



INNOVATOR



A path forward for designing structures with ultra-high performance concrete.

Credit: FHWA

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New Opportunities for Building Bridges Better: The Evolution of UHPC

As State and local agencies seek innovative materials for long-lasting and resilient bridges, **ultra-high performance concrete** (UHPC) has emerged as a solution that offers unmatched strength and durability in many applications. Over the past two decades, the use of UHPC has been gaining momentum in projects across the country and transforming the way agencies look at extending the service lives of bridges.

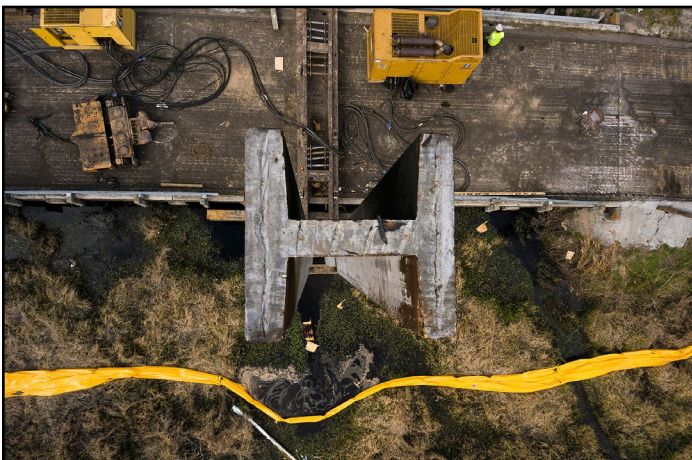
In 2003 the Federal Highway Administration (FHWA) began working with States to consider UHPC deployment, which was developed in Europe in the 1990s. Since then, more than 400 bridges across the United States have incorporated UHPC, mostly for field-cast connections between prefabricated components or for preservation and repair. These successful early deployments led to a growing interest in broadening the use of UHPC to a new application—construction of the bridge’s primary structural components.

Creative UHPC Solutions

UHPC has exceptionally high durability and compressive strength compared to conventional concrete and offers a tensile strength that is approximately twice as high. These advanced properties can offer significant advantages in bridge design, construction, and preservation, including for primary bridge elements such as the girders, decks, or the piles that are driven in the ground to support the substructure. Importantly from a structural engineering standpoint, UHPC offers sustained post-cracking tensile strength, meaning that after it cracks it can still resist loads.

The Iowa Department of Transportation (DOT) has piloted various UHPC technologies and applications over the past couple decades, including the first use of UHPC for a bridge’s structural members. The Mars Hill Bridge in Wapello County, IA, which opened to traffic in 2006, was a collaborative effort between Iowa DOT, Iowa State University, and FHWA to replace an aging rural bridge with one using UHPC components. Due to the lack of formal U.S. design specifications for UHPC at the time, the Iowa DOT used guidelines developed in France to determine the design capacities of the bridge beams.

This first U.S. deployment of UHPC on a highway bridge provided valuable experience in design, testing, and fabrication methods, but before UHPC for primary structural components could advance to everyday use, bridge owners would need to gain more familiarity with the new material and, because its properties vary from those of conventional concrete, formal guidelines would need to be developed.



Credit: Cor-Tuf

The Florida DOT’s County Road 339 Waccasassa River Pile Demonstration in 2020 was the first use of a **UHPC pre-stressed H-pile** on a bridge in the State.

Cover photo: The first bridge in the United States to use UHPC for primary structural elements was the Mars Hill Bridge in Wapello County, Iowa.

A few years after the Mars Hill Bridge project, round one of FHWA's Every Day Counts program (EDC-1) kicked off with the inclusion of **prefabricated bridge elements and systems** (PBES) for accelerated bridge construction. Because PBES are connected onsite, they require high-quality, durable connections. FHWA added UHPC to EDC rounds three and four as an innovation that could improve the strength, simplicity, and durability of PBES connections.



Credit: Texas Department of Transportation

Texas is one of many State DOTs working to determine how best to use UHPC in their bridge inventory. Watch a [video](#) describing Texas' full-scale testing of UHPC girders.

Ben Graybeal, FHWA's Bridge Engineering Research Team Lead, said that UHPC connections for PBES gained momentum quickly in States around the country, and the EDC program helped a lot in spreading the word. By December 2018, 33 States demonstrated, assessed, or institutionalized the technology.

"The entry point was connections, and we went from there to promoting **UHPC for bridge repair and preservation** during EDC-6," said Graybeal. "Bridge owners across the country are now beginning to use UHPC in overlays to repair deteriorated bridge decks, in link slabs to replace failing expansion joints, and in other structural element repair scenarios. Preservation and repair provided another relatively easy entry point for more owners to get accustomed to the technology."

Because of its strength and durability, UHPC can be used for preservation and repair in situations that normally use conventional concrete or repair mortars, and in some cases those that use structural steel. Additionally, UHPC repairs are long lasting and resilient, requiring less maintenance and fewer follow-up repairs than conventional methods. Some applications, such as bridge deck overlays and replacing expansion joints with UHPC link slabs, can extend the service life of bridges well beyond that of traditional repair strategies and are more cost-efficient than bridge replacement.

Structural Design with UHPC

As bridge owners around the country became more familiar with and gained experience using UHPC, interest in UHPC for structural design

applications began to grow, so FHWA began a multi-year effort to draft the needed guidance.

In October 2023, FHWA published a report on **Structural Design with UHPC** that included a draft version of design guidance based largely on FHWA research and informed by work from other research groups across the U.S. and around the world. The American Association of State Highway and Transportation Officials (AASHTO) Committee on Bridges and Structures used the draft guidance as a basis for its **Guide Specifications for Structural Design with Ultra-High Performance Concrete**, 1st Edition, which was released in March 2024.

"The new structural design guidance offers a path forward," said Graybeal. "The goal is to get to the point where designing structures with UHPC is commonplace where appropriate—when the UHPC solution fits the need—and the structural design guidance is an important part of that."

MORE INFORMATION

- View the **FHWA report** on Structural Design with UHPC.
- Visit FHWA's **UHPC webpage** for links to additional resources.
- @ Contact **Ben Graybeal**, FHWA Turner-Fairbank Highway Research Center, for details on UHPC and technical assistance.



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Reconnecting Communities and Neighborhoods

A new Federal grant program is helping today's communities repair the harm caused by infrastructure choices of the past.

While interstates and highways are designed to connect travelers with their destinations, many of the multilane roadways constructed in the 1950s and 1960s also disconnected communities. Low-income and minority Americans suffered disproportionately from the destruction and division in their neighborhoods, resulting in economic, social, and mobility challenges that persist today. The U.S. Department of Transportation's new **Reconnecting Communities Pilot Program and Neighborhood Access and Equity Program** is offering communities help in addressing the negative impacts of past transportation infrastructure investments.

The Reconnecting Communities and Neighborhoods (RCN) grants are supporting transformative, community-led solutions that can

turn aging infrastructure into opportunities for improving community connectivity and cohesion. Examples include capping or removing highways, adding new transit routes, and constructing sidewalks, bridges, bike lanes, and more.

Community-Led Solutions

Two rounds of RCN awards have been released. Grant recipients include the **ReConnect Rondo** project in Saint Paul, MN, for which the funds will be used to study the planning and development of an African American cultural enterprise district and associated land bridge. The project aims to restore and reconnect a portion of the Rondo neighborhood destroyed during construction of Interstate 94 (I-94) in Saint Paul.

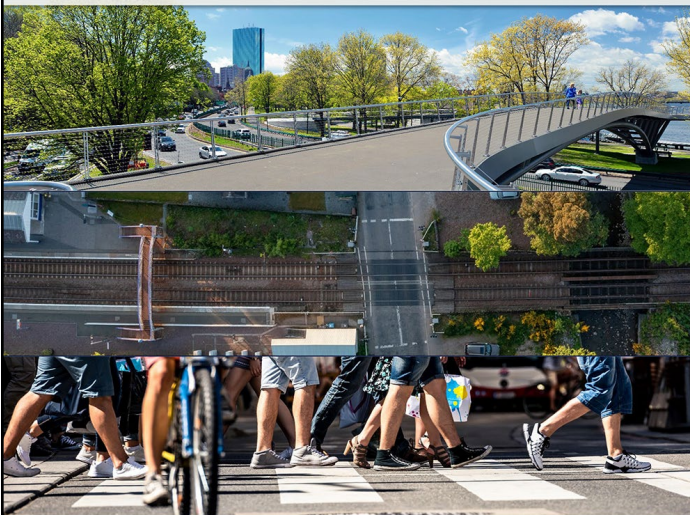
When work began on I-94 in the 1950s, the majority of Saint Paul's Black population lived in Rondo and the neighborhood contained a wide variety of small businesses catering to the community. When I-94 construction was routed directly through Rondo, the highway displaced or destroyed more than 700 homes and 300 businesses, initiating a long period of economic and social decline for the community. To ensure this new transportation project serves the needs of local residents, the ReConnect Rondo organization enlisted widespread **stakeholder engagement** that included neighborhood residents and community groups, local businesses, equity organizations, and local, State, and Federal government entities.

The city of Seattle, WA, received a grant for its **Reconnect South Park** project. The funds support a planning study on removing or restructuring State Route 99 (SR-99) where it cuts through Seattle's South Park neighborhood. Currently, an underpass on a busy street is the only at-grade crossing through the 1.5-mile stretch of highway. This barrier limits access to jobs, healthcare, and community resources and has created one of the most disadvantaged neighborhoods in the region.

A neighborhood-based coalition comprising more than 12 community organizations is

RECONNECTING COMMUNITIES & NEIGHBORHOODS (RCN) GRANT Program

FY23 Awards Factsheets



View fact sheets on the fiscal year 2022 and 2023 awards to learn about projects focused on reconnecting communities across the country.

Credit: U.S. Department of Transportation

Reconnecting Communities Institute Offers Grant Assistance

The U.S. DOT will launch a [Reconnecting Communities Institute \(RCI\)](#) in 2024 for existing grantees and entities interesting in receiving technical assistance under the Reconnecting Communities and Neighborhoods Grant Programs. The RCI will provide training and technical assistance to build organizational or community capacity in transportation planning and identify innovative strategies and solutions for reconnecting communities where transportation infrastructure has created barriers. Visit the [RCI webpage](#) for additional details on available services and eligibility.

leading the public engagement process. The goal is to develop a Community Vision Plan with strategies for improving mobility, connectivity, and health supported by both engagement and technical analysis. The coalition and city of Seattle created a GIS-based, interactive [storymap](#) to assist the engagement process.

A grant was also awarded for implementation of [the Stitch](#) project in Atlanta, GA. In the mid-20th century, the construction of Interstates 75/85, known locally as the Downtown Connector, destroyed and divided downtown Atlanta communities and resulted in the displacement of more than 40,000 individuals. The vision outlined on the [project website](#) is to reunite these communities by capping the Downtown Connector with a major new park that will offer acres of urban greenspace, add transportation improvements and sustainable infrastructure, and enhance access to affordable housing, low-cost transportation, and community resources.

The Stitch is the result of two decades of planning and community input that established the need, vision, and major design elements. The project team is using both in-person meetings and virtual engagement tools such as [interactive, GIS-based visualizations](#) to obtain community input.

Visit the U.S. DOT Reconnecting Communities and Neighborhoods Grant Program [webpage](#) to view a full list of fiscal year 2022 and 2023 project awards and two engaging StoryMaps that cover even more examples.

Opportunities to Reconnect and Revitalize

FHWA championed [Community Connections](#) during round four of the [Every Day Counts](#) (EDC-4) program. EDC-4 promoted ways to plan, design, and build transportation projects that reestablish connectivity, enhance access, and improve health and safety. The EDC-4 effort produced a [Community Connections Toolbox](#) with analytical tools and planning frameworks,

project development and design techniques, operational improvements and programs, and public involvement strategies.

Kenneth Petty, Director of FHWA's Office of Planning and an EDC-4 team co-lead, noted that RCN grants are providing an unprecedented opportunity for agencies and organizations across the country to repair or replace aging infrastructure with community connection improvements. For those getting started, building collaborative partnerships and seeking robust public involvement with a wide variety of disciplines is an important first step.

"Strong public and stakeholder involvement is critical for determining what mobility options will work best for a particular community, for example safer biking and pedestrian facilities or better access to transit," he said, "because, ultimately, transportation isn't just about moving vehicles; it's about creating communities."

MORE INFORMATION

- Visit FHWA's [Community Connections](#) webpage for links to resources.
- Explore the U.S. DOT's interactive [Reconnecting Communities StoryMap](#) about the past, present, and future of reconnecting communities as well as the [Reconnecting Communities and Neighborhoods StoryMap](#) about repairing the harm caused by infrastructure choices of the past.
- @ Contact [Kenneth Petty](#), FHWA Office of Planning, Environment, and Realty, for information and technical assistance.



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Brighter is Not Better: Emergency Vehicle Lighting Gets “Smart”

The attention-grabbing flashing lights at a traffic incident scene ahead are every driver’s cue to slow down, move over, and be cautious. However, achieving better driver visibility for responders does not always mean adding more or brighter lights to their vehicles. In fact, the Manual on Uniform Traffic Control Devices (MUTCD) warns that “the use of too many lights at an incident scene can be distracting and can create confusion for approaching road users, especially at night.”

Increasingly, traffic incident responders are looking for ways to communicate with approaching drivers while not blinding or distracting them. As part of Every Day Counts round 7 (EDC-7), the **Next-Generation Traffic Incident Management (TIM)** team is promoting a “SMART” approach to emergency vehicle lighting that can better inform roadway users, improve their ability to see roadside responders, and help them navigate around responders safely.



Credit: Colorado Department of Transportation

Example of synchronized emergency vehicle lighting.



Talking TIM
a monthly webinar on all things
traffic incident management (TIM) for our nation

February 28, 2024 | 1:30-3:00 p.m. EST

Listen to a 30-minute [presentation](#) on “Good Practices and Current Research in Vehicle Lighting for Roadway Incidents.”

Credit: National Operations Center of Excellence

SMART, which stands for Strategic placement, Meaningful messaging, Automatic features, Reduced pattern intensity, and Tiered approach, leverages emergency lighting technology that is increasingly sophisticated and customizable with the use of LED lights and computer software.

Strategic placement

Many State laws dictate acceptable colors for the lights used by different responder disciplines, and the physical placement of the lights on responder vehicles is generally constrained by the shape of the vehicle body, automotive glass, and vehicle lamps. Near the traffic incident scene, flashing lights at the approximate height of a driver’s head are most conspicuous, but if a roadside responder is visible from farther away, that means approaching drivers have more time to slow down and move over. Roof-mounted emergency lights and vehicle-mounted changeable message signs can enhance advance warning, giving drivers added distance from the scene to reduce speed and to change lanes.

Meaningful messaging

Motorists perceive red, blue, and amber in a descending order of most to least hazard present. Aside from communicating hazard, systems with a directional sequencing of lights give drivers additional visual information. For example, a sequencing of a responder vehicle's emergency lights from right to left can be recognized as a direction from emergency responders to drivers to move left, away from the shoulder.

Synchronization with other response vehicles is another important way that multiple response vehicles can work together to effectively convey a message to motorists. More than one responder vehicle displaying the sequencing lights from right to left is an even more powerful message to move left.

Automatic features

Emergency vehicle lighting systems are increasingly tied to the vehicle systems in which they are installed. Braking, doors opening, gear selection, and other vehicle functions can be linked to emergency lighting systems to elicit a specific response. For example, many fire apparatus now reduce forward facing lights when the parking brake is set, effectively reducing distraction for drivers in the opposite direction of travel.

Day and night light intensity is another way that responder vehicle lights can be adjusted automatically. Lights that are necessarily bright enough to see by drivers on a sunny day can become blinding to drivers at night.

Reduced pattern and intensity

"Visual chaos" results when there are too many lights, too many different flash patterns, and light intensity is uncomfortable. For this reason, the [National TIM Responder Training Program](#) encourages responders to reduce lighting when multiple responder vehicles are present at a traffic incident scene. A "calm" scene is considered a safer scene where emergency lights are concerned. There is no one-size-fits-all solution for emergency lights, but technology is increasingly helping with user-selectable lighting displays that match the needs of the situation.

Tiered approach

Rushing to the scene of an emergency requires lights and siren to get attention and clear the

Technology for Saving Lives



Emergency vehicle lighting is one of several technologies being promoted during EDC-7 NextGen TIM that agencies can implement to save lives.

path. Once on the scene, a calmer flash rate and fewer emergency lights can be used. The calmer scene with less modulation among lamps is viewed as a safer scene. Once temporary traffic control is in place, even fewer lights may be needed. Agency policy that addresses the use of reduced lighting is beneficial, and lighting technology is increasingly complementary to policy in helping change the use of lights in a variety of settings. Stepping lighting usage down from response mode, initial arrival activities, and at a stable scene are examples of how a tiered approach might look.

"Emergency vehicle lighting is an important technology for roadway safety," said NextGen TIM team co-lead Paul Jodoin. "Fortunately, advances in technology may help responders make better use of lights to communicate with drivers and ultimately protect both responders and motorists after traffic incidents."

MORE INFORMATION

- ▶ Watch the February 2024 [Talking TIM webinar](#) to hear strategies for effective emergency vehicle lighting.
- ▶ Visit the [EDC-7 Next-Generation TIM webpage](#) for links to more resources.
- @ Contact [Joe Tebo](#), [James Austrich](#), or [Paul Jodoin](#), FHWA Office of Operations, for details and technical assistance.



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Unlocking UAS Data: Strategies for Effective Management and Collaboration

Over the past decade, agencies across the United States and in other countries have increased their use of **unmanned aerial systems** (UAS) for a variety of applications in their infrastructure programs. UAS provide agencies with a safe, inexpensive means to collect tremendous amounts of data via onboard cameras, video, sensors, and other tools. The current challenge is how to collect the right type of data and use it effectively.

In 2019, FHWA initiated a **Global Benchmarking Program (GBP) study** that documented UAS data management approaches in Germany and the United Kingdom (U.K.) that could be implemented by U.S. agencies.

James Gray, FHWA Construction Technology Program Manager and GBP study team lead, said the study team started with a **domestic review** to identify the major challenges in this country for advancing UAS. "Data management emerged as probably one of the biggest needs going forward," said Gray. "What we learned is that we've become very good at collecting data, but what's needed are plans for how to manage the data so it provides actionable information we can use to meet actual business needs in the transportation sector."

Data Management and Digital Models

As agencies move toward using UAS-collected data to automate processes and create efficient workflows, data standards are providing the common language needed for sharing and collaboration.

As part of an effort to standardize data sharing, National Highways (NH), a government-owned company in the U.K., created a Digital Product Catalogue (DPC). The DPC is used for storing, managing, and sharing digital models of small individual construction products up to large

structures. Construction suppliers can download blank data sheets with standardized attribute fields, fill the sheet with attributes of the item being delivered, and submit the sheet to NH reviewers to upload to the DPC.

German agencies are creating datasets of annotated images showing structural defects such as cracks, spalling, corrosion, and vegetation growth. They are using the datasets to train machine learning/artificial intelligence (ML/AI) algorithms to automatically detect structural defects post-inspection, which will allow users to focus their attention on high-risk or unusual issues.

Combining digital models with ML/AI algorithms offers the opportunity to detect changes among models of the same construction asset created at different times. Identifying defects early enables preventative maintenance that results in safety improvements, cost savings, and time savings.

Asset Lifecycle Management

NH has employed a Rapid Engineering Model (REM) platform that integrates engineering standards, as well as topographic and environmental data from inspection and survey tools such as UAS, with a digital model of a construction site, project, or environment for lifecycle management. For existing projects, REM displays an annotated construction environment showing potential safety hazards, whether individual construction elements meet design standards, and visualizations of proposed or planned modifications. For new projects, REM has accelerated routine design at project start and reduced overall design time and cost by up to 80 percent.

German agencies have also developed a framework for systematic data generation and processing to support scaling UAS operations



Example of a 3D model of a bridge produced using photogrammetry data from a UAS.

for the construction lifecycle. The framework includes the visualization of UAS flight trajectories and optimization to meet the data quantity, data quality, digital model resolution, and other inspection requirements for structures.

“From preliminary design all the way to operations and maintenance, the key thread in these examples from the U.K. and Germany is the use of a common data standard,” said Gray. “Having a common standard will allow agencies to generate consistent, repeatable, standardized datasets that yield benefits throughout the assets’ lifecycle.”

Safety and Operations Improvements

The GBP study also highlighted the safety and operational benefits German and U.K. agencies are realizing from their UAS programs.

NH is evaluating a new practice for confined space bridge inspections using small UAS. In this case, only the remote pilot-in-command, visual observer, and support engineers (who do not need to be UAS remote pilots) are required onsite. The bridge inspector can evaluate photos and video onsite or remotely. This practice reduces risk by using fewer personnel (traditionally four inspectors entering the bridge deck plus four rescue crew) and reduces the required time from a few days to hours.

In Germany, the Port of Hamburg is employing remote UAS operations with a “drone-in-a-box” docking system complete with shelter, box beacon, landing pad, and battery charging. The UAS launches autonomously from its box, and the box receives and transmits data with the port’s UAS Integrated Command Center.

In addition to reducing safety risk to workers performing inspections, the port reported that the UAS docking system resulted in 60-percent cost savings and 70-percent time savings for inspecting port infrastructure, gantry cranes, and shipping containers.

Two of the States involved in the GBP study, California and North Carolina, are already adopting some of these proven practices from the U.K. and Germany. Both the North Carolina Department of Transportation (DOT) and California DOT plan to pilot the UAS docking technology. In addition, the California DOT will use a 2023 FHWA [Advanced Digital Construction Management Systems](#) grant to develop its own Digital Products Catalog, using the NH system as a model.

MORE INFORMATION

- 📄 Read the [GBP study report](#) on use of UAS to enhance transportation infrastructure.
- 🎧 Listen to an [FHWA webinar](#) on the GBP study with presenters from Germany and the United Kingdom (Passcode: 1sosBA?=").
- Visit the FHWA [UAS website](#) for links to more resources.
- @ Contact [James Gray](#), FHWA Office of Infrastructure, for additional details.



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States **innovate!**

Federal Lands Highway Expedites Bridge Deck Repairs with Ultra-High Performance Concrete

As part of the North Parkway Rehabilitation project in Washington D.C., FHWA's Office of Federal Lands Highway (FLH) needed to replace existing deck overlays to extend service life on two bridges along the George Washington Memorial Parkway while keeping the roadway open. According to the [project website](#), the northern section of the parkway, which was originally completed in 1962, has never undergone major rehabilitation and is the busiest section of parkway, serving about 26 million drivers annually. FLH chose to use **ultra-high performance concrete** (UHPC) as the overlay treatment for the deck repair to provide durability and avoid lengthy shutdowns due to its quicker curing time than conventional concretes. Learn more in the [January 2024 issue](#) of the FHWA R&T Now newsletter.

Ohio Tests Advanced Unmanned Aerial Systems Operations

The Ohio Department of Transportation's (ODOT's) Uncrewed Aircraft Systems Center

recently received approval from the Federal Aviation Administration (FAA) to test advanced **unmanned aerial system** (UAS) operations over a portion of the U.S. 33 corridor northwest of Columbus. FAA permission was needed to operate the UAS beyond the pilot's sight, known as beyond visual line of sight (BVLOS) operations. **ODOT reported** that the FAA approval is valid for 4 years and will help facilitate integration of live drone footage to its Traffic Management Center. The tests on U.S. 33 will help determine the benefit of replicating this approach statewide to aid emergency response and traffic monitoring.

Tennessee Promotes Planning and Environmental Linkages

The Tennessee Department of Transportation (TDOT) hosted a virtual public engagement event during April to introduce a **Planning and Environmental Linkages** (PEL) Study on its Downtown Nashville Interstate Corridors project. TDOT is using the collaborative **PEL approach** to determine strategies for relieving congestion on the interstate network leading into and surrounding downtown Nashville. Due to the size and diversity of the corridor, the agency kicked off



Credit: Ohio Department of Transportation

The Ohio DOT recently received approval from the Federal Aviation Administration to fly a large unmanned aerial system over a portion of highway near Columbus.

the PEL study with a **30-day virtual event** to encourage public involvement and provide a convenient way to learn about the study objectives, see existing conditions within the study corridor, and provide feedback prior to a public information meeting planned for later this year.

Oklahoma Adds Diverging Diamond Interchange

A major intersection improvement project at the Interstate 35-State Highway 9W interchange near Norman, OK, will result in the State's third **diverging diamond interchange** (DDI). The Oklahoma Department of Transportation (ODOT) is also adding two **roundabouts** on the State Highway 9W service roads. ODOT's **news release** noted that DDIs create safer, less congested intersections that allow for fewer conflict points, give drivers better sight distance at turns, provide shorter pedestrian crossings, and make wrong-way entry to ramps extremely difficult.

Pennsylvania Progresses with CHANGE

During Every Day Counts rounds four and five, the **Collaborative Hydraulics: Advancing to the Next Generation of Engineering** (CHANGE) initiative promoted next-generation hydraulic tools that can improve understanding of complex interactions between river or coastal environments and transportation assets, particularly two-dimensional (2D) modeling and graphical visualization features.

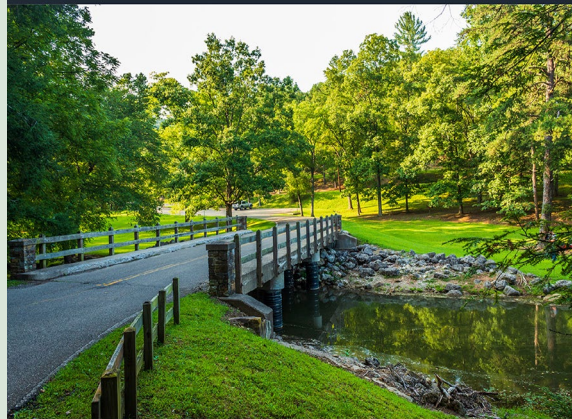
The Pennsylvania Department of Transportation (PennDOT) has continued advancing CHANGE on a variety of bridge projects across the State. In December, PennDOT provided an **update** on four bridge projects in various stages of completion that incorporated 2D modeling. The article noted that extreme weather events place added pressure on designers to incorporate better resiliency into infrastructure, and 2D modeling helps provide infrastructure engineers with valuable, verifiable data to support design decisions. Find out more on the **PennDOT Way** blog.



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Build a Better Mousetrap

NATIONAL RECOGNITION PROGRAM FOR TRANSPORTATION INNOVATION



CENTER FOR LOCAL AID SUPPORT

Credit: FHWA

Nominations Open for Build a Better Mousetrap

FHWA is currently taking nominations for the 2024 **Build a Better Mousetrap** national recognition program. Build a Better Mousetrap recognizes State and local government and Tribal agencies that use homegrown innovations to improve safety in their transportation programs. Many of these ideas come from frontline workers who are looking for better ways to get the job done while saving money and time and improving efficiency.

Last year's Build a Better Mousetrap highlighted 53 innovations that can be found in the **2023 entries booklet**. Winning innovations included a road diet to preserve a historic bridge, a mobile sensing unit to improve rural road safety, software to improve maintenance of traffic signals, and solar-powered remote cameras for monitoring road conditions during winter storms.

Agencies must contact their State's Local Technical Assistance Program (**LTAP**) Center or regional Tribal Technical Assistance Program (**TTAP**) Center for more information and assistance on the application. Nominations are due to FHWA by June 7, 2024. View the **2024 Build a Better Mousetrap Planning Guide** to learn more.

INNOVATOR

INNOVATOR, published by the FHWA's Office of Innovation and Workforce Solutions, advances the implementation of innovative technologies and accelerated project delivery methods in highway transportation.

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EDC Outtakes: Next-Generation TIM

State departments of transportation (DOTs) use 511 systems to provide current travel condition information to the public via phone, websites, and now voice assistant platforms such as Alexa and Google. The use of voice assistants allows drivers with this technology in their vehicles to ask for real-time traffic and travel information hands-free, without needing to take their eyes off the road.

The graphic features a clapperboard on the left with the text "Every Day Counts" and "Outtakes Next-Generation TIM: Technology for Saving Lives". To the right is a portrait of Sal Cowan, Senior Director of Transportation Mobility for the New Jersey DOT. Below the portrait is his name and title. At the bottom, there is a blue banner with the text: "Watch an [EDC Outtake](#) to hear how voice assistant platforms can expand the reach of 511 systems." The U.S. Department of Transportation Federal Highway Administration logo is also present.

Credit: FHWA

In this **Every Day Counts** (EDC) Outtake, Sal Cowan, Senior Director of Transportation Mobility for the New Jersey DOT, talks about the impact of this technology in New Jersey, which was one of the first States to connect its 511 system to voice assistant platforms. Learn more about this and other advanced technologies that agencies can use to increase traveler and responder safety from the **EDC-7 Next-Generation Traffic Incident Management** (TIM) team.

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