FHWA-21-CAI-022
September/October 2021 | V15 | Issue 86

U.S. Department of Transportation
Federal Highway Administration

INNOVATOR

Agencies are enhancing data creation, collection, and sharing for both digital project delivery and asset management.

Credit: Utah Department of Transportation (left) and FHWA (right)

Get Innovator on your mobile device! Text "FHWA Innovation" to 468311

Share

e-Ticketing and Digital As-Builts

Improving the way valuable information generated during project delivery is exchanged and utilized.

Electronic ticketing (e-Ticketing) and digital as-builts (DABs) are two innovations that make it easier for the highway construction industry to switch from paper-based exchanges to a modern, 21st century digital workflow providing information that is "smarter" and more accessible. e-Ticketing improves the tracking, exchange, and archiving of materials tickets. DABs are an accumulation of the data used during digital project delivery that provides a living record of built infrastructure for agencies' future business needs.

Used individually, these innovations significantly enhance agency capabilities for harnessing data. Together, they increase efficiency and safety during project delivery and can result in multiple benefits when project information is readily accessible for post-construction activities, like asset management.

e-Ticketing: Streamline and Simplify

Both transportation agencies and the private sector spend considerable resources producing, sorting, recording, and archiving paper tickets. Collecting paper tickets from hauling vehicles also exposes construction inspectors and contractor personnel to safety hazards in work zones.

e-Ticketing mitigates the challenges of paper tickets through a safer, faster, less resource intensive, more sustainable and streamlined process using digital technology. e-Ticketing data can be transmitted in real time to a cloud or storage system, making it easily accessible by mobile devices for operational decisions. It creates a single source of truth that can be exchanged, via application program interfaces, directly into State department of transportation (DOT) information management systems for data mining, materials payment, or other purposes.

e-Ticketing also facilitates data integration with complementary technologies, such as **intelligent compaction**, dielectric profiler systems, and pavement-mounted thermal profilers. This integration offers a unique opportunity to access and critically analyze quality and productivity data that is otherwise difficult to capture until after project completion.

As e-Ticketing use grows, State DOTs are discovering a need for software solutions to aggregate e-tickets from the many sources and vendors used by contractors. A number of potential solutions are available on the market, some through outside software vendors, and others through systems that DOTs developed for internal use.

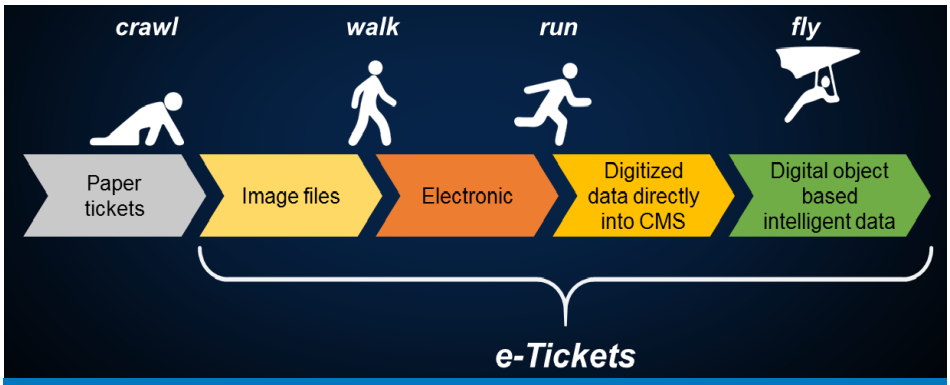
These secure applications can help build robust audit logs and a trusted chain of custody for tickets by tracking and auditing changes during the ticket lifecycle, building confidence in ticket accuracy for both the State DOT and contractor. In some cases, they even allow contractor systems to interface with the DOT system for ticket verification.

e-Ticketing aggregation systems commonly benefit both DOTs and contractors by streamlining and simplifying materials payments. DOTs

Credit: FHWA

e-Ticketing data helps manage material deliveries, testing, and quantities as projects play out in real time.

no longer have to manually keep up with all paper tickets, they simply filter the ticket database in whatever way the project managers wish then export into a spreadsheet where totals can easily be quantified. Additionally, contractors are now beginning to use data gained from e-Ticketing systems to better manage trends and quantities of materials as projects play out in real time.



Credit: FHWA

Maturity of e-Ticketing technologies.

Utah's Homegrown Solution

The Utah DOT (UDOT) is using FME, an ArcGIS® database, and an ArcGIS®-based solution called Survey123 that has allowed e-Ticketing integration in-house without needing external software or vendors. When UDOT began e-Ticketing, the State already had a license for ArcGIS® and personnel who knew how to use it, which created an easier learning curve for using this type of solution.

In addition to having all tickets route through a single system, UDOT notes this application is easy to use for inspectors and can be installed on any device. When tickets are accepted in the field by inspectors, the ticket plus any notes go into the ticket database. UDOT is also developing a contractor's access site through the application, which will allow them to see the tickets in real time. Using the same database in this way has provided a benefit to both UDOT and contractors for troubleshooting missing or incorrect tickets.

"The overall efficiencies provided by the system and by having real-time data give greater command to how you manage a project, both from a DOT and a contractor perspective," said

Delaware Pilots e-Ticket Integration

The Delaware DOT (DelDOT) is piloting a software system, HaulHub, for integrating e-Tickets for its six hot-mix asphalt suppliers across the State. In DelDOT's experience, suppliers often have differing systems and formats for their e-Tickets, so finding a solution that would work with all those systems and standardize the information inspectors and field staff see was important to the pilot's success.

DelDOT's system collects all e-Tickets from the hot-mix suppliers and assigns them to the correct project, at which point the field personnel get access to the tickets. As the pilot continues, the agency's goal is to incorporate every hot-mix project in the State into the system.

While there has been some hesitancy moving from paper to e-Tickets, the response has been positive overall. Though the pilot is still ongoing, DelDOT already sees potential for time savings due to the auditability of tickets and other benefits, such as storage and the lessened environmental impact.

"Putting consistent, clear information at our field personnel's fingertips is a benefit," said Billy Sweeney, DelDOT's project controls coordinator. "Another extremely important factor is the increased safety of our people."

Looking forward, DelDOT's goal is to integrate e-Ticketing with other e-Construction databases and potentially use the captured metadata from the e-Tickets to help measure paving performance or possibly identify problems for sites using business intelligence software. "Using the data that these systems collect in an intelligent way is what we see as the ultimate goal," said Sweeney.

Notice: The U.S. Government does not endorse products or manufacturers. Trademarks or vendor/manufacturers' names appear in this document only because they are considered essential to the objective of the document.

Ken Talbot, UDOT State construction engineer for quality management. “Our inspectors and contractors are already seeing benefits from using the app.”

Digital As-Builts: “Collect Data Once, Use It Often”

Traditional as-built drawings record field changes on paper plan sheets or PDFs and do not capture much of the additional valuable information generated during design and construction. Current as-built approaches are largely paper-based and resource intensive and make agency-wide, long-term management of the data ineffective. This means important information is often difficult to access later and is sometimes incomplete.

For example, current as-builts do not include accurate feature locations or a complete record of an asset’s condition information generated during design and construction, such as underground utilities placements, materials specifications, and quality assurance data. This valuable data is often lost, requiring re-collection throughout the asset’s lifecycle and costing agencies considerable resources, not to mention opportunity losses when data is not readily available for analysis and decision-making.

DABs, however, are created with digital data already collected as the project is designed and built—providing a sustainable and searchable record. Drawn from digital project delivery practices such as **3D models**, **e-Construction**, and **unmanned aerial systems**, DABs are evolving to incorporate many types of asset data records with their GPS location information. Example data include design models, right-of-way locations, pavement and structures attributes, quality assurance (including data from e-Ticketing), and subsurface utilities.

Credit: FHWA

Geolocated information, particularly for utilities and foundations, can best be captured during construction and passed into the next phase of the project life cycle.

Credit: Utah Dept. of Transportation

*Watch this UDOT **video** to learn more about the agency’s approach to digital delivery.*

Data can be contributed by various partners in the project delivery process and validated and managed by the agency as part of its enterprise data management system. Industry is moving from using the term “as-builts” to “project information model” (PIM) to capture the idea that there is more valuable data than just the plans. This PIM will contribute to a lifecycle “asset information model (AIM).” In addition to 3D design models, PIMs and AIMS are collections of data organized for an agency’s business needs.

The benefits of DABs begin with sharing the digital information as design and construction progresses, enabling better communication and virtual collaboration both before and when the project goes to the field. DABs further leverage this valuable information by incorporating the updated geometric design (advanced PDF or preferably 3D design model) with other important construction data to reflect the project’s as-built condition for future maintenance, asset management, and next cycle project scoping.

A data-rich as-built, or project information model, will contribute to a geospatially accurate “digital twin,” or asset information model, of an agency’s transportation system. The readily accessible and integrated data becomes a valuable asset as it provides agencies with comprehensive information on their asset inventory.

Utah Pursues a Digital Twin

The Utah DOT (UDOT) recently received an **Accelerated Innovation Deployment (AID) Demonstration** grant from FHWA to **advance digital construction with data capture**. The focus is on identifying the data from construction that is relevant to the work of various UDOT disciplines and developing a process to capture that data into systems that support widespread use and regular updates.

This effort is a step along the way to UDOT's goal of having a digital twin of its assets. UDOT's vision is that agency staff will use digital twins to access a reliable record of an asset's history and current status to support decision-making. The agency created a **Digital Twin Strategic Plan** with details on how it sees this strategy evolving.

"What we have today is a comprehensive asset data set that is basically static, with updated information collected every other year," said Becky Hjelm, UDOT digital delivery/digital twin advancement manager. "We want to move from that to something that is a comprehensive, living data source. So if there's a construction change, it's accessible for users of that data."

Hjelm said the agency expects to see big benefits in terms of the time it takes to gather information for analysis and the resources expended to collect project data, including data captured from sources such as e-Ticketing. "Marrying information on field conditions at the start of and during construction with the data we collect on material samples could help implement projects in the best possible way," she said.

Iowa Pilots BIM for Bridges

In a recent **pilot project**, the Iowa DOT successfully delivered a three-span, curved, steel-plate girder bridge construction project using a Building Information Model (BIM) as the legal bid document. The agency next plans to update the model to the as-built condition so it can be used for asset management.

Ahmad Abu-Hawash, chief structural engineer at Iowa DOT, said the agency's vision is to create a digital twin in the form of a BIM model that can house all information related to an asset, from design specifications to material reports to data from inspections, structural health monitoring, nondestructive evaluation, and more.

He said that by implementing DABs, Iowa DOT expects to eventually decrease the cost of project development, delivery, and asset management due to increased design and construction quality, fewer change orders, better understanding of the design intent, and efficient access to data. The increased efficiency is expected to help overcome budget constraints and an anticipated shortage in qualified workforce.

Iowa DOT is beginning the process of developing a formal road map and strategic plan that will identify the potential tools for saving, storing, and accessing data from the as-built digital model. The agency envisions that BIM model development will start in design then be confirmed and updated during construction. Maintenance staff will then update the model at every inspection cycle so asset managers can make the appropriate decisions based on current data.

For other transportation agencies embarking on the journey to DABs, Abu-Hawash suggested they reach out to other State DOTs for advice and start with a road map. "The first application is a learning process," he said. "It's not very realistic to expect efficiencies right away; it's an investment in the future."

MORE INFORMATION

@ Contact **Kathryn Weisner** (e-Ticketing) or **David Unkefer** (digital as-builts) of the FHWA Resource Center.

Visit the **EDC-6 e-Ticketing and digital as-builts** web page for links to additional resources.

Share this article on your social media accounts

STICs Deploy Homegrown Innovations

The sixth round of Every Day Counts (EDC-6) kicked off with a Virtual Summit in December 2020 that introduced the seven innovations FHWA is promoting over the next 2 years. The summit also featured a National State Transportation Innovation Council (STIC) Network Showcase that highlighted 245 innovations developed and deployed by agencies throughout the country. The following are just a few examples of the expertise and ingenuity agencies have put into action in areas such as asset management, finance, design, and construction.

Credit: FHWA

Several of the ideas featured used geographic information systems (GIS) to improve asset inventory management. The Vermont Agency of Transportation (VTrans) implemented a GIS-based method for **surveying and cataloging cultural resources**. VTrans' Cultural Resources team and its consultant developed **new GIS tools** to collect, share, and archive data on the State's historic sites in a paperless and geo-referenced format. An online map is used to track survey progress and share information with project stakeholders. VTrans expects this GIS-based method to greatly expedite project review.

The Florida Department of Transportation (FDOT) estimates savings close to $223,000 per year by using GIS to compile information on **utility test holes,** excavations that are commonly 10 to 12 inches wide used to verify the physical location and depth of underground utilities. Projects with extensive reconstruction, drainage, and several improvements with deep foundations usually require a large amount of test holes. In the past, test hole records were not available for all designers to view when working on specific areas. Using its **GIS tools**, FDOT created a layer with test hole data that designers can access to verify utility locations without having to request additional test holes. In addition to cost savings, reported benefits include streamlined delivery, consistent quality, and enhanced collaboration.

Credit: Florida Department of Transportation

FDOT implemented an enterprise GIS solution for compiling information from test holes.

To identify non-compliance of public facilities with the Americans with Disabilities Act (ADA), the Iowa DOT leveraged **geospatial data and field data collection technologies** to assess thousands of assets within the State's public transit and pedestrian transportation systems. The agency combined tablet-based data collection, a data visualization dashboard, and automated reporting to develop an in-house process that employs commercial off-the-shelf software to quickly assess assets using a standardized evaluation and reporting method.

In Arizona, three metropolitan planning organizations partnered to determine the economic impacts of transportation projects. Their **Sun Corridor Value Impact Analysis** resulted in a

replicable methodology and toolkit for quantifying the economic value added by large, high-capacity transportation investments. The **toolkit** helps regional partners understand how transportation connects to the economy of the megaregion and affects different household, employment, and industry groups.

Credit: Mississippi Dept. of Transportation

MDOT developed guides to assist local public agencies with a risk-based approach to working with inspection and material testing consultants.

Because the State's local public agencies (LPAs) rely heavily on consultants to develop and deliver projects, the Mississippi DOT (MDOT) adopted **a risk-based approach** to construction inspection and material testing to help them use administration resources efficiently. MDOT's **Risk Based Inspection and Material Testing Guide** sets a baseline for inspection hours and material testing frequencies on LPA projects, and its **Critical Inspection Guide** focuses inspectors on key components of the work.

The Illinois DOT addressed the communication challenges in sharing accurate and timely information that can happen during bridge deck construction and deck concrete pours by developing a cloud-based system using laptops, tablets, and smartphones. The **digital, shared concrete pour log** allows staff and contractors to access up-to-date information instantly regardless of location, reducing the chances for confusion or incorrect information during a pour.

Credit: Illinois Dept. of Transportation

*IDOT's digital, shared concrete pour log improves communication during bridge deck construction and deck concrete pours. Watch this **video** to learn more.*

Credit: North Carolina Dept. of Transportation

NCDOT's instructional video describes how the dynamic left turn intersection works.

The Georgia DOT (GDOT) is pursuing faster project delivery from concept to completion by using **flash tracking for accelerated project delivery**. GDOT identified and prioritized best practices considered crucial for completing time-driven projects successfully, then developed a Flash Track Readiness Assessment Toolkit. The toolkit assesses a team's preparation to undertake projects on a flash track basis and identifies practices that can remedy a team's weaknesses.

Dual left turn lanes are typically operated with protected left turn signals, which means extra delay during non-peak hours compared to permissive operation. To reduce this traffic holdup, the North Carolina DOT (NCDOT), the town of Cary, and the Regional Transportation Alliance teamed up to design, install, and test a new **dynamic left turn intersection**. This **new design** allows permissive operation to be used during nonpeak hours using standard traffic control devices. NCDOT expects substantial benefit in terms of delay savings.

MORE INFORMATION

Register for access to the EDC-6 Virtual Summit on-demand content to learn more about these and other homegrown innovations. After registering, click on the National STIC Network Showcase button.

Share this article on your social media accounts

EDC Legacy: Bridging the Digital Divide

For more than a decade, FHWA's **Every Day Counts (EDC) program** *has promoted proven but underused innovations that enhance roadway safety, improve project delivery, and reduce traffic congestion. Across the country, agencies attest to the value of adopting these new technologies and practices, along with a cultural change in how they deploy innovation. As the transportation community participates in EDC round six, Innovator is featuring articles that reflect on what the program has accomplished.*

Highway project delivery and administration has historically been a manual and two-dimensional, mostly paper-based process for accomplishing final design and construction. This approach necessitates large quantities of paper for postal delivery, project journals, stamped plan sets, etc., along with multiple physical signatures and limits timely communication. Early EDC initiatives boosted a transition to digital practices and technologies—think computers/software, mobile devices, and the cloud—that streamline workflows and leverage the power of data for automation and enable real-time decision making.

Streamlining Workflows

In round three of EDC (EDC-3), **e-Construction** supported the move from carrying reams of paper and stacks of manuals into the construction process to carrying a laptop or a mobile device. e-Construction technologies (such as mobile devices, the cloud, applications for field inspection and data collection, data hosting services, and electronic routing, review, and approval processes) improve real-time collaboration and transparency and save money. Host States for EDC-sponsored peer exchanges reported saving millions of dollars and thousands of hours per year by adopting e-Construction.

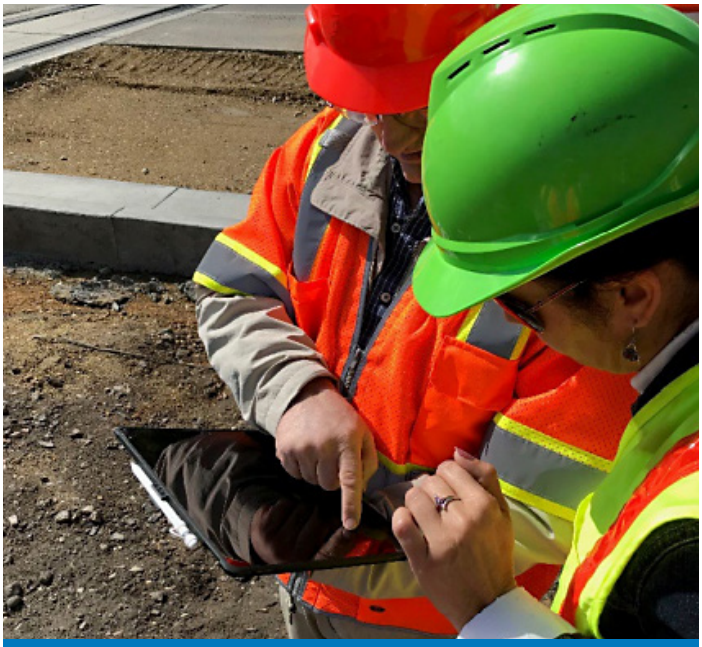
As more States adopted e-Construction, industry responded by offering additional software and hardware options and tools. "When we first started, there were two main software vendors," said Kathryn Weisner, FHWA Resource Center. "Now for e-Ticketing alone there are at least 18 different vendors, for digital signatures about a dozen, for document management solutions at least 8, and for construction management systems at least 5, because industry is seeing the opportunity."

"Different career fields inside State DOTs, for example IT and accounting, worked together to make e-Construction a reality and collaborate on systems that benefit everyone," said Weisner. "The EDC peer exchanges were invaluable not just for the technology promoted, but for our State DOTs as a whole because technical staff were at the table with executives and upper management discussing e-Construction and other innovations. These relationships continue beyond EDC."

Leveraging the Power of Data

Three-dimensional (3D) engineered models, promoted during EDC-2 and EDC-3, have become the standard for many State DOTs and their contractor partners. With 3D modeling software, design and construction teams can connect virtually to develop, test, and change project designs. Contractor partners can utilize the models to automate machine controls during construction, and agencies can also use the model data as part of a "digital twin" of their assets for maintenance and other post-construction applications. EDC supported States in pursuing this approach and encouraged industry to accelerate development of practices, standards, tools, and software integrations for 3D models and other **Building Information Modeling** technologies that improve accuracy and efficiency.

Several States have now moved toward using the 3D design model as a primary part of the legal construction contract document instead of



Credit: FHWA

e-Construction technologies such as mobile devices and applications for field inspection improve real-time collaboration.

conventional paper plans. This further integrates and streamlines the design to construction workflow and produces more opportunity for collaboration to resolve issues before they get to the field. Institutionalizing these digital practices is making what was innovative now common practice.

Older technologies have also adapted to keep up with these advancements. For example, total stations, optical surveying instruments that use electronics to calculate angles and distances, are becoming "robotic," which means they are safer, more cost-effective, and more versatile for surveying and with automated machine guidance. EDC-2's **intelligent compaction** initiative, an approach to compacting pavement materials that incorporates GPS mapping and on-board computers, raised awareness of this new technology and data. One result was the development of the International Society for Intelligent Construction.

"EDC presented a case for trying underutilized innovations that have shown success and provided momentum to move forward," said Antonio Nieves, FHWA Office of Infrastructure. "EDC's accomplishments are not measured just by the numbers of States implementing a single innovation, but also by the curiosity of our partners to explore other technologies."

Looking Ahead

Early EDC efforts supplied momentum for adoption of digital signatures, model as the legal document, and e-Bidding, among other digital practices, along with **e-Ticketing and digital as-builts** in EDC-6. The initiatives are now converging as agencies and industry mature in their ability to integrate and utilize digital information throughout an asset's lifecycle, even to the point of saving as-built data for future use with maintenance/operations, asset management, and next cycle design/construction.

"Agencies realize that data is becoming one of their greatest assets. This is driving the need for an enterprise, or agency-wide, approach to effectively managing and sharing data," said David Unkefer, FHWA Resource Center. "Having ready access to good data will ultimately produce many secondary benefits, including capability to leverage artificial intelligence, analytics, and automation from the digital information. EDC has increased awareness and understanding within the highway industry of these digital opportunities, as well as incubating ways they might be better utilized and implemented."

"EDC's focus on deploying proven and game-changing innovation serves to engage top-to-bottom relationships within DOTs, from the CEO to the technical worker, and helps to unite all levels of staff "champions" toward common goals," said Unkefer, "and the successes in using mobile devices in the field for e-Construction and e-Ticketing and advancing 3D model-based workflows will provide opportunities to incorporate new innovations, such as augmented reality, on the highway construction projects of the future."

MORE INFORMATION

@ Contact **David Unkefer** or **Kathryn Weisner** of the FHWA Resource Center for the latest resources available through **EDC-6 e-Ticketing and digital as-builts**.

Read the newly published BIM for Infrastructure **National Strategic Roadmap**.

Share this article on your social media accounts

Accelerating Market Readiness Funds Awarded

The first round of awards under FHWA's **Accelerating Market Readiness** (AMR) program will help bridge the worlds of research and practice by providing resources to assess emerging innovations and document their performance in a real-world setting. These activities are intended to help advance the innovations to a more complete market-ready status, which in turn should accelerate the adoption of the innovations by transportation agencies.

FHWA made the following seven awards totaling more than $2.6 million in combined funding to transportation innovators from State departments of transportation (DOT), academic institutions, and the private sector:

With the iTrain project, the **Missouri DOT** (MoDOT) will build on its early efforts developing virtual reality models for training work zone inspectors. MoDOT will also deploy a leader-follower truck mounted attenuator (TMA) system in the State's two largest metropolitan areas and evaluate the system within a work zone setting. MoDOT's ultimate goal for the project and deployment of the system is the elimination of worker injuries.

The **Virginia Tech Transportation Institute** will lead a project to implement a fully adaptive highway lighting system and monitor its performance in terms of light level, energy consumption, crash behavior, lighting quality, and security.

A project led by the **Illinois Center for Transportation** at the **University of Illinois at Urbana-Champaign** will include the integration and field deployment of a ground penetrating radar (GPR)-based compaction monitoring system by retrofitting a conventional roller. The project will demonstrate the GPR-based tool for real-time continuous monitoring of density during asphalt concrete layer compaction.

From the private sector, **Applied Research Associates** will conduct a project focusing on the dynamic, viscoelastic back calculation of flexible pavement layer properties to fine-tune a software tool for an open source release available to highway agencies for routine usage. The tool's use will potentially lead to more reliable pavement rehabilitation design, thereby improving the service life of pavements and improving the planning of transportation infrastructure.

Drexel University will lead a project to increase the robustness, readiness, and ease of installation of wireless sensors for bridge assessment; allow cloud-based sensor data transmission and automated report generation to summarize conditions of bridges; and achieve several rigorous validations in the field.

Finally, **ThermalStare, LLC** will advance a new technology for the safety analysis and load rating of in-service bridges. This project will field test and evaluate the capabilities of a nondestructive ultrasonic stress measurement technology with the ability to determine the total forces in steel bridge members and gusset plates in-situ.

Visit the AMR program webpage for updates as work progresses on these projects and more information becomes available.

MORE INFORMATION

Visit the AMR program **webpage** for details on future application opportunities.

Contact **Jeff Zaharewicz** of FHWA's Center for Accelerating Innovation for information on the AMR program.

Share this article on your social media accounts

States Innovate!

Ohio Shields Bridge Piers from Corrosion

The Ohio Department of Transportation (ODOT) is using a new product to protect concrete bridge pier columns from the salt-laden snow thrown on them during normal snow plowing operations. When road salt and grit hit the piers, chlorides from the salt can penetrate the concrete surface, causing deterioration and spalling to occur at a much faster rate. Rain does not wash the salt off completely because columns are protected by the concrete deck of the overhead structure. Years of this saturation and abuse from winter operations take their toll on concrete pier columns.

ODOT has tried applying protective coatings on some piers but found that over time the coatings can peel or wear away. In 2013, ODOT began testing a new polyethylene product that wraps around concrete pier columns to prevent chloride penetration and corrosion. ODOT's observations so far are that the protected pier concrete has not experienced accelerated deterioration as compared to the unprotected concrete used as a control.

Credit: Ohio Department of Transportation

ODOT is employing a polyethylene product that wraps around concrete pier columns to prevent chloride penetration and corrosion.

In addition, a recently completed **research project** that compared use of the polyethylene product to traditional coatings found that it was easy to install in about 30 minutes with a three-person crew. Read ODOT's research project **fact sheet** for more details.

ATSPMs Improve Traffic Management in Dover, New Hampshire

In partnership with FHWA and the New Hampshire Department of Transportation, the city of Dover, NH, installed **Automated Traffic Signal Performance Measures (ATSPMs)** at 17 intersections within its Central Avenue corridor to coordinate traffic signals and improve traffic flow.

Traffic signals at these intersections are now connected wirelessly to the city's central traffic server that consistently monitors traffic flow within the system and notifies staff when an issue arises along the corridor. The technology also provides the ability to make real-time traffic signal programming changes within the system based on current conditions. The result is an informed approach to developing signal timing that is not dependent on limited, expensive manually collected data sets and citizen calls to gain insight on how the system is working.

The city of Dover saw this effort as an opportunity to make a dramatic change from the traditional approach to managing its signal system. By implementing ATSPMs, the city is able to get a complete data set to help better understand the needs of the vehicles, pedestrians, and bicycles using the network. Dover produced a **video** describing the project in more detail.

A **grant** from FHWA's **Accelerated Innovation Deployment (AID) Demonstration** Program helped make this project possible. The program provides funding to accelerate the implementation and adoption of innovation in highway transportation.

INNOVATOR

INNOVATOR, published by the FHWA Center for Accelerating Innovation, advances the implementation of innovative technologies and accelerated project delivery methods in highway transportation.

Pete Buttigieg
Secretary, U.S. DOT

Stephanie Pollack
Acting Administrator, FHWA

Center for Accelerating Innovation Team:

Thomas Harman
Director

Jeffrey Zaharewicz
Senior Advisor

Sara Lowry
Program Coordinator

Fawn Thompson
Program Coordinator

Julie Zirlin
Program Coordinator

Letha Cozart
Managing Editor

James Cline, Jr.
Designer

Pat Holcombe
Designer

Rodney Walker
Designer

U.S. Department of Transportation
Federal Highway Administration

EDC Safety Summit Series

Credit: FHWA

Register now for the Every Day Counts Safety Summit Series happening each Wednesday in September. This series benefits those who are just beginning to implement these innovations, those who are further along and could gain from peer-to-peer engagement, and those with innovation stories to share.

Each event starts with FHWA leadership perspectives and opportunities for questions and answers, followed by interactive State and local presentations and a topic-based breakout session, as well as a local innovation safety showcase.

Featured EDC Innovations

Sept. 1: **Safe Transportation for Every Pedestrian** (**Listen On-Demand**)

Sept. 8: **Data Driven Safety Analysis**

Sept. 15: **SafetyEdge™**, **Reducing Rural Roadway Departures**, **High Friction Surface Treatment**

Sept. 22: **Intersection/Interchange Geometrics**

Sept. 29: **Road Diets**

The summit takes place from 10 a.m. to 2 p.m. ET each day and is open to all State, local, and tribal stakeholders. Participants can join for one or all of the dates or visit the **registration page** later to listen on demand. Contact **Karen King**, FHWA Virginia Division, for additional information.

Subscribe Today!

Don't miss an issue! **Sign up** to receive EDC News and Innovator newsletters.

Want More Innovator?

Access past issues in the **Innovator Archive** and have the next issue sent to your mobile device by texting "FHWA Innovation" to 468311. Email reprint requests to **Julie Zirlin**.