that it be grassroots based," she said. "There

are a lot of stars out there among the PennDOT districts. We needed a forum for them to shine. The STIC gave a forum for people to present ideas and innovations. It was grassroots up and also included a communications piece at the highest level of everything in the transportation industry. It matters to bring all of them together to discuss challenges."

STIC brought together FHWA, PennDOT, the Pennsylvania Turnpike Commission, local government and academics from Penn State, the University of Pittsburgh, and Carnegie Mellon University.

"Another mantra of mine was that peers learn best from peers," Vandervoort said. "We created a structure where we could talk and have ideas get traction to rise to the attention of and get priority funding from the executives in the various industry sectors."

Schoch said it was crucial to demonstrate from the start that STIC meetings were not simply a routine exercise.

"Over the course of my career, I sat on a lot of committees formed by agencies and the academic sectors," he said. "They were there to check a box, and you can tell the difference. The difference in the STIC was that all of us at federal highways and PennDOT were fully committed to it. We don't just have meetings. My role was to make it meaningful and put money behind it and make sure the staff knew this was important to the executives to implement."

Schoch went on: "To me, STIC was one of the foundational elements of what we were trying to accomplish when I was at the department-- Next Generation, IdeaLink, Mapping the Future. All fit together in driving innovation into the organization."

Among the STIC's legacy is the long involvement of Turnpike CEO Mark Compton, who has brought the same innovation culture to the Turnpike. There are other examples, Vandervoort noted, adding: "People have gone on to various roles and carried the STIC's positive spirit with them."

Compton noted that bringing innovation within a government context can be challenging.

"The risk/reward ratio is upside down," he said. "Anybody in the organization who sticks their head out to innovate, if you are successful, you get a thank you; if you fail, a lot of different things can transpire.

"STIC enabled all organizations to innovate together and get out on the limbs together. That cover has meant a lot to the industry."

Compton said the Turnpike has started its own internal innovation council, adding, "We've taken the lessons we learned at STIC and are doing them internally at a more robust level. The opportunity with STIC to collaborate and innovate is really trying to set a culture, and we appreciate what the STIC has done for the Pennsylvania Turnpike."

Among the STIC successes was a Safety Symposium, "which brought together legislators with PennDOT, other agencies and advocacy groups to discuss safety innovations, such as work

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zone cameras for speed enforcement and ignition interlock as part of DUI enforcement," Vandervoort said. "Bringing those folks together in an awareness forum saved some lives."

Schoch noted that one of the TAGs formed as part of STIC championed innovative high friction surface treatment, which helped reduce run-of-the-road crashes.

"It was a remarkable innovation, and although it cost more, it had a remarkable impact on safety," he said. "We wouldn't have been aware of it if not for STIC. It saved lives."

Sigel said the new surface treatment innovation was especially important for her. She noted that in just one case, on Route 611 in Northampton County, application of the treatment reduced crash frequency by 100 percent.

"It saved roughly one life each year for every 15 locations where it was applied," she said. "That is huge. That is one more person who went home to their family each year. For me, that is just a fabulous innovation ... saving lives, so that was near and dear to my heart."

Another important innovation was pervious pavements, which facilitates stormwater runoff in a way that minimizes damage to streams and waterways.

The state Department of Conservation and Natural Resources (DCNR) used the innovation for trail heads in areas it controls.

"Without a forum like this (STIC), another state agency would never know about it (the innovation) and put it into practice," Vandervoort said.

Another benefit from STIC was the effort to bring training opportunities across PennDOT's far-flung system of 11 engineering districts.

"Examples of innovations were presented in showcases at individual districts and statewide Innovation Days were also held to spread details of the new approaches," Vandervoort said. "Over the years, we've had over 2,000 to 2,500 people attend various STIC Innovation Days at various districts that brought innovation to them. Construction and design and environmental and maintenance crews could get together to share successes and failures."

She said surveys of participants were extremely positive and the usual response was, "'This is best training we've had in years. Thanks for coming and do more of these.' That type of thing made a difference."

The involvement of local governments, who manage an estimated 78,000 linear miles of roadway and more than 6,600 bridges longer than 20 feet, was crucial to the STIC's success as well.

"People don't see a state or local road, they see roads," Schoch noted.

"PennDOT needs to help the locals and others who don't have the budget or resources to deliver service more efficiently," he added. "A lot of things came up related to local governments (at STIC), and innovations helped them save money."

David Sanko, executive director of the Pennsylvania State Association of Township Supervisors, agrees that STIC has helped local governments with their transportation responsibilities.

"It has been a great opportunity to have innovative approaches adopted more quickly than going through the traditional bureaucratic process," he said. "It enabled there to be boots on the ground for input for real life problems that were able to be addressed." One of his favorite STIC-generated innovations is the Geosynthetic Reinforced Soil-Integrated Bridge Systems (GRS-IBS). This is an accelerated bridge construction method that allows PennDOT, the Pennsylvania Turnpike Commission and local municipalities to build bridges quickly and cost effectively, using local workforce personnel and equipment to maximize efficiency.

"That's a big deal," Sanko said. "It enabled you to use your own staff, (and) lower costs. It was a way of getting quality projects done quickly and affordably."

"As folks are sitting around the table, when you are working, you are hearing ideas and being exposed to solutions that were used somewhere else, all tested, you don't have to experiment with them, and you know what works or not and learn things you had never thought of," he added. "It's a win/win on the innovation side and good utilization of taxpayers' money at all levels. You are able to do a lot of things faster and more affordably."

Clint Beck, director of Programs and Performance Management in FHWA's Pennsylvania division, helped set up the first STIC TAG. The aim of STIC, he said, was "to formalize the process of taking innovative ideas and implementing them quickly."

"The transportation agencies had two roles, to deliver projects and another role to get better at what they do, and innovation was the way to do that," he said. "Putting together a large team that formalized that idea; gathering information and ideas that are working well in one place and then move them quickly up the chain of command and then implement quickly and get approval done quickly."

Beck said some of the challenges initially touched on communications and understanding the role each person involved in the STIC played. There was a lot of work determining roles and understanding how to move innovations through the chain of command.

How has the STIC fared in Pennsylvania?

"I think it's done quite well," Beck said. "It quickly overcame organizational challenges and quickly moved through several ideas and innovations. The STIC has applied for FHWA STIC Incentive Program funding each year, funding to kick start projects that otherwise would have sat stagnant."

Noting that Pennsylvania was one of the first states to establish a STIC, Beck said: "PennDOT embraced this from the very beginning from all levels that made it a success from our viewpoint at FHWA. "

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Looking ahead, Sigel said, there will be increased focus on technology-based innovations, rather than merely construction or process-related improvements. She cited the growth of electric vehicles as an example of the advancing technology.

"New technology is still continuing to grow exponentially in our society and over the next 10 years that is not going to change," she said. "STIC can help identify where these new technologies can be deployed to address challenges such as congestion, safety and equity. I think the STIC in the next 10

years should definitely be looking at focusing on innovation in the technological aspect that is coming about. It can be a very, very effective forum for addressing these new challenges and the emerging technologies."

Editor's Note: This is the first in a series of articles celebrating the 10th Anniversary of the Pennsylvania State Transportation Innovation Council. Keep an eye out for additional articles throughout the year highlighting successful STIC innovations over the past 10 years and how the STIC has been innovating transportation in Pennsylvania more recently.

PENNDOT EMPLOYEES RECEIVE GOVERNOR'S AWARDS FOR EXCELLENCE

By Bureau of Office Services



Several PennDOT employees were recently recognized with Governor's Awards for Excellence in recognition of their efforts on two critical department initiatives.

Former Policy Director (and current Infrastructure Implementation Coordinator) Natasha Fackler and Former Executive Policy Specialist Emily Watts were honored for their work in developing the first-ever Pennsylvania Litter Action Plan. They shared the honor with staff from the Department of Environmental Protection (DEP) as well.

Through coordination with over 100 stakeholders, the employees spearheaded the development of an actionable plan with the goal to shift the focus of Pennsylvania's response to litter from cleanup to prevention. The plan includes resources and suggestions for the General Assembly, state agencies, local governments, and the public.

PennDOT spends roughly \$14 million each year on litter cleanup statewide, and DEP has funded "Pick Up Pennsylvania" community litter cleanups and illegal dump site cleanups for over two decades, supporting volunteers in removing many tons of trash from the land and waters.

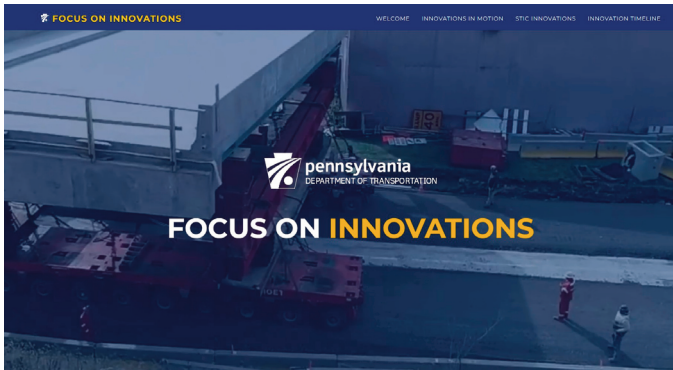
John Taylor, Ian Detamore and Aaron Wolf, who work in Multimodal Transportation's Bureau of Public Transportation,

were part of a team of employees from Department of Human Services (DHS) and the Office of Administration (OA) recognized for their efforts to develop Find My Ride (FMR) Apply, an easy-to-use online tool that allows individuals in most Pennsylvania counties to apply for transportation assistance programs.

Since its rollout of FMR Apply in May 2021, benefits to transit agencies, PennDOT, Department of Human Services, and customers has been considerable. Customers do not need to determine what programs they are eligible for, and this, coupled with the user-friendly application has resulted in an increase in applications submitted. Automatic data validation within the application has resulted in improved data accuracy, saving transit agencies time and money in processing applications. Transit agencies can process applications more efficiently, which allows transit users to access benefits more quickly.

The Governor's Awards for Excellence recognize exemplary job performance or service that reflects initiative, leadership, innovation and increased efficiency. The PennDOT honorees was among 50 employees from 12 state agencies honored by Governor Wolf at a ceremony today for exceptional accomplishments in 2021. Congratulations to all the winners!

TRANSPORTATION INNOVATIONS IN PENNSYLVANIA SAVE LIVES, CREATE EFFICIENCIES



In April we released PennDOT's Focus on Innovations report, which showcases innovations recently developed and implemented across the organization.

As you may or may not know, innovation at PennDOT stems from many sources, including employee-driven innovations councils and committees, an employee suggestion system (IdeaLink); a smart practice sharing tool (WorkSmart); the State Transportation Innovation Council (STIC); as well as everyday suggestions and solutions discovered by PennDOT employees.

"Innovation is absolutely essential to our operations, and we have seen how celebrating our successes acts as a continuous driver of new ideas across the department," PennDOT Secretary Yassmin Gramian said. "One of the best things we can do to continue cultivating innovation at PennDOT that will ultimately benefit our customers is to encourage and recognize the amazing talents of our workforce; this publication helps us to do just that."

Focus on Innovations entries are available in an interactive format on the department's website and categorized by topics that include Construction, Maintenance, Safety and Traffic Operations, Driver and Vehicle Services, Aviation and Public Transportation.

Some examples of the latest implemented innovations include:

An Adopt A Highway supply pick-up box, constructed and strategically placed so Adopt A Highway crews can safely retrieve supplies at curbside locations;

Automated Flagger Assist Devices (AFAD), which allows flagging to be conducted by a single crew member, from a safer location, at one-tenth the cost per day; and

Paint truck exhaust stacks that are raised to prevent the compressor from overheating and have nearly eliminated equipment down time.

The report also features the more recent progress and successes of STIC. Since its inception in 2012, the STIC remains committed to supporting and promoting the development and deployment of the Federal Highway Administration's Every Day Counts innovations as well as others that exist at the state national, and international levels that be well-suited for implementation statewide.

The STIC advanced several innovations in 2021, including a Certified Concrete Finishers Course, an innovation that requires 60 percent of concrete finishers certified on PennDOT projects, which helps eliminate concrete finishing mistakes and reduce the amount of rework due to concrete scaling.

Predictive Work Zone Analysis (FREEVAL-PA), also advanced in 2021, is an innovative analysis tool based on the Highway Capacity Manual that can be used to analyze work zones' effect on traffic flow. It guides PennDOT's decision-making process for implementing lane closures, crossovers, or other traffic control measures and helps minimize congestion and delays during construction or maintenance projects.

The Pennsylvania STIC brings together a diverse team of transportation stakeholders to forge an environment of imagination and ingenuity to pursue specific innovations and their rapid implementation, and to deliver a modern and high-quality transportation system to the citizens of Pennsylvania.

I-83 EXIT 4 DIVERGING DIAMOND INTERCHANGE IS AN INDUSTRY HIT

By Dave Thompson, Community Relations Coordinator, District 8

When the state's third (and PennDOT District 8's second) Diverging Diamond Interchange (DDI) opened to traffic last year at Interstate 83 and Route 851 (Exit 4) in York County, area residents were generous in expressing their satisfaction with every aspect of the project. They were pleased with how the approximately \$30 million project progressed through design and construction and the responsiveness of PennDOT and its contractors to any issues that arose.

They were particularly happy with the results. In addition to reconfiguring the interchange to improve safety and operations, the project also included esthetic improvements



– landscaping, a welcome sign, a U.S. and commonwealth flag display, and patriotic artwork in an abutment in the form of a Liberty Bell logo with a quote from the Declaration of Independence, "Life, Liberty and the Pursuit of Happiness". As the first exit on I-83 north of the Maryland border, the Exit 4 DDI is a showroom-quality interchange that serves as a beautiful gateway to Pennsylvania.

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Vehicle Equipment and Inspection regulations and/or Emissions Inspections regulations. Suspensions imposed on a station or inspector are the result of violation(s) uncovered during audits or from investigation(s) into complaints regarding a station or inspector. Suspensions only affect a business's ability to perform vehicle safety and emission inspections, not their ability to offer other services. Dealers and issuing agents can be suspended for a variety of reasons when they infringe on the provisions of their contract with PennDOT.

Approximately 17,000 safety inspection stations and approximately 7,700 emission inspection stations are registered in Pennsylvania, monitored by PennDOT Quality Assurance Officers (QAOs). Through regularly scheduled and unannounced visits to inspection stations, these QAOs ensure compliance with the regulations governing the inspectors, vehicle safety inspection and emissions inspection programs as well as the administrative requirements of these programs. They also investigate customer complaints against inspection stations or inspectors reported to PennDOT.

There are approximately 8,000 dealers or issuing agents in the commonwealth contracted to provide services to customers on behalf of PennDOT. They are monitored by PennDOT's Driver and Vehicle Services' Regulated Client Services Section through unannounced audits, scheduled site inspections, analysis of internal reports of title transactions and public reports of suspected wrongdoing via the website.

In cases involving criminal activity by inspection stations or agents, PennDOT turns to the Pennsylvania State Police for investigations.

For concerns regarding inspection stations within the 42 non-emission inspection counties, call 717-787-2895. For concerns regarding inspection stations within the 25 emission inspection counties, call 800-265-0921. You may also call or email the PennDOT tip line at 717-705-9913 or email RA-pdPennDOTTip@pa.gov. Customers with concerns with agents should call 717- 412-5300.

CHILD PASSENGER SAFETY IN RECREATIONAL VEHICLES

The COVID-19 pandemic has changed many aspects of our lives, including the way we travel and recreate.

There has been a shift toward outdoor recreation since the beginning of the pandemic, and a study conducted in March 2020 concluded that 68 percent of people feel safe traveling in a personal vehicle. This has created a unique situation where recreational vehicles (RVs) are gaining popularity.

An RV is a vehicle that combines transportation and temporary living quarters for travel, recreation and camping.

Roughly 11 million U.S. households currently own an RV, and throughout the pandemic, RV sales soared while bookings of RV rentals also increased significantly.

Car Seats and Recreational Vehicles: Beware of the Risks

Car seats are designed for the FMVSS 213 bench and motor vehicle seats that meet the Federal Motor Vehicle Safety Standard definitions of "passenger car" and "multipurpose passenger vehicle." An RV is neither.

The Manufacturers Alliance for Child Passenger Safety (MACPS) definitively discourages the use of motorized RVs for the transport of children, and the National Highway Traffic Safety Administration (NHTSA) does not currently crash test RVs with adult or child occupants.

While RVs may meet some Federal Motor Vehicle Safety Standards, they are only required to comply with seat belt standards for the front passengers – not for any rear occupants. Though an RV's rear occupant seat belts are usually bolted to the floor, the biggest concern is that the wooden seat structure where a passenger sits will fail and cause injury in a crash.

For these reasons, it is not recommended to rely on car seats to protect children while travelling in recreational vehicles.



Recommendations for Parents

Child safety restraint systems, such as car seats and booster seats, should never be used in rear-facing or side-facing bench seating. As such, we recommend using a non-motorized, towable RV. Children can be secured in the passenger vehicle that is pulling the RV.

For anyone who doesn't have a towable RV, the second-best option is to have an adult drive a second car behind the RV. Instead of riding in the RV, children will ride in the vehicle where they can be restrained properly.

The third-best solution would be to select an RV with custom seats built in that comply with federal seat belt standards.

The National Highway Traffic Safety Administration (NHTSA) does not currently crash test RVs with adults or child occupants. For these reasons, it is not recommended to rely on car seats to protect children while travelling in recreational vehicles.

For more information about child safety restraint systems in recreational vehicles, contact your child's car seat manufacturer and your RV manufacturer directly.

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Now the construction industry is learning what the locals have known all along. The project won multiple awards for its design and construction.

For design, the project received the American Council of Engineering Companies – Pennsylvania (ACEC-PA) 2022 Diamond Award and the ASHE-NE 2022 Regional Award, while it was the recipient of the APC-PA TQI Award for construction.

Major participants in the project included design consultants Gannett Fleming, Inc., of Camp Hill, and prime contractor Kinsley Construction, Inc., of York. District 8 Senior Project Manager Mark Malhenzie guided the project through design. District Assistant Construction Manager Vaughn Schlachter oversaw the project through construction until he was promoted and turned the project over to Assistant Construction Manager Mike Reeder.

They had their work cut out for them. The project included the replacement of the northbound and southbound bridges that carry I-83 over Route 851 with two-span structures allowing enough clearance for Route 851 to be widened to four lanes and realigned into the DDI configuration. The on- and off-ramps were lengthened and reconstructed and a culvert that carries a creek beneath the interchange was replaced.

The project was complex, with constraints on its footprint due to

surrounding land uses, steep terrain, and environmental features, including adjacent businesses, wetlands, a public wellhead, and a stream. This required a great deal of planning to maintain traffic and accommodate construction activities.

During construction, a priority was placed on good communication with local officials, residents and emergency responders. If an issue cropped up, it was handled promptly. Best of all, the project achieved its objective of reducing congestion and improving safety at the interchange. As of this spring, emergency responders reported no major crashes since the DDI opened to traffic.

"This new interchange is a result of our continued efforts to provide those who live and work in Pennsylvania with a safe, modern transportation network," Governor Tom Wolf said on the day the interchange opened to traffic. "Transportation improvements such as this are essential to the state's economic health and overall quality of life."

"PennDOT is committed using innovative solutions to improve the safety and efficiency of highways," Transportation Secretary Yasmin Gramian said. "The diverging diamond interchange at Interstate 83 and Route 851 will increase safety by reducing the number and severity of crashes and improve the efficient movement of traffic in southern York County."

PENNDOT HIGHLIGHTS MOTORCYCLE SAFETY IN THE SUMMER, BUT IT REMAINS A PRIORITY ALL YEAR

By Craig Yetter, Community Relations Coordinator, Driver and Vehicle Services

With both temperatures and the number of motorcycles travelling on Pennsylvania roadways on the rise, drivers and motorcyclists are reminded to share the road, obey traffic laws and watch out for one another throughout the riding season.

The Pennsylvania Department of Transportation (PennDOT), Pennsylvania State Police (PSP) and motorcycle safety advocates joined forces recently to promote and encourage the safe operation of all vehicles.

"As more and more people enjoy the fun and excitement of motorcycling, it is in the best interest of both motorcyclists and motorists to share the road safely," said PennDOT Secretary Yassmin Gramian. "Staying aware while driving or riding, obeying speed limits and being responsible will help lower fatalities and injuries from unnecessary crashes."

There were 3,578 crashes involving motorcycles on Pennsylvania roadways in 2021, resulting in 226 fatalities. Crashes rose by more than 150 from the 2020 number of 3,404, while fatalities also rose from 217 in 2020.

"We encourage riders to slow down, ride defensively, and remember to not drink and ride in order to keep themselves upright and ready for their next riding adventure," said Major Robert Krol, director of the Pennsylvania State Police Bureau of Patrol. "Enrolling in a free safety training class can help motorcycle enthusiasts of all skill levels refresh their skills or even learn some new techniques."



Through the Pennsylvania Motorcycle Safety Program (PAMSP), Pennsylvania residents with a motorcycle permit or license can earn a motorcycle license or refresh their skills through a variety of training to help develop safe riding skills, no matter how experienced or inexperienced. The courses include: the Basic Rider Course (BRC); the Intermediate Rider Course (IRC); the Advanced Rider Course (ARC); and the 3-Wheeled Motorcycle Basic Rider Course (3WBRC). Successful completion of a basic or intermediate course waives the requirement to take a skills test at a PennDOT Driver License Center and automatically earns the permit holder their motorcycle license. Motorcycle permit holders who complete a 3-wheel basic course will earn a motorcycle license with restriction prohibiting the operation a of 2-wheel motorcycle.

PennDOT has contracted with several third-party motorcycle training providers to offer these safety training classes free of charge to residents with a motorcycle permit or license.

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GOOD THINGS TAKE TIME; COUNTY OFFICIALS CELEBRATE CNG FACILITY OPENING IN ERIE

PennDOT's been joining celebrations of CNG stations opening across the state, including this one in Erie, part of our CNG P3 Public-Private Partnership with Trillium CNG, who is responsible for operating and maintaining the station until April 2037. To date, nearly 11 million gas gallon equivalents have been pumped into involved transit agency vehicles, which has resulted in nearly \$7.6 million in savings when compared to the cost of purchasing diesel fuel.



PENNDOT URGES PENNSYLVANIANS TO REVIEW TRANSIT OPTIONS AND APPLY FOR TRANSPORTATION ASSISTANCE PROGRAMS, HIGHLIGHTS IMPORTANCE OF ACCESS TO HEALTH CARE AND JOBS

PennDOT and Human Services (DHS) urge Pennsylvanians to use Find My Ride (FMR) found at findmyride.penndot.pa.gov to learn about public transit options and apply for transportation assistance programs. The participants underscored transit's critical role in getting people to work and medical appointments while connecting them to their communities.

Public transportation services are available in every county in Pennsylvania, including:

Shared ride service in all 67 counties;

Fixed route bus service in 49 counties; and

Fixed route rail service in Philadelphia and Pittsburgh.

Citizens are encouraged to use FMR Apply, an online tool which was developed collaboratively with transit agencies and streamlines the application process for the five largest transportation assistance programs in the state, including the Senior Shared Ride program, the Medical Assistance Transportation Program (MATP), ADA complementary paratransit, the Persons with Disabilities program and the Free Transit Program. Additionally, FMR Apply allows third-parties, such as a family member or healthcare provider, to apply for

services on behalf of a rider.

Collectively, 24.4 million trips supported by these programs were provided to Pennsylvanians in the 2020-21 fiscal year. An additional 141 million trips – including 17.7 million free senior trips – were provided through fixed route service in the 2020-21 fiscal year.

Accessibility was a key focus when developing FMR Apply, with emphasis on validating color contrast, use of captions, use of assistive reader devices, sentence length, and reading level to evaluate the forms accessibility. User feedback has been extremely positive and has been demonstrated by the continuous increase in online applications.

FMR Apply leverages Keystone Login, a single, secure user credential that can be used to log into multiple Commonwealth online services. The team that developed FMR Apply was recently recognized with a Governor's Award for Excellence.

Find My Ride's education and application modules were developed over two years, made possible by \$1 million from the Federal Transit Administration and \$1 million in state transit funding.

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Interested individuals are encouraged to contact training providers directly for class availability, as additional courses may be offered, and providers may offer additional walk-in or waiting list opportunities when individuals fail to report for the training.

Classes can be scheduled at multiple training sites throughout Pennsylvania. Class schedules are coordinated by each third-party training provider for their individual locations. Additional information can be found at www.penndot.pa.gov/PAMSP.

To ensure that only properly licensed riders are operating on Pennsylvania roadways, under Act 126 of 2013, after securing

their first motorcycle learner's permit, people may only reapply for a permit up to three times in a five-year period.

Once the person's motorcycle learner's permit expires, the individual may retake the knowledge test and reapply for a new permit. If a permit holder is unsuccessful in obtaining a motorcycle license after the third permit reapplication, they must wait the entire five years from the initial issuance of the permit to get another one. This law is aimed at preventing the practice of continually extending the permit without retaking the knowledge test or ever taking the skills test and obtaining a motorcycle license.

CHRISTA NEWMASER, MAINTENANCE SERVICES EXECUTIVE IS MAKING WAVES FOR PENNDOT WOMEN

By Mandi Mladenoff, Communications Office Intern



Christa Newmaster, a Highway Administration Program Manager 3 for the Bureau of Maintenance, is a legacy to the department — a real-life wonder woman.

As a second generation PennDOT employee, Newmaster has dedicated 22 years to a variety of positions. She fondly remembers visiting her father at work and watching him design at his

drafting desk. She credits those experiences as her motivation to follow in her father's footsteps.

"To me, it just seemed like art, but there are times when I see old plans and I can see my dad's handiwork and it always brings a smile to my face," she said. "District 8 has always felt like home to me."

Starting as a clerk typist in the Fleet Management Division, Newmaster is now in her 13th position within PennDOT. Since being interviewed for this article, Newmaster has been promoted to Highway Administration Program Manager 3 for the Bureau of Maintenance in PennDOT's Central Office.

She enjoys the constant change that comes with working for

maintenance. She never knows what kind of new challenges or tasks a day could hand her. She cites the people who surround her every day to be a great motivator.

"We have such a diverse workforce and it is a great experience to work with everyone, learn what they do and how they impact your work, as well as how you impact their work," she said. "It is great to be part of such an amazing team."

Newmaster has had many mentor figures at PennDOT over the years. One of the lessons she learned early on was to ask questions and be open to learning as much as possible. Her mentors provided ways for her to get involved in tasks outside of her area or work and challenged her to grow and learn.

"I am so thankful for all of my employees and how hard they work each and every day," she said. "Someone once told me that you are only as good as your team, and I want you all to know I have an amazing team."

Outside of her work family, Newmaster has been married for 26 years to her husband Chuck. She has passed on her wonder woman characteristics to her two daughters, Kyra and Alicia. She enjoys outdoor activities and going to the lake on the weekends.

"To me, PennDOT is more than a job, more than a career, it is family and it is my home," she said. "My hope now is that I will have the opportunity to give back to others what has been shared with me over the past 22 years working for the department."

PENNDOT HIGHLIGHTS 2022 CONSTRUCTION SEASON PLANS, BIPARTISAN INFRASTRUCTURE LAW BENEFITS

With construction and maintenance work underway across Pennsylvania, we recently outlined 2022 plans in each of PennDOT's 11 engineering districts. Each region's benefits from the federal Bipartisan Infrastructure Law (BIL) were also highlighted.

The BIL will provide at least \$608.5 million in additional investment this year, supporting and accelerating many projects. The department anticipates putting out contracts for \$2.5 billion in work this year, complementing work completed every day by department crews.

Following are the announcements of investments, BIL impacts, and key ongoing and anticipated projects across our regions. To keep your finger on the pulse of PennDOT news near you, subscribe to news from the applicable region.

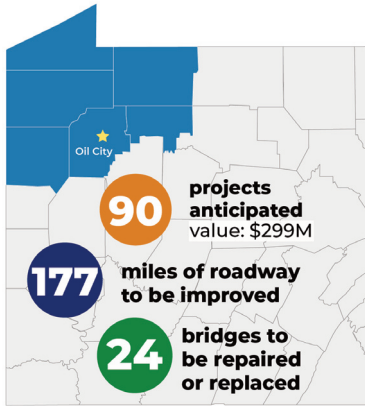


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2022 Construction Preview

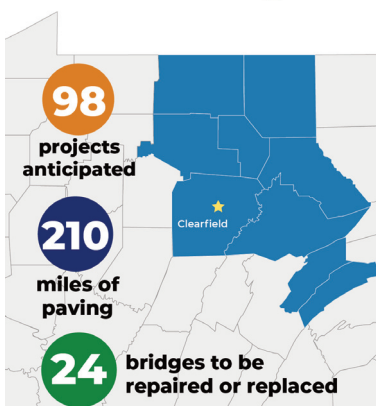
District 1 



\$20.5M more invested locally thanks to the **Bipartisan Infrastructure Law**.

2022 Construction Preview

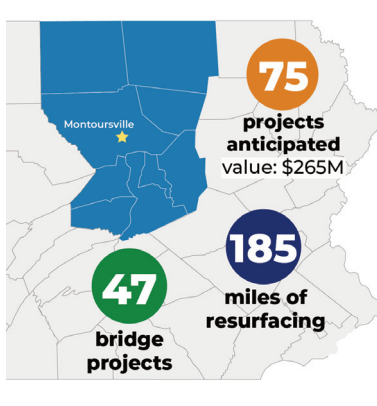
District 2 



\$22M more invested locally thanks to the **Bipartisan Infrastructure Law**.

2022 Construction Preview

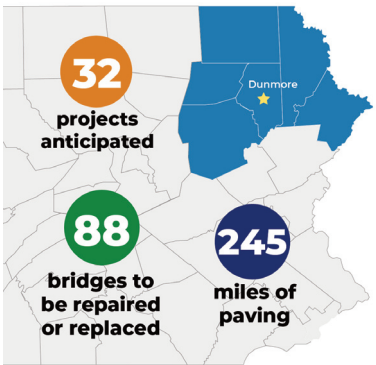
District 3 



\$27.2 M more invested locally thanks to the **Bipartisan Infrastructure Law**.

2022 Construction Preview

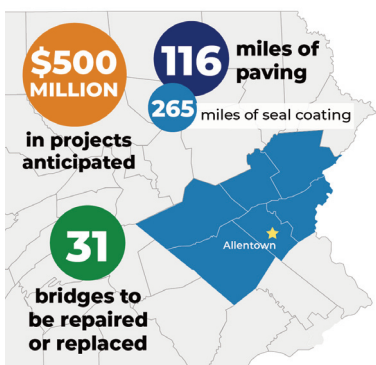
District 4 



\$49.6 M more invested locally thanks to the **Bipartisan Infrastructure Law**.

2022 Construction Preview

District 5 



\$50.8 M more invested locally thanks to the **Bipartisan Infrastructure Law**.

2022 Construction Preview

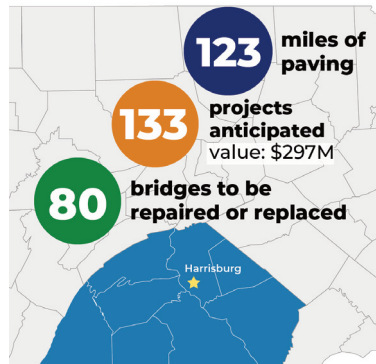
District 6 



\$115 M more invested locally thanks to the **Bipartisan Infrastructure Law**.

2022 Construction Preview

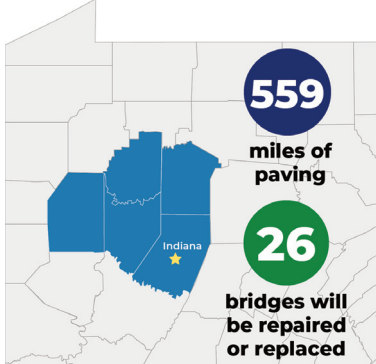
District 8 



\$55.6 M more invested locally thanks to the **Bipartisan Infrastructure Law**.

2022 Construction Preview

District 10 



\$135M more invested locally thanks to the **Bipartisan Infrastructure Law**.

2022 Construction Preview

District 12 



\$21M more invested locally thanks to the **Bipartisan Infrastructure Law**.

FIFTH ANNUAL INNOVATIONS CHALLENGE RECEIVES MORE THAN THIRTY ENTRIES WITH WINNERS FROM BARTONSVILLE, PA

By PennDOT Bureau of Innovations



PennDOT's Bureau of Innovations (BOI) hosted its fifth annual Innovations Challenge earlier this year. The Innovations Challenge is a statewide competition that challenges teams of students in ninth through 12th grade to use their problem-solving, creative, and strategic-thinking abilities to solve real-world transportation challenges. The challenge is part of PennDOT's ongoing mission to bridge technology and generational gaps by integrating a variety of convenient and affordable public engagement tools to broaden its reach and ensure all demographics are engaged in the transportation planning and project development process.

"The Innovations Challenge is a great way to open students' minds to a career in transportation after graduation," said Anja Walker, State Transportation Innovation Council (STIC) manager and statewide Innovations Challenge coordinator, in BOI.

This year's challenge asked students to develop a comprehensive and cost-effective public engagement strategy, beyond the current public engagement procedures, outlining innovative technologies and tools that PennDOT can implement to more effectively engage and connect with all age groups during the transportation planning and project development process.

The competition is judged, first, at the regional level. Then, regional winners advance to the statewide level and present their solutions to the PennDOT Secretary and a panel of judges. Innovations are judged on effectiveness, public outreach and benefits to the community, cost-effectiveness, innovation, and the presentation itself.

This year, PennDOT received more than 30 entries from 12 schools in seven districts across the commonwealth. Each district chose up to five entries to present during a regional competition. The regional winners then moved on to the statewide competition, which was held virtually on April 12.

The statewide winners from Monroe Career & Technical Institute in Bartonsville, Pa., proposed their PaE3 program, which is designed to help communities become "Excited, Educated and Engaged" about PennDOT projects. The purpose of the program is to bridge the gap in communication between PennDOT and its stakeholders. It uses existing technologies, including applications like Waze and Google Maps, to provide notifications about proposed road work projects.

The winning team received two trophies, a traveling one and a permanent one with their school's name engraved. They also won \$4,000 from the Transportation Policy and Education Foundation, an educational arm of the Associated Pennsylvania Constructors (APC) organization and the American Council of Engineering Companies of PA (ACEC/PA), which was divided among the winning team members.

Other regional winners included:

A PennDOT Community Hub app, proposed by a team of students from Reach Cyber Charter School, based in Dauphin County. The app integrates all the digital services and resources PennDOT provides into one application.

A Public Engagement Efficiency plan, proposed by a team of students from Downingtown High School East in Chester County. The plan aims to bridge divides and connect with all demographics by deploying surveys in various locations.

A Rate-A-Ride app, proposed by a team of students from North Pocono High School in Lackawanna County. The app allows for bus passengers to provide feedback about their experience.

For more information, visit the Innovations Challenge page on PennDOT's website.

PENNDOT RECEIVES REGIONAL AASHTO AWARD FOR RECONNECTING PITTSBURGH COMMUNITIES THROUGH I-579 CAP PROJECT



The Pennsylvania Department of Transportation (PennDOT) today announced that its I-579 Cap Urban Connector project is among the Top 12 finalists in the American Association of State Highway and Transportation Officials' 2022 America's Transportation Awards competition.

The Top 12 finalists – whittled down from 80 nominees from 37 state DOTs via those four regional contests – now compete for the Grand Prize and the People's Choice Award. Both prizes come with a \$10,000 cash award for a charity or transportation-related scholarship of the winners' choosing.

"We hope that Pennsylvanians will support this project by voting in the competition," said PennDOT Secretary Yassmin Gramian. "This recognition truly reflects the department's focus on innovative, equitable, smart, and sustainable transportation."

In the 1950s, homes and businesses in Pittsburgh's Lower Hill District neighborhood were demolished to construct the Civic Arena and other developments. During that time, Interstate 579 was built, creating a "concrete canyon" of tall retaining walls and noisy interstate traffic, separating the Hill District from Downtown. In 2012, the Civic Arena was demolished. As part of the vision for this area, reconnecting this neighborhood to the downtown core became a priority. The I-579 Urban Open Space Cap bridges the interstate with a new, three-acre green space and restores the long-lost direct link to the economic opportunities and amenities of downtown Pittsburgh.

The I-579 Cap was sponsored by the Pittsburgh Sports and Exhibition Authority (SEA). PennDOT oversaw the construction of the project, and the City of Pittsburgh now owns and maintains the park and recreation area. The park is called Frankie Mae Pace Park, named in honor of a longtime advocate for the Hill District and its residents.

The project team used a robust community listening, and design review process to obtain input from residents and other stakeholders for the public urban open space that makes up the surface of the Cap. Through this process, six key themes emerged for the new park: water, green, destination, music, seating, and connection. These elements were incorporated through the park landscape design, as well as integrated art. Specific expressions of these themes were developed by a team of artists from the Hill District and incorporated by the project landscape architect and refined through public meetings.

The park includes integrated art designs from neighborhood artists. "Story" walls feature two prominent Hill District residents, an outdoor classroom includes music chimes and seat drums, and totems provide interactive seating/table features. In addition, other amenities include performance and green spaces, accessible bike/pedestrian pathways, an amphitheater space, integrated seating, descriptive wayfinding, charging stations for electronic devices, interactive spiraling trench drains, accent lighting, and bike racks. Native trees, shrubs, and grasses permeate the site, helping to reduce road noise and relieve heat island effects, and all water is retained by soil atop the bridge or infiltrated through tiered rain gardens. New and improved links to the public transit system including access to the nearby subway station, and locations for new bus stops.

Sponsored by the American Association of State Highway and Transportation Officials, AAA, and the U.S. Chamber of Commerce, the competition evaluates projects in three categories: Quality of Life/Community Development; Best Use of Technology & Innovation; and Operations Excellence. The projects are also divided into three sizes: small (projects costing up to \$25 million); medium (projects that cost between \$26 million to \$200 million); and large (projects costing more than \$200 million).

An independent panel of transportation industry experts will select the Grand Prize winner, while the general public will decide the People's Choice Award winner through online voting. Online votes will be weighted to each state's population, allowing for greater competition between states with larger and smaller populations. Online voting is open now and ends at 11:59 p.m. on October 21.

To learn more about the America's Transportation Awards projects, visit www.AmericasTransportationAwards.org

HISTORIC MARVINE TRAIL OPENS IN SCRANTON

By Jessica Ruddy, Community Relations Coordinator, District 4



The Lackawanna Heritage Valley recently opened an additional section of the Lackawanna Heritage Trail in the Marvine Section of the City of Scranton adjacent to the Lackawanna River between East Parker Street and Boulevard Avenue. The trail project involved constructing a 1-mile section of paved shared use (pedestrian/bicycle) trail along the Lackawanna River. Trail-goers will see some Lackawanna County coal mine history in the Marvine Colliery Area. Visitors who enter the Parker Street

Landing pass by a stone foundation from a long-gone rail bridge over the Lackawanna River.

Traveling about a half-mile north along the trail, a pair of century-old bridges cut off from the colliery land that still stretches over the waterway and looms over part of the new trail. The workers from the colliery used to walk across one bridge; the other span transported coal cars by rail.

The trail consists of new fencing, freshly planted trees, and new pavement making the course welcoming to trail users. The path also has an at-grade railroad crossing and passes over a culvert.

Future improvements planned by the Lackawanna Heritage Valley Authority for the trail include creating river access for canoes and kayaks and adding parking spaces for disabled visitors at the Parker Street Landing.

Additional access to the trail and river will continue to attract interest while creating a beautiful, year-round, family friendly attraction that spans 30 communities through Lackawanna, Luzerne, Susquehanna and Wayne counties.

STIC INNOVATION SEEKS TO IMPROVE CONCRETE DURABILITY AND SERVICE LIFE

By PennDOT Bureau of Innovations



The State Transportation Innovation Council's (STIC) Certified Concrete Finishers Course innovation reached an important milestone in April 2022 when PennDOT adopted a specification change to include the certification requirement on all PennDOT projects. With this change, contractors are required to ensure that 60 percent of their crews are certified to meet the new specification.

The goal of the certification course, which includes classroom and practical, hands-on work, is to help improve the durability and extend the service life of concrete and eliminate mistakes

in concrete finishing that can result in costly repairs or reconstruction. Once completed, the course leads to lifetime certification.

Since 2019, nearly 1,600 Pennsylvania concrete finishers completed either the National Ready Mix Concrete Association (NRMCA) or American Concrete Institute (ACI) certification programs, making Pennsylvania first in the nation with finishers who have received the NRMCA lifetime certification. These finishers now meet the requirements for PennDOT projects let after April of this year.

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EMBRACING INNOVATION TO IMPROVE MOBILITY FOR PENNSYLVANIA DRIVERS

By PennDOT Bureau of Innovations



PennDOT is building on its commitment to ease traffic congestion through two initiatives: Crowdsourcing for Advancing Operations and Next Generation Traffic Incident Management (TIM): Integrating Technology, Data and Training. Both are Federal Highway Administration's Every Day Counts Round 6 (EDC-6) innovations that Pennsylvania is championing through its State Transportation Innovation Council.

Ryan McNary, manager of Traffic Systems and the Transportation Systems Management and Operations (TSMO) Performance, and Dan Farley, director of PennDOT's Bureau of Operations, have played groundbreaking roles in implementing these innovations.

McNary noted that over the last four to five years, he worked with a development team within PennDOT that produced software that pulls in crowd sourced incident data from Waze and Inrix, two worldwide speed and incident data providers.

The technology pulls together the speeds and incidents from a subset of vehicles on a given segment of road to provide real-time information, which enables PennDOT to create travel time messaging and increase roadway situational awareness.

"Many areas were relying on emergency responders calling us (with incident reports)," McNary said. "So, we wanted to utilize our data sources better."

One challenge PennDOT currently faces is that its five Traffic Management Centers are not integrated with 911 systems across the state and thus don't have direct access to roadway incident details.

"Our goal is to make (traffic) operations better, and we need to fill the void of not having incidents integrated easily for our operators," McNary said.

With the new Traffic Alerts system, the TMCs can better monitor INRIX and Waze incidents on individual routes around the state.

Operators can click on items in the incident list and see details of the length of the congestion and can zoom in on maps and cameras for a better picture of what is occurring. That information can then be quickly posted for queue protection, detouring, and displayed on the public-facing 511PA system.

"One future effort we are working with the Pennsylvania Emergency Management Agency (PEMA), the Pennsylvania State Police (PSP), and the 911 centers is to potentially get computer-aided dispatch traffic information into the TMCs," he added. "This would help with our timeliness of responding to incidents, diverting traffic or alert travelers sooner."

Beginning in July 2021, McNary's and Farley's team piloted a system that automatically relays data to post "congestion X miles ahead" on roadside electronic signs. That advanced information helps minimize the risk of crashes in congestion where traffic suddenly stops.

Farley also noted that another innovation added to the 511PA system now allows for a call-in audio traffic report to drivers alerting them to roadway impacts in their areas of interest.

Also, "If you are routing through the 511PA App, the system will speak to you and tell you about all known slowdowns ahead from all PennDOT and external partner sources," Farley said.

The Next Generation TIM innovation is aimed at incorporating training, data and technology to help PennDOT, law enforcement and local agencies reduce secondary crashes and incident clearance times.

McNary said his objective was to put reliable data behind the incident timeline.

"Operations staff records incidents on the road, but we correlate it with the crash information and Waze incident to get a more complete picture," he said. "We then take the incident information and overlay it where we have the INRIX speed data to understand how long the incident lasted and how it was affecting the traffic conditions. This allowed us to develop a data-driven 'incident influence time' measure of when traffic returns to historically normal speeds (for that time of day)."

It's a matter of understanding how the incident influences traffic

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and road conditions over time.

"When an incident is cleared, the thought many times was the traffic management job is done," McNary observed. "But what we are trying to adjust culturally, is that our job isn't done until those queues are gone, and traffic is flowing as normal again. The residual congestion cause safety concerns, and hundreds of secondary incidents each year."

This initiative "helped us identify where there are opportunities to collaborate with partners to reduce the timeline," McNary said.

Training is an important part of the Next Generation TIM, Farley noted.

"We are a national leader when developing innovative ways to deliver traffic incident training to emergency management professionals," he said.

Online courses were developed with the help of the Pennsylvania

Turnpike Commission.

"We are looked to nationally when it comes to providing online training and flexibility on when training can be provided," Farley said. "After hours, weekends or nights demonstrate our commitment and collaboration."

PennDOT also recently agreed to obtain a video sharing software with Maryland called MView. The software allows public agencies around the state to view our live camera feeds in a video wall format. Additionally, several states surrounding Pennsylvania share their cameras to view bordering traffic concerns. In Maryland, over 200 public agencies share their cameras with one another to build a more comprehensive network while sharing resources.

"We're in the process of building our network of partners to share video with, and we continue outreach to 911 Centers and PSP Dispatch," McNary said.

COMMONWEALTH AND NORFOLK SOUTHERN AGREE TO EXPAND WESTERN PA. PASSENGER-RAIL ACCESS

Pennsylvania Department of Transportation (PennDOT) and Norfolk Southern Corporation (NS) have reached an agreement to expand passenger rail access in western Pennsylvania. The milestone follows a February 2022 announcement that the parties would jointly examine opportunities to eliminate chokepoints and improve Pennsylvania's rail system to better permit freight and passenger trains to operate together.

Currently, the Pennsylvania Amtrak service travels roundtrip between New York City and Pittsburgh via Harrisburg once daily. The agreement that Norfolk Southern and PennDOT developed anticipates increasing those Pennsylvania passenger services to twice a day. Eastbound service would depart Pittsburgh at 7:00 AM and 12:30 PM and westbound service would depart Harrisburg at 9:41 AM and 4:40 PM.

To support these expanded passenger operations, the commonwealth will invest more than \$200 million in infrastructure and safety improvements that will be constructed and maintained by Norfolk Southern. The future improvements and construction will stem from a previously released Norfolk Southern operational feasibility study and includes upgraded rail lines, passenger platforms, sidings, and necessary communications signals infrastructure.

PennDOT will redirect state Multimodal Transportation Fund dollars to fund the project, as part of the Bipartisan Infrastructure Law's (BIL) funding is intended to replace train sets on the Amtrak passenger-rail network. PennDOT had been setting aside funding to meet requirements from a 2008 federal law for Pennsylvania's contribution toward train set costs. Additionally, PennDOT anticipates applying for additional BIL funds to support station and platform improvements along the route.

For over four months, PennDOT and Norfolk Southern collaborated to develop the operating agreement framework and finalized the improvements necessary to increase passenger-rail service on the Norfolk Southern-owned corridor between Harrisburg and Pittsburgh. The parties anticipate a final definitive agreement to be developed by the end of 2022. Construction can begin after the definitive agreement is executed, with the new service anticipated to start within three years of the definitive agreement's execution.

The Pennsylvania is a key passenger rail route connecting the citizens of the Keystone State from east to west, and, in conjunction with the Capitol Limited, with Cleveland, Chicago and beyond. The Pennsylvania travels Norfolk Southern's Pittsburgh Line, which is part of the Premier Corridor, a main artery for double-stack intermodal traffic moving between Chicago and metropolitan New York. It is one of the busiest and fastest links on Norfolk Southern's network, connecting with major terminals in Toledo, Cleveland, Pittsburgh, Harrisburg and the Lehigh Valley. In a typical year, more than half of Norfolk Southern's time-sensitive parcel and less-than-truckload shipments use the route at some point. The company's trains deliver or pick up freight at 140-plus stations along the corridor, serving more than 800 customers.

Pennsylvania has 65 operating railroads – the most of any state in the country – and ranks fifth in total track mileage with more than 5,600 miles. The 2020 Pennsylvania State Rail Plan reported that in 2017, 193.5 million tons of freight in 4.9 million railcars moved over the state's rail transportation system.

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In total, the Pennsylvania Aggregates and Concrete Association (PACA) conducted 80 of these certification classes across the commonwealth. PACA conducted 52 of these classes since the first of the year, which trained more than 800 individuals. In addition, all 11 PennDOT engineering districts conducted inspector training for construction inspection personnel during each district's winter school.

An equally important, if not the most important, aspect of this initiative has been its role in providing meaningful workforce development to the state's construction trade personnel.

"With the NRMCA certification requiring a hands-on concrete placement portion, these sessions have shown time and time again to be a unique opportunity for senior finishers to help instruct, mentor and train those newer to the industry," said Innovation Owner Jim Casilio, who serves as PACA's director of Technical Services "Bringing together the experienced and the new in an educational setting away from an active project site was a fantastic, unexpected program outcome."

WOLF ADMINISTRATION HIGHLIGHTS COMMITMENT TO CLEAN TRANSPORTATION

As part of the Bipartisan Infrastructure Law (BIL), PennDOT will receive and distribute \$171.5 million in National Electric Vehicle Infrastructure (NEVI) formula funds for EV charging infrastructure over the next five years. Additionally, \$2.5 billion is available in discretionary grant funding. There are more than 31,000 EVs registered in Pennsylvania, nearly triple the roughly 9,700 that were registered in March 2019.

The BIL requires all state DOTs to submit a state EV infrastructure deployment plan to the U.S. Department of Transportation (U.S. DOT) by August 1, 2022. The Pennsylvania NEVI Plan (PDF) was submitted, and it outlines PennDOT's approach to the strategic deployment of a convenient, reliable, affordable, and equitable EV charging network to support range confidence for Pennsylvanians and visitors over the course of the NEVI Formula Program.

PENNDOT EXPANDS ONLINE SERVICES FOR PEOPLE WITH DISABILITIES

To help provide customers with improved service and increased convenience, customers who have a Person with Disabilities Parking Placard can now have the option to renew, receive a replacement or update their address on their permanent Persons with Disabilities Parking Placard online from the comfort of their home.

The initiative, part of PennDOT's efforts to modernize its operations, cuts down on wait times for customers by eliminating the mail-in process and subsequent processing of paperwork. Customers with Temporary Person with Disabilities Parking Placards will also be able to update their address and request replacement identification credentials through this online service.

To renew a placard online or to obtain additional information on services provided, including how to obtain a placard, please visit the Person with Disabilities Information page on the Driver and Vehicle Services website.

Placard holders will continue to receive a renewal form by mail approximately 60 days prior to their expiration.

Customers may obtain a variety of other driver and vehicle products and services, including all forms, publications, and driver training manuals, online through PennDOT's Driver and Vehicle Services website.

Driver and vehicle online services are available 24 hours a day, seven days a week and include driver's license, photo ID and vehicle registration renewals; driver-history services; changes of address; driver license and vehicle registration restoration letters; ability to pay driver license or vehicle insurance restoration fee; driver license and photo ID duplicates; and driver exam scheduling. There are no additional fees for using online services.

WRAPPING UP TWO YEARS OF INNOVATION SUCCESSES: FOUR OUTGOING TAG LEADERS REVIEW THE ONGOING STIC PROGRESS



Coordinating the details of much needed innovations in transportation is a challenging responsibility, and four key players in the success of innovations developed and

deployed through the State Transportation Innovation Council (STIC) have many important insights to offer.

Four Technical Advisory Group (TAG) leaders are wrapping up their two-year tenures and recently shared their thoughts about their experiences. They oversee the four STIC innovation categories: Design, Construction and Materials, Maintenance, and Safety and Traffic Operations.

They are:

Rachel D. Duda, P.E., Assistant District Executive-Design in PennDOT's District 12 in southwestern Pennsylvania, heads the Design TAG

Steven L. Fantechi, P.E., Assistant District Executive-Construction in PennDOT's District 2 in north central Pennsylvania, heads the Construction and Materials TAG.

Dean A. Poletti, P.E., Maintenance Services Engineer in PennDOT's District 11 in the Pittsburgh region, heads the Maintenance TAG, and

Ashwin Patel, Senior Manager for the Traffic Engineering and Safety Division in PennDOT's District 6 in the Philadelphia region, heads the Safety and Traffic Operations TAG.



Rachel D. Duda, P.E., Assistant District Executive-Design in PennDOT's District 12. Duda, who started her tenure a year early because her predecessor retired, noted that dealing with the impact of COVID "was the biggest challenge and getting some of the innovations to progress. Some stalled because people were trying to get their

jobs done, and the innovations involved extra time and extra work.

"Some of the things we were working with had to be delayed," Duda noted. "That was the hardest thing. We wanted to keep going, but sometimes there was not a whole lot of progress."

Regardless, overall progress was made, and Duda is most proud of the Design-Build Traffic Control Plan innovation she and the Design TAG championed.

This innovation allows highway contractors and the designers to work closely on the final design of the Traffic Control Plan to keep drivers moving as efficiently as possible through construction areas.

A conceptual plan, rather than a finalized plan, is provided in the project's bid package. The innovation allows the contractor flexibility in selecting materials, construction methods and available resources. The need for change orders is reduced because the construction team will be responsible for the completeness and quality of the final Traffic Control Plan. In addition, the construction team can

explore cost savings, respond to schedule changes and receive input from other members involved in the construction of the project.

"I took pride in that the most," Duda said. "District 12 piloted it, and we used it on our big interstate projects. It saves the contractors time and saved PennDOT time and money. It was one of the things I thought was one of the greatest accomplishments for the Design TAG over the last three years."

Fantechi, Construction and Materials TAG leader, cites the Geosynthetic Stabilized Bridge Approach (GSBA) and Certified Concrete Finishers Course as his and the TAG's proudest achievements.

GSBA involves enhancing roadway backfill with layers of geosynthetic material adjacent to a bridge abutment, which significantly reduces pavement settlement. This addresses the long-standing issue of severe bumps drivers experience approaching bridges. Dennis Q. Neff, P.E., regional geotechnical engineer in the Bureau of Construction and Materials, was the process owner.

The Certified Concrete Finishers Course, now offered statewide, includes classroom and practical, hands-on work, and is intended to help improve the durability and extend the service life of concrete and eliminate mistakes in concrete finishing that can result in costly repairs or reconstruction. Jim Casilio, P.E., director of Technical Services for the Pennsylvania Aggregates and Concrete Association (PACA), played a leading role in implementing the innovation. As of April 2022, 60% of concrete finishers on PennDOT projects must be certified.

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Steven L. Fantechi, P.E., Assistant District Executive-Construction in PennDOT's District 2. "My experience with GSBA and the Certified Concrete Finishers Course, it was a feeling of achievement, not just for me but the whole TAG," Fantechi said. "It was nice, and I appreciated it."

Poleti, the Maintenance TAG leader, was happy his team finished two innovations started by the previous Maintenance TAG owner Rich Roman, now the district executive in PennDOT's District 4 in northeastern Pennsylvania: Hot Pour Mastics (HPM) and the Stormwater Training and Field Guidebook.

HPM is intended to supplement crack sealing operations, which are used for gaps up to an inch. HPM is used to better

address larger pavement cracks two inches or bigger and go deeper than routine crack sealing operations can address. The innovation is a pourable, self-adhesive asphalt binder that is applied hot and extends pavement life across PennDOT's nearly 40,000-mile road network.

PennDOT owns and operates 2,800 Stormwater Control Measures (SCMs), a variety of catch basins with vegetation to manage pollutants and keep water clean and safe. Each requires different types and levels of maintenance after initial construction, which led to the development of the Stormwater Management Training and Field Guidebook.

SCMs help prevent flooding, reduce downstream erosion, and reduce pollution to surface and groundwater. Regular maintenance preserves SCM functionality and extends the service life. The training and guidebook provide education and preparation on specific maintenance duties and ensures compliance with permitting requirements.



Dean A. Poleti, P.E., Maintenance Services Engineer in PennDOT's District 11. "Those are great innovations out there that we will be able to utilize," Poleti said.

He noted the two more of his team's innovations are close to implementation: the Vegetation Management Equipment Catalog

(PUB 920) and Cameras in Snow Plows.

The catalog will list innovative equipment for use by PennDOT county managers and their assistants, and local governments, to control roadside vegetation. Additionally, installing forward-facing cameras in the plow trucks will give PennDOT managers and the public real time video of road conditions during winter storms.

"We are getting close to the finish line on those two that I hope will be good successes," Poleti said.



Patel, who has headed the Safety and Traffic Operations TAG for two years and served the previous two years as assistant TAG leader, cites high friction surface treatments throughout the state as an important innovation that STIC led in developing several years ago.

Ashwin Patel, Senior Manager for the Traffic Engineering and Safety Division in PennDOT's District 6. "This was one of the safety countermeasures to provide better road surfaces and address crashes," he said. "It has had a good success rate reducing crashes along state highways."

During his time as TAG leader, Patel and the TAG members worked on new approaches to minimize crashes on high-speed curves and keep traffic moving through work zones and signalized intersections.

The Sequential Dynamic Lighting Curve Warning Systems innovation is designed to alert motorists to slow down when approaching and driving through sharp curves. The system uses LED-enhanced, solar-powered or electric signs and wireless controllers, along with ultra-low power radar, to detect and flash a series of chevron signs sequentially throughout the curve.

In addition, the FREEway EVALuation-Pennsylvania, or FREEVAL-PA, is a predictive work zone assessment tool that analyzes work zones' effect on traffic flow. It guides PennDOT's decision-making process for implementing lane closures, crossovers or other traffic control methods, and helps to minimize congestion and delays during construction or maintenance projects.

As they move on from their critical roles, the four TAG leaders are committed to ongoing innovations that will improve transportation across Pennsylvania.

"Overall, it was a very valuable experience," Poleti said. "I learned quite a bit working with different folks and getting

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innovations through while working with Department employees I did not have contact with in the past. It was a fulfilling experience."

"It was a lot of work, but a lot of great things are coming out of it," he added. "It was nice to be associated with great innovations on the forefront."

"We are able to have the TAG leaders take the lead and take innovations implemented in individual districts and other states and bring them forward and that helps move transportation in Pennsylvania forward."

Fantechi referenced some of the hurdles the TAGs most work to overcome.

"Getting ideas and innovations brainstormed is probably the hardest thing," he said. "Once you do get ideas and innovations, it can sometimes be challenging to get these ideas deployed."

"PennDOT is very thoughtful with implementing ideas in that we want quality projects and quality products and procedures, and sometimes it means implementing ideas and innovations can take time to go through the correct steps to get it done," he added.

Patel referenced sufficient resources as a challenge.

"Sometimes, we have an idea or an innovation that could benefit the Pennsylvania's citizens, but there was no funding mechanism to move it forward in a timely fashion unless you have the project programmed or planned," he said.

He also noted why the TAGs are important to maintaining PennDOT's ongoing success.

"It's an organized way to have innovations documented and have buy-in across the transportation industry," he said. "If buy-in exists, it makes it easier for an innovation to be progressing to different stages and deployed at a faster pace."

Looking ahead, the outgoing TAG leaders offered some advice for their successors.

"Keep recurring meetings on, keep after the innovation owners and keep in good contact with the innovation owners to keep the innovations moving forward" Poleti said.

"That's what I did the last two years. You must take the bull by the horns and commit to the innovations owner and get meetings on the books. It [innovation progress] slows down without it. If you get more meetings on the schedule, there will be more time to move the innovation forward."

"I think we need someone in the TAG leader position to come up with different innovations," added Duda. "PennDOT as a whole is using a lot of different innovations and testing them out. I just went to an industry innovations conference and heard what the industry is doing. Innovations overall are important to every aspect of PennDOT."

I would say that if there is a new innovation to be worked on, identify early on who will be the champion to move the innovation forward and identify the appropriate owner who could devote the time to move the innovation forward, Patel concluded. "That's the critical path. If there is way to identify the owner to deploy the innovation, it would also benefit them to work on it and bring the innovation forward."

If you are interested in becoming involved with a TAG, contact the STIC Management Team at penndotstic@pa.gov.

MEET TRAFFIC ANALYST TODD ROTTET

By Planning Deputate Staff



The Lackawanna Heritage Valley recently opened an additional section of the Lackawanna Heritage Trail in the Marvine Section of the City of Scranton adjacent to the Lackawanna River between East Parker Street and Boulevard Avenue. The trail project involved constructing a 1-mile section of paved shared use (pedestrian/bicycle) trail along the Lackawanna River.

Trail-goers will see some

Lackawanna County coal mine history in the Marvine Colliery Area. Visitors who enter the Parker Street Landing pass by a stone foundation from a long-gone rail bridge over the Lackawanna River.

Traveling about a half-mile north along the trail, a pair of century-old bridges cut off from the colliery land that still stretches over the waterway and looms over part of the new trail. The workers from the colliery used to walk across one bridge; the other span transported coal cars by rail.

The trail consists of new fencing, freshly planted trees, and new pavement making the course welcoming to trail users. The path also has an at-grade railroad crossing and passes over a culvert.

Future improvements planned by the Lackawanna Heritage Valley Authority for the trail include creating river access for canoes and kayaks and adding parking spaces for disabled visitors at the Parker Street Landing.

Additional access to the trail and river will continue to attract interest while creating a beautiful, year-round, family friendly attraction that spans 30 communities through Lackawanna, Luzerne, Susquehanna and Wayne counties.