



## FHWA Announces the Next Round of Every Day Counts Innovations

*Edited by Airton Kohls (Source: EDC News Weekly Newsletter)*

Every Day Counts (EDC) is a state-based model that identifies and rapidly deploys proven, yet underutilized innovations to shorten the project delivery process, enhance roadway safety, reduce traffic congestion, and improve environmental sustainability. Proven innovations promoted through EDC facilitate greater efficiency at the state and local levels, saving time, money and resources that can be used to deliver more projects. The EDC program has made a significant positive impact in accelerating the deployment of innovations and in building a culture of innovation within the transportation community.

Since the inception of EDC in 2011, each state has used 14 or more of the 43 innovations promoted through Every Day Counts, and some states have adopted more than 30. Many of these innovations have become mainstream practices across the country, like the Safety Edge, Adaptive Signal Control Technology, High Friction Surface Treatment, Road Diets, Smarter Work Zones and Automated Traffic Signal Performance Measures, to name a few.

FHWA will promote the following 10 technologies and practices in the fifth round of Every Day Counts (EDC-5):

1. **Advanced Geotechnical Exploration Methods** offer solutions for generating more accurate geotechnical characterizations that improve design and construction, leading to shorter project delivery times and reducing the risks associated with limited data on subsurface site conditions.
2. The 2D hydraulic modeling and 3D computer visualization technologies featured in **Collaborative Hydraulics: Advancing to the Next Generation of Engineering (CHANGE)** provide a more comprehensive understanding of complex flow patterns at river crossings versus traditional modeling techniques, facilitate more effective communication and collaboration, and improve agencies' ability to design safer and more cost-effective and resilient structures on waterways.

*continued on page 3*

## TTAP Innovation Survey

FHWA has partnered with transportation stakeholders across the country to select 10 innovations for inclusion in the 5th round of Every Day Counts (EDC). You're going to be hearing a lot about these EDC-5 innovations over the next two years, but we want to know which ones are of greatest interest to you. Your feedback is important as we will use the survey results to guide our choices regarding EDC-related newsletter articles and training opportunities. Please complete the survey at <https://tiny.utk.edu/UE4ub> (this link will automatically redirect you to the SurveyMonkey website).

## In this issue...

FHWA Announces the Next Round of Every Day Counts Innovations.....	1
TTAP Innovation Survey .....	1
From the Director .....	2
Safe Transportation for Every Pedestrian (STEP).....	4
High Visibility Safety Apparel .....	5
FHWA and AASHTO Reach Agreement to Provide Free Online Training to Local Agencies .....	7

# From the Director

In the minds of many, Labor Day marks the unofficial transition from summer to fall. Apparently Mother Nature doesn't want to play along with this plan, as evidenced by the hot and humid weather predicted for the first full week of September. Soon enough the weather will come around, bringing cool mornings and fall colors before winter arrives in a few months. I feel obliged to mention the Vols, so let's just say that I hope that the team and our new coaching staff make some quick adjustments before SEC play begins.

You may notice an emphasis on innovation in this issue of RoadTalk. It's a word that comes up with increasing frequency in my world. Merriam-Webster.com defines innovation as "the introduction of something new" or "a new idea, method or device." Innovation is synonymous with change. While change can carry negative connotations, innovation is generally used in a positive context to describe improvement or advancement. I have chosen to adopt the latter view of innovation in the transportation industry. Most, if not all, transportation agencies cannot adopt every innovation. However, we cannot attain goals to provide a safe, reliable, effective, and sustainable roads without some degree of innovation.

Within this newsletter, we see innovation on a large scale as shown in FHWA's Every Day Counts (EDC) program. Much work on the part of FHWA, state departments of transportation, and other transportation stakeholders has gone into the selection of the 10 transportation innovations that you see detailed in our front page story. Over the next three months FHWA will convene five regional EDC summits to provide more detail regarding these innovations, provide real-world examples where these innovations have delivered benefits, and secure commitments from the states to explore, evaluate, and implement some or all of these practices.

This sounds great, but how does EDC effect you? If you work for TDOT (or another state DOT) the relationship is relatively clear. For those in local government, the influence of EDC may be less obvious. Some innovations may spread via a trickle-down effect as state DOT policies and standards change over time. Other innovations may be implemented as the result of a partnership between state and local officials, as could be the case with Virtual Public Involvement. In some cases, innovations such as Value Capture are intended exclusively for the benefit of local agencies. Regardless of the path that an innovation takes between concept and implementation, I think that I would find little argument that change (and improvement) plays an increasingly-prominent role in the world around us.

Some say that the only constant is change. While TTAP cannot stop the march of time, we can give you a say in which innovations you're going to see featured here in RoadTalk. We've selected Safe Transportation for Every Pedestrian (STEP) as the first EDC-5 innovation to enter the spotlight, but we're just scratching the surface. We want to hear from you regarding which innovations merit more attention. Please take two or three minutes to complete TTAP's Innovation Survey at <https://tiny.utk.edu/UE4ub>. It's important to me that you view innovation as a positive force in your workplace, and being able to prioritize these innovations using your input is a great first step in that direction.

That's all I have for this issue. Let's hope that the weather (and UT's football season) have taken a turn for the better by the time you see the Fall 2018 issue of RoadTalk. In the meantime, please let me know if there is anything else that TTAP can do to help you.



3. **Project Bundling** helps agencies streamline design and construction, reduce costs, and effectively decrease transportation project backlogs by awarding a single contract for several similar preservation, rehabilitation, or replacement projects.

4. **Reducing Rural Roadway Departures** highlights systemic application of proven roadway departure countermeasures, such as rumble strips, friction treatments, and clear zones, to help keep vehicles in their travel lanes, reduce the potential for crashes, and reduce the severity of those crashes that do occur.



*Signage, pavement markings and rumble strips are a few of the countermeasures listed on the Reducing Rural Roadway Departures initiative from EDC-5. (Source: FHWA)*

5. **Safe Transportation for Every Pedestrian (STEP)** features several cost-effective safety countermeasures already available to assist practitioners in providing safer crossings for all pedestrians.

6. **Unmanned Aerial Systems (UAS)** are relatively low-cost devices that allow agencies to expedite the data collection needed for better-informed decisions while reducing the adverse impacts of temporary work zones on work crews and the traveling public.



*Using Unmanned Aerial Systems for bridge inspections is one of the safety benefits of the UAS initiative from EDC-5. (Source: FHWA)*

7. **Use of Crowdsourcing to Advance Operations** shows how new sources of crowdsourced traffic data enables better management and operation of the transportation system through faster detection of and response to problems, faster and more accurate traveler information to the public, and more proactive and effective operations strategies.

8. **Value Capture: Capitalizing on the Value Created by Transportation** describes a variety of mechanisms that may be used to derive monetary value from transportation improvements to help defray the cost of their implementation.

9. **Virtual Public Involvement** techniques, such as telephone town halls and online meetings, offer convenient, efficient, and low-cost methods for informing the public, encouraging their participation, and receiving their input.

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*continued on page 4*

**10. Weather-Responsive Management Strategies** support state and local transportation agencies in deploying improved traffic control and traveler information systems that will significantly reduce highway crashes and delays resulting from adverse weather and promote anti-icing strategies for reducing chloride use.

Transportation leaders will gather at regional summits this fall to review the EDC-5 innovations and identify those that fit the needs of their programs. Our region will meet in Orlando on November 27 and 28. EDC-5 deployment teams will offer technical assistance, training, and resources to help transportation stakeholders adopt the innovations in 2019 and 2020.

For additional information go to: <https://www.fhwa.dot.gov/innovation/everydaycounts/>

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## Safe Transportation for Every Pedestrian (STEP)

*Edited by Airtion Kohls (Source: FHWA EDC-5 Innovations)*

According to the National Highway Traffic Safety Administration (NHTSA), 2016 witnessed the most pedestrian fatalities since 1990. Nationally, pedestrians accounted for approximately 16 percent of all roadway fatalities (5,987 of 37,461 deaths), and the vast majority of these occurred as pedestrians crossed the roadway at both midblock and intersection crossing locations (72 percent occurred away from intersections and only 18 percent at intersections). In Tennessee, pedestrians account for 12% of those killed in 2017 traffic crashes (126 of 1,042 deaths). More importantly, Tennessee's pedestrian traffic fatalities have increased by almost 45% since 2013.

Pedestrian safety is a significant and complex issue, but there are tools available to help protect those who walk along our streets and highways. Cost-effective countermeasures like those included in Safe Transportation for Every Pedestrian (STEP), a featured innovation in the Federal Highway Administration's Every Day Counts (EDC) program, can be systemically applied at uncontrolled and signalized pedestrian crossing locations to reduce the occurrence these crashes and save lives.

### **Pedestrian Safety Countermeasures**

Uncontrolled crossing locations may have inadequate pedestrian crossing facilities, creating barriers to safe, convenient, and complete pedestrian networks. At signalized intersections equipped with pedestrian signals, conflicts with turning vehicles may occur when pedestrians see a walk signal and vehicles see a left turn signal. By focusing on all pedestrian crossing locations, urban and rural, agencies can comprehensively address a significant national safety problem and improve quality of life for pedestrians of all ages and abilities. The following countermeasures can improve pedestrian safety when used in the appropriate roadway context.

**Leading pedestrian intervals (LPIs)** at signalized intersections allow pedestrians to walk, usually for 3 to 4 seconds, before vehicles get a green signal to turn left or right. The LPI increases visibility, reduces conflicts, and improves yielding. Communities across the Nation are benefitting by using LPI. In New York City, the effects of this treatment were dramatic. Where LPIs were installed, the overall number of pedestrians and bicyclists killed or severely injured dropped 37 percent. LPI use in Florida also yielded positive results, including reducing the percentage of vehicle-pedestrian conflicts between 25 and 100 percent at different intersections. **This Fall, TTAP will be reaching out to local agencies throughout the State of Tennessee to promote the leading pedestrian interval. We will have presentations, on-site demonstrations, and printed materials to help your local agency adopt this simple traffic signal controller technology.**

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*continued on page 5*

**Road diets** can reduce vehicle speeds and the number of lanes pedestrians cross, and they can create space to add new pedestrian facilities such as pedestrian crossing/refuge islands.

**Rectangular rapid flashing beacons** (RRFBs) are active (user-actuated) or passive (automated detection) amber LEDs that use an irregular flash pattern at mid-block or uncontrolled crossing locations. They significantly increase driver yielding behavior. The RRFB has greatly increased driver yielding rates in several communities, and a recent study demonstrated that it can reduce pedestrian crashes. RRFBs can be extremely effective at trail crossings or near schools.

**Pedestrian hybrid beacons** (PHBs) provide positive stop control in areas with high pedestrian traffic volumes. The PHB is an intermediate option between a flashing beacon and a full pedestrian signal.

**Pedestrian crossing/refuge islands** allow pedestrians a safer place to stop at the midpoint of the roadway before crossing the remaining distance. This is particularly helpful for older pedestrians or other pedestrians with limited mobility. The refuge island (Danish offset design) combats pedestrian distraction as it guides them to view oncoming traffic before they cross.

**Raised crosswalks** can serve as a traffic calming measure and reduce vehicle speeds. Crosswalk visibility enhancement, such as crosswalk lighting and enhanced signage and markings, help drivers detect pedestrians—particularly at night.

FHWA has included STEP as one of the innovations on the fifth round of Every Day Counts. Many Tennessee cities and counties have already implemented one or more of these pedestrian safety innovations. If you want to learn more about the potential safety and quality of life benefits provided by these cost-effective countermeasures, please visit FHWA's Every Day Counts website at: [https://www.fhwa.dot.gov/innovation/everydaycounts/edc\\_5/step2.cfm](https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/step2.cfm)

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## High Visibility Safety Apparel

*Edited by Frank Brewer (Source: <https://www.osha.gov/SLTC/personalprotectiveequipment>)*

Personal protective equipment, commonly referred to as “PPE”, is equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards. Personal protective equipment may include items such as gloves, safety glasses and shoes, earplugs or muffs, hard hats, respirators, coveralls, vests and full body suits. For those who work in the transportation industry, the first form of PPE to come to mind is generally High-Visibility Safety Apparel (HVSA). HVSA garments are commonly referred to as the “safety vests.” However, that is actually only one type.



Sample Class 2 garments & sample label



continued on page 6

### What is HVSA?

HVSA standards are set by the American National Standards Institute, or ANSI, in its American National Standard for High-Visibility Safety Apparel and Accessories (ANSI/ISEA 107-2015). ANSI/ISEA 107 is a regulatory requirement for most transportation workers due to its inclusion by reference in the 2009 Edition of the Manual on Uniform Traffic Control Devices (MUTCD). Section 6D.03, Paragraph 04 of the MUTCD states:

*All workers, including emergency responders, within the right-of-way who are exposed either to traffic (vehicles using the highway for purposes of travel) or to work vehicles and construction equipment within the TTC zone shall wear high-visibility safety apparel that meets the Performance Class 2 or 3 requirements of the ANSI/ISEA 107–2004 publication entitled “American National Standard for High-Visibility Safety Apparel and Headwear” (see Section 1A.11), or equivalent revisions, and labeled as meeting the ANSI 107-2004 standard performance for Class 2 or 3 risk exposure, ...*

The minimum acceptable garment for these workers is Class 2. It is referred to as the ‘safety vest’ as it sleeveless. Class 3 garments are recommended for higher speed roadways (greater than 50 mph) or during night-time operations. Regardless of the size of a garment, a Class 3 garment must have sleeves.

Class 2 and Class 3 garments must have specific background colors, specific retroreflective colors, and specific minimum surface area for retroreflective material. There are several retroreflective patterns and colors available. The approved background colors currently are: fluorescent yellow-green, fluorescent orange-red, or fluorescent red. For within the right-of-way use the Class 2 or Class 3 compliant HVSA garment may be a mesh Over-garment style, Tear-away, Tee-shirt style, Polo style shirt, Button-up style shirt, or Foul Weather garment. Also available are garments with reduced specifications to fit the smaller frame worker.

All HVSA garments must carry a label indicating ANSI-ISEA compliance. This label indicates which ANSI-ISEA standard applies, the performance Class of garment, its photometric performance level, and includes washing instructions. The garments will get dirty, they do not have to stay dirty. The washing life statement is a guideline. During successive washings, the retroreflective material may breakdown. Garments that are soiled or torn to the point they no longer function as designed need to be replaced.

The purpose of HVSA is to make the wearer visible to the road users, in all types of light levels and different weather conditions. Worker visibility is enhanced by providing high contrast between the garment and the ambient background against which it is seen. Additionally the garment should provide 360° of visible coverage. Should only the mesh over-garment style be used, it should be large enough to fit over the workers foul weather gear. If the road user can see you early enough they should have the time and opportunity to avoid hitting you. During nighttime operations



*What a driver would see under different lighting levels.*

*continued on page 7*

the Class 2 garment is visible up to 1,000 feet from the light source (the road user's vehicle head lights); the Class 3 garment provides visibility out to 1,280 feet.

### Why should I wear HVSA?

You are special. You work in a very hazardous environment. You are very fragile in comparison to a vehicle or heavy equipment. What may seem like an uncomfortable inconvenience is designed to protect you. Safety glasses protect your eyes from flying objects. Hard hats protect you from overhead hazards or falling objects. HVSA allows drivers and coworkers to see you as a person, not as a piece of equipment or a traffic control device. Many of these road users do not expect to see workers alongside or within the roadway. They do not understand the danger that their speed poses to you or how long it would take to stop their vehicles. The earlier they see you, the more time they will have to adjust their speed or maneuver their vehicle. The road users deserve to go home after their work day. You also deserve to go home at the end of your work day! Using HVSA greatly increases that probability. If you have any questions regarding PPE in general or HVSA in particular, please contact me at 865-974-8251 or fbrewer1@utk.edu.

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## FHWA and AASHTO Reach Agreement to Provide Free Online Training to Local Agencies



By Matt Cate, P.E.

In June, the Federal Highway Administration (FHWA) and the American Association of State Highway and Transportation Officials (AASHTO) finalized an agreement that provides local and tribal transportation officials across the country with free access to AASHTO's Transportation Curriculum Coordination Council (TC3) library. If you work for a Tennessee city, town, or county, you are eligible to take advantage of this opportunity to access over 120 online training courses. Available categories include Construction, Employee Development, Maintenance, Materials, Pavement Preservation, and Traffic and Safety.

To browse and access TC3 course offerings, please go to <https://tc3.transportation.org/>. You will need an AASHTO account to access the FHWA sponsored online training courses. If you have not previously registered for an AASHTO account, please go to <https://register.transportation.org>, select Register, and then enter your email address to create an AASHTO account. Please use your agency email address to register.

Once you've created your AASHTO account, please follow the steps below and use the provided promotion code to access the FHWA-sponsored training courses:

1. Go to <https://training.transportation.org> and enter your email address and password on the left menu to Log In.
2. Search through the available training courses to select the course(s) that you would like to access and add them to the Shopping Cart.
3. When you are ready to checkout, click Shopping Cart on the top menu, enter promotion code D5X3-B3D9-52CB-4XCX, and select Apply.
4. Click Checkout to proceed with placing the order.

To launch purchased training courses, select My Training from the menu at the top of the page. This will display a list of purchased courses that you can complete.

Please retain the provided promotion code (D5X3-B3D9-52CB-4XCX) for future purchases. You will need to provide this code with every transaction to receive free TC3 training. If you have questions or need additional information, please use the "Contact Us" form at <https://training.transportation.org/support.aspx> to submit your support request or question.

Tennessee Transportation Assistance Program  
Center for Transportation Research  
The University of Tennessee  
309 Conference Center Building  
Knoxville, TN 37996-4133  
Ph. (865) 974-5255/(800) 252-ROAD  
Fax. (865) 974-3889  
Email. [TTAP@utk.edu](mailto:TTAP@utk.edu)  
Web. <http://ttap.utk.edu>

Non-Profit Org.  
U.S. Postage  
**PAID**  
Permit No.481  
Knoxville, TN



## TALK TO TTAP

Email: [TTAP@utk.edu](mailto:TTAP@utk.edu)

Web: <http://ttap.utk.edu>

Tel: 865-974-5255/800-252-ROAD

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Matt Cate, P.E., Director

865-974-4614 ([mcate@utk.edu](mailto:mcate@utk.edu))

Dr. David B. Clarke, P.E.,

Director Emeritus

865-974-1812 ([dbclarke@utk.edu](mailto:dbclarke@utk.edu)).

Frank Brewer, Training Coordinator

865-974-8251 ([fbrewer1@utk.edu](mailto:fbrewer1@utk.edu))

Dr. Airton G. Kohls, Engineer

865-974-0298 ([akohls@utk.edu](mailto:akohls@utk.edu))

Daniel Herman, Technician

865-974-4608 ([dherman2@utk.edu](mailto:dherman2@utk.edu))

Spence Meyers, Database, Website &  
Technical Assistance

865-974-6168 ([meyers@utk.edu](mailto:meyers@utk.edu))

Jenny Jones, RoadTalk Editor

865-974-6549 ([gohjones@utk.edu](mailto:gohjones@utk.edu))

Diana Webb, Course Registration

865-974-5255 ([dwebb21@utk.edu](mailto:dwebb21@utk.edu))

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