

2021 NATIONAL ROADWAY SAFETY AWARDS WINNERS

Recognizing proven lifesaving achievements by
public agencies across the United States



2021 Noteworthy Practices Guide

LETTER FROM THE FEDERAL HIGHWAY ADMINISTRATION

It is my pleasure to join the Roadway Safety Foundation (RSF) in announcing the winners of the 2021 National Roadway Safety Awards competition. Every two years, State and local agencies from across the country are asked to showcase the important work they are doing to improve roadway safety and save lives. Projects that exemplify innovative and effective safety activities are honored with this prestigious award.

I would like to encourage you to read through this Noteworthy Practices Guide, which summarizes each winning project.

From safety plans, to safety tools, to Complete Streets, to technology that helps identify conflict points, this Guide highlights roadway safety achievements that are helping to move the United States towards zero deaths and serious injuries on our nation's roadways. It is our desire that a review of the noteworthy practices showcased here will generate new ideas for others.

Everyone deserves to feel safe and be safe on our roads, no matter how they travel on the roadway system. The responsibility to create this safe system belongs to all of us. I would like to thank all our 2021 award applicants for sharing their work that moves us towards zero fatalities and serious injuries for all road users. Congratulations to our distinguished group of winners!

Thomas D. Everett
Executive Director
Federal Highway Administration

This guide highlights roadway safety achievements that are helping move the United States towards zero deaths and serious injuries on the nation's roadways.

**U.S. Department of Transportation
Federal Highway Administration**

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U.S. Department
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**Federal Highway
Administration**

2021 National Roadway Safety Awards

LETTER FROM THE ROADWAY SAFETY FOUNDATION

When we last gathered to celebrate the National Roadway Safety Awards, we took so much for granted about the occasion. Winners traveled to Washington, DC from five states for a luncheon at the U.S. Capitol. We gathered for a meet-and-greet the night before, and didn't think twice about shaking hands. How blissfully naïve we were in the autumn of 2019.

The Roadway Safety Foundation and Federal Highway Administration (FHWA) have been recognizing outstanding safety projects and programs for over 20 years, but I have never been more grateful for this collaboration than I am this year. The pandemic upended every aspect of life, and the road safety community was no exception. Lockdowns meant plunging travel and the evaporation of fuel and tax revenues that our State and local agencies rely on to sustain their critical functions. Meanwhile, transportation infrastructure was reconfigured to accommodate outdoor activities and social distancing,

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and deaths and injuries on our highways skyrocketed for reasons that may take us years to fully understand. To be frank, we didn't quite know what to expect when we issued our Call for Nominations for the Awards back in January.

I am delighted to report that our batch of applicants this year is one of the most impressive yet. We saw a nearly 60 percent increase in overall nominations, and much stronger representation from smaller, non-state level applicants like our Metropolitan Planning Organizations

(MPOs), townships, and counties. This is a testament to the fact that despite all the challenges, our public agencies have soldiered on and found new ways to triumph. In this edition of the Noteworthy Practices Guide, for example, you'll read about infrastructure improvements in a small town of less than 15,000 people, and planning successes in the most populous state in the union. You'll learn about how a city is using cutting-edge video analytics technology to achieve its Vision Zero objectives, and how a state is prolonging the life of one of the simplest and most familiar safety features – pavement markings. And that's not the half of it.

We couldn't do all of this without the tremendous team at FHWA. Additionally, we had one of the largest blue-ribbon panels of judges in program history this year, all of whom volunteered their time and coped with compressed timelines and our first-ever virtual panel discussion.

My thanks and congratulations to all!

Gregory Cohen, P.E.
Executive Director
Roadway Safety Foundation

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2021 Noteworthy Practices Guide

TABLE OF CONTENTS

INFRASTRUCTURE AND OPERATIONAL IMPROVEMENTS WINNERS (I&O)

- Florida Department of Transportation5
- North Carolina Department of Transportation6
- Village of Whitefish Bay, Wisconsin7

PROGRAM PLANNING, DEVELOPMENT, AND EVALUATION WINNERS (PPDE)

- City of Bellevue, Washington.....8
- Broward Metropolitan Planning Organization, Florida.....9
- California Department of Transportation10
- Texas Department of Transportation and
Texas A&M Transportation Institute11

HONORABLE MENTIONS

- Florida Department of Transportation.....12
- Montana Department of Transportation.....13
- Town of Portland, Connecticut.....14

Examples of winning entries from past competitions can be found at www.roadwaysafety.org/programs/national-roadway-safety-awards

WINNER (I&O): Arterial Work Zone Safety

The Safety Problem: Limited application of smart work zone technologies and research on state roads and arterials, despite a greater number of work zone-related fatalities occurring on these roads than on other road types such as freeways

The Solution: A multi-organization partnership to implement and study various smart work zone applications, including Active Work Zone Awareness Devices and iCone products

The Result: Effective reduction of travel speeds and risky driving behaviors for vehicles approaching arterial work zones using Active Work Zone Awareness Devices (AWAD) with law enforcement support

Work zone and worker safety are of vital concern to transportation agencies, the construction industry, and the motoring public. In Florida, speeding in work zone areas accounts for 31 percent of fatal work zone crashes. Despite this, limited smart work zone (SWZ) applications and studies to date have focused on arterials and other non-freeway locations. To close this research and implementation gap, the Florida Department of Transportation (FDOT) District 7 led and managed an innovative arterial work zone safety project in partnership with FDOT's safety team, the Center for Urban Transportation Research (CUTR) at the University of South Florida, and the Florida Work Zone Safety Coalition.

This innovative project sought successful engineering solutions to effectively address the major problems of speeding and unsafe behaviors in arterial work zones. FDOT and CUTR worked closely to plan, coordinate, implement, and evaluate proposed smart work zone applications under many test scenarios at six study sites. The technologies studied included the Active Work Zone Awareness Device (AWAD) and two iCone products. The AWAD is a relatively low-cost countermeasure that consists of a radar device with LED signs mounted on a trailer that warns approaching drivers of an active work zone,



AWAD installed on portable trailers ready for deployment to work zones. Photo courtesy FDOT.

In Florida, speeding in work zone areas accounts for 31 percent of fatal work zone crashes.

arterial work zones by 10.6 percent; for driver behavior improvement, the deployment of the AWAD alone increased safe driving behavior by 39 percent and reduced risky driving by 34 percent. Even greater successes were seen when combining AWAD with enhanced law enforcement efforts. These positive findings represent the first time that the AWAD and iCone smart work zone devices have been studied in arterial work zones and point to promising opportunities for improving work zone and worker safety.

Agency:
Florida Department of Transportation (FDOT)
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notifies them of their travel speed, and contains regulatory messaging. Also studied were two iCone boxes – one connected to an AWAD, the other to an arrow board – which create digitally-connected work zone and traffic control infrastructure and deliver relevant messaging to users of the Waze navigation app.

Two types of data were collected and analyzed in this study: approaching vehicle speeds and driver behaviors. Evaluation results demonstrated that for vehicle speed reduction, the deployment of the AWAD alone reduced approaching vehicle speeds entering

WINNER (I&O): Long-Life Pavement Markings Safety Initiative

The Safety Problem: Nearly 14,000 fatal and serious-injury lane departure crashes occurred on North Carolina’s roads from 2015 through 2019

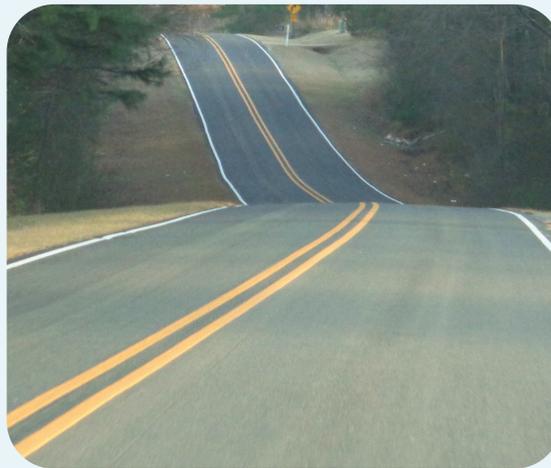
The Solution: The North Carolina Department of Transportation implemented and evaluated a variety of types of long-life pavement markings on rural, two-lane roads to study their longevity, safety return, and overall cost-effectiveness

The Result: A statistically-significant 13 percent reduction in lane departure crashes across all sites treated with long-life markings, with higher benefits observed from wider markings; additionally, the long-life markings provide five to seven years of enhanced delineation

Lane departure crashes are one of the most over-represented fatal and serious injury crash types on North Carolina’s roadways. They comprise 55 percent of fatal and serious injury crashes in the state, with almost 14,000 such crashes occurring from 2015 to 2019. With over 80,000 miles of roadway under its jurisdiction, the North Carolina Department of Transportation (NCDOT) is responsible for one of the nation’s largest highway systems, and is proactively looking for low-cost and high-return safety solutions to prevent lane departure crashes and drive down fatal and serious injury trends.

To this end, NCDOT undertook an effort to investigate, install, and evaluate a promising low-cost solution on rural, two-lane roadways: long-life pavement markings. Designed to provide improved roadway delineation and motorist guidance, these markings are available in a variety of widths, media, and materials, so NCDOT sought to determine the safety return, longevity/durability, and cost-effectiveness implications of each type.

All types of long-life markings demonstrated crash reductions: Across all sites treated with the countermeasure (over 400 miles of roadway), NCDOT found a statistically significant 13 percent reduction in lane departure crashes. The best safety results, however, were seen with wider, 6-inch markings with standard beads, which



An application of long-life double centerline markings on North Carolina State Route 1131. Photo courtesy NCDOT.

were found to reduce lane departure crashes by statistically significant 19 percent. Additionally, the long-life markings are expected to provide a minimum of five to seven years or more of adequate retroreflectivity and pavement delineation, compared with a maximum of two years or so from standard markings. Though the benefit cost ratio (BCR) varies depending on the specific type of marking used, potential

BCRs up to 60:1 were estimated.

According to State Traffic Engineer J. Kevin Lacy, “Although long-life markings cost more initially ... [i]n the long term, the overall cost for marking a roadway is less when utilizing a long-life marking. Reducing the need to replace markings as frequently decreases the repeated exposure to pavement marking crews operating in the road. This provides another safety benefit in addition to driver safety.”

The significant safety results inspired a statewide safety initiative, currently underway, which is investing millions of dollars to systemically apply long-life markings to thousands of miles of rural two-lane roadways in North Carolina.

Agency: North Carolina Department of Transportation (NCDOT)

Project Contact: Brian Mayhew,
State Traffic Safety Engineer

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WINNER (I&O): Community-Wide Safety Improvements

The Safety Problem: A decade-long trend of increasing crashes, including right-angle collisions, run-off-the-road incidents, and crashes involving vulnerable road users, including a pedestrian killed when a vehicle was rear-ended and pushed into a crosswalk

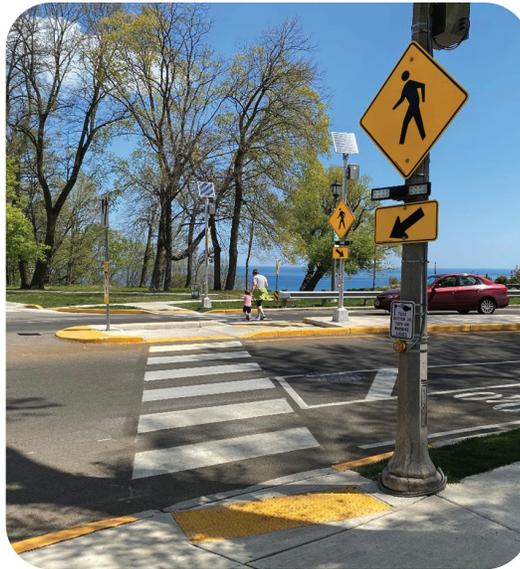
The Solution: Implementation of low-cost improvements and long-term safety design solutions funded primarily with federal aid from the Highway Safety Improvement Program

The Result: Community-wide crash reduction of 39 percent, and a cumulative 5-year impact of 257 fewer law enforcement responses, 480 vehicles spared from damage, and prevention of eight pedestrians or bicyclists from being struck by vehicles

The Village of Whitefish Bay is an active community near Milwaukee, WI with a population of approximately 14,000. Since 2010, the Village had been experiencing a trend of increasing crashes, including numerous right-angle collisions, run-off-the-road incidents, and many crashes involving non-motorists. In 2015, a woman was killed when a vehicle was rear-ended and pushed into a crosswalk.

Prior to the fatal crash, the Village had been evaluating safety improvement strategies. In 2015, many were set into motion. First, the Village implemented low-cost treatments to make an immediate impact on safety and change the driving culture to be more aware of the presence of – and need to yield to – pedestrians and bicyclists. Improvements included installing dynamic speed feedback signs, supplementing “yield here to pedestrian” signs with \$250 fine plaques, and placing the “yield here” signs in advance of crosswalks.

Longer-term design solutions were intended to solidify the safety improvements, and many were financed through federal aid assistance via the Highway Safety Improvement Program and designed by the Wisconsin Department of Transportation. Innovative improvements included a “Danish Offset” pedestrian crossing (first deployed in Denmark, the path of the crossing is offset to enable pedestrians to more directly observe oncoming vehicles), high-friction



“Danish Offset” crossing at a curve on Lake Drive at Palisades Road. Photo courtesy Village of Whitefish Bay.

surface treatment on urban curves, leading pedestrian intervals at signals, and rectangular rapid flashing beacons placed before crosswalks located near curves. Additionally, both systemic and targeted safety solutions were implemented throughout the community, including improved street lighting, updated signal equipment and timing, and high-visibility crosswalks.

Since 2015, crashes community wide have been reduced 39 percent, and all signs point to the downward trend

continuing. The cumulative five-year impact is an estimated 257 fewer law enforcement responses, 480 vehicles not damaged, and eight pedestrians or bicyclists spared from being struck by vehicles.

Agency: Village of Whitefish Bay, Wisconsin

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Partners:

Wisconsin Department of Transportation

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Project Manager

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Traffic Analysis & Design (TADI) — Consultant

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Director of Traffic Engineering Safety Services

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WINNER (PPDE): Video Analytics Towards Vision Zero Program

The Safety Problem: Despite being a Vision Zero community, the City of Bellevue, WA experienced 4 fatalities and 12 serious injuries on its streets in 2020

The Solution: Establishment of a proactive approach to adopting data-driven safety solutions by leveraging an extensive traffic camera network to study near-crash conflicts and identify potential countermeasures

The Result: Reduction in time required to identify hot spots and study possible treatments — from a matter of years to a matter of days — and a proliferation of high-return safety projects

Prevailing practice in road safety management is generally reliant on crash reporting undertaken by responding law enforcement officers. While useful, this type of data has inherent limitations, not least of which being that it is reactive. Transportation agencies, for example, often only identify dangerous hot spots after years of crash reports indicate some kind of anomaly about the location.

The Vision Zero movement, with its goal to eliminate fatal and serious-injury collisions, encourages communities to build a future in which validated, data-driven preventive steps can be taken long before crashes, deaths, and serious injuries occur. One promising approach, traffic conflict analysis, leverages cloud computing, artificial intelligence and video analytics, and offers predictive insight into when, where, and why crashes are most likely to occur.

The City of Bellevue, WA, a Vision Zero community, was an early adopter of these proactive safety techniques, forging multiple technology development partnerships to convert raw video footage from its existing traffic camera network into flow, speed, and conflict event data. In addition to identifying conflict hot spots – often in one week of data collection versus many years of crash report documentation – video analytics



Vehicle-vehicle traffic conflict at NE 8th Street and 156th Avenue NE. Photo courtesy City of Bellevue, WA.

The City of Bellevue, WA, a Vision Zero community, was an early adopter of these proactive safety techniques.

offer rapid insight on whether a countermeasure achieves a favorable outcome. For example, Bellevue made traffic signal operations changes at 124th Avenue Northeast and Northeast Eighth Street, compared before-after video analytics data, and confirmed that there was a 60 percent reduction in critical conflicts. Completed in just two days, this study showed a very favorable return on investment for a \$10,000 project.

Given the success of Bellevue’s video analytics efforts to date, in 2021 the City began applying these proactive safety techniques to its high-injury network corridors, integrating conflict analytics into the road safety assessments (RSA) it conducts to identify and prioritize projects.

“While the technology is complex and cutting edge, the result is simple to understand,” said Andrew Singelakis, Bellevue’s Transportation Director. “We want to help people avoid the pain that results from a preventable crash.”

Agency: City of Bellevue, Washington
Project Contact: Franz Loewenherz,
 Principal Transportation Planner
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WINNER (PPDE): Complete Streets Master Plan and Wilton Drive Improvements

The Safety Problem: 1,675 pedestrians were killed in the South Florida Region from 2010 through 2019

The Solution: Development of the Broward Complete Streets Master Plan (CSMP), and a major redesign of a key local corridor known as “The Drive”

The Result: 75 percent reduction in severe crashes, 66 percent reduction in pedestrian and bicycle crashes, and 50 percent improvement in travel times along “The Drive”, with another 20 projects identified that will be undertaken as funding allows

The South Florida Region – including Broward County – has the highest number of total pedestrian fatalities in the entire nation (1,675 from 2010 through 2019). An example of this problem can be seen along the Wilton Drive corridor in Wilton Manors, FL, known locally as “The Drive.” Home to multiple attractions and employment opportunities, the corridor has also been the scene of a disproportionate number of injury and fatal crashes. From 2017 through 2018, the corridor experienced a total of 44 crashes, which caused eight severe injuries and one fatality.



Aerial view of Wilton Drive showing on-street parking, buffered bike lanes, median separation, and pedestrian facilities. Photo courtesy Broward MPO

To reverse these trends, the Broward Metropolitan Planning Organization (MPO) developed the Broward Complete Streets Master Plan (CSMP). The Plan is highlighted by a Demand and Equity analysis conducted to select priority areas for improvement that demonstrate a relative need for transportation investments based on concentrations of historically vulnerable populations, combined with a greater number of everyday destinations.

Along The Drive, the MPO worked together with the cities of Wilton Manors and Fort Lauderdale and the Florida Department of Transportation (FDOT) to develop the Wilton Drive Complete Streets project. Prior to the redesign, The Drive included four 12-foot vehicular travel lanes with turn lanes in the painted median, which encouraged higher speeds and negatively affected safety. The Complete Streets effort included the elimination of one vehicular travel

lane in each direction to provide bicycle and pedestrian enhancements. These included 7-foot buffered bike lanes, mid-block crossings, raised medians, wider sidewalks, pedestrian lighting, and landscaped bulb-outs.

Initially, the project concept was poorly received by many in the community, who were concerned that the lane elimination would cause long delays. State and local data, however, show tremendous improvements

in both safety and mobility, including a 66 percent decrease in bicycle and pedestrian crashes, a 75 percent reduction in severe-injury and fatal crashes, and a roughly 50 percent improvement in travel times along the corridor. Additionally, business owners report an uptick in economic activity.

With the demonstrated success along Wilton Drive, the Broward MPO has moved forward with the implementation of other projects identified in the CSMP and regularly conducts walking audits to engage community members early in the process. Eight projects totaling \$4 million identified in the CSMP have been added to the FY 2025 budget for feasibility, while another 12 (\$76 million) have been added to the Multi Modal Priorities List.

Agency:
Broward Metropolitan Planning Organization
Project Contact: Ricardo Gutierrez,
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WINNER (PPDE): 2020 – 2024 Strategic Highway Safety Plan

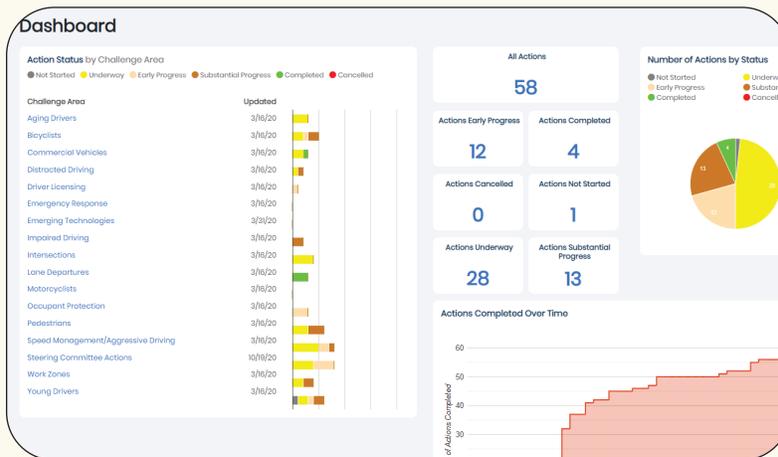
The Safety Problem: A trend of rising fatalities and serious injuries on California’s roadways, averaging 10 deaths every day

The Solution: An updated statewide Strategic Highway Safety Plan with 5 new key components marking what Caltrans refers to as “The Pivot”, adopting 4 Guiding Principles, designating high-priority challenge areas, expanding and diversifying committee membership, implementing the program with innovative tools, and evaluating progress continuously

The Result: Renewed focus on California’s commitment to achieve zero traffic fatalities, and capacity for data-informed decisions to be made at all levels of government

From 2010 through 2018, California experienced an unacceptable trend of increases in fatalities and serious injuries on its roadways. Every year, about 3,600 individuals die on California’s roadways, an average of 10 deaths per day. To reverse this trend, state transportation leaders recognized that a bolder and more focused approach was necessary, and capitalized on the opportunity to update the state’s Strategic Highway Safety Plan (SHSP) and its implementation to align it with this aggressive recommitment to safety.

This important change, referred to as “The Pivot,” includes four new Guiding Principles (Integrate Equity, Implement a Safe System Approach, Double Down on What Works, and Accelerate Advanced Technology), focuses on High Priority Challenge Areas, expands the SHSP committee membership to reflect the diversity of the state and promote inclusivity, and incorporates innovative tools into the planning and implementation process. Crucially, crash statistics will be evaluated against SHSP implementation on an annual basis to ensure progress using a newly-developed Action Tracking Tool. Through this process, Caltrans incorporates proven countermeasures and leading-edge safety planning to evolve with the changing environment, and maximize statewide efforts to eliminate fatalities and serious injuries.



Tracking tool web page that is utilized by Caltrans to monitor progress in the implementation of actions. Photo courtesy Caltrans.

Caltrans utilizes existing resources to inform and develop new tools to provide critical information to partners and stakeholders that inform their decisions when creating plans, programs, policies, and solutions for a statewide impact. California’s traffic safety professionals

now have direct access to crash data to support the data-driven implementation of the SHSP and other safety programs. Ultimately, the SHSP is creating an environment where data drives informed policies at all levels of government, and the five key components will put California on the path to zero fatalities and serious injuries by 2050. The SHSP is currently focused on institutionalizing the Guiding Principles of Integrate Equity and Implement a Safe System Approach into all aspects of the SHSP. There is an ongoing concerted effort to integrate equity into all aspects of the plan to address institutional and systemic biases. The Safe System Approach places additional responsibility on agencies to account for human error within the design and operations of roadways.

Agency: California Department of Transportation (Caltrans)

Project Contact: Rachel Carpenter, P.E., Chief Safety Officer

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WINNER (PPDE): TxDOT Safety Scoring Tool

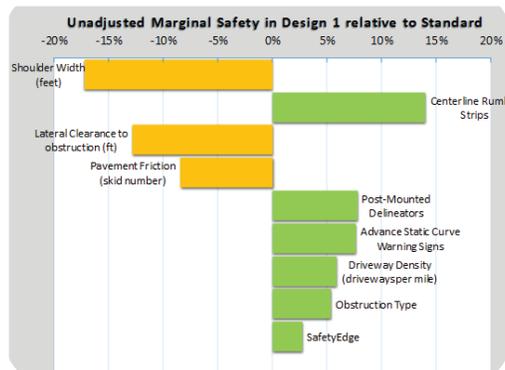
The Safety Problem: A disproportionate number of fatalities and serious injuries on rural roadways, and barriers to existing safety analysis tools related to complexity and resource requirements

The Solution: Development of an all-new safety scoring tool to evaluate the effects of geometric, traffic control, and roadside design elements on safety

The Result: A user-friendly method now required for all rural two and multi-lane non-access controlled projects that strengthens the traffic safety culture and allows for proactive vs. reactive safety management

The Texas Transportation Commission has adopted a goal of zero fatalities on Texas roadways by 2050. Recognizing that new methods would be needed to reach this goal, the Texas Department of Transportation (TxDOT) retained the Texas A&M Transportation Institute to develop scoring tools that can be used to evaluate the effects of geometric, traffic control and roadside design elements on safety. The initial effort focused on two-lane and multi-lane rural roadway projects because a disproportionate number of fatalities and serious injuries occur on these roads.

The scoring tool incorporates quantified effects of changes in design parameters such as lane and shoulder width, horizontal and vertical curve geometry, rumble strips, and clearances to objects, thereby allowing project developers to examine the effects and tradeoffs involved in design decisions. Developed in a user-friendly, familiar spreadsheet format, the tool is not designed or intended to make decisions for the project developer, but rather to provide an objective, data-driven aid that allows the designer to assess and evaluate how changes in design parameters can affect safety. Feedback is provided through a visualization tornado-chart graph, dubbed the “Vortex of Safety”, which provides a proportional representation of the effect of design changes, and focuses the analyst on the primary means to improve safety in a project.



Screenshot of “Vortex of Safety” visualization tool. Photo courtesy TxDOT/TAMU TTI.

Use of the tool is required for all rural two and multi-lane non-access controlled projects, ranging from routine maintenance to complete reconstructions. The universal requirement emphasizes the importance of maximizing safety in the project development process for all types of projects, not just those primarily developed to improve safety. By incorporating proven

Highway Safety Manual techniques, information from the crash modification clearinghouse, and findings from Texas-based research into an easy-to-use spreadsheet that requires very little training, the tool overcomes the barrier to widespread safety analysis stemming from the time and complexity of most safety analysis methods.

By requiring the use of this tool while projects are still in the development and design stage, the tradeoffs and costs of safety improvements can be evaluated before construction begins, resulting in cost-effective use of construction and maintenance funds. Importantly, integrating the tool into the process at this point also enables a proactive, rather than passive or reactive, approach to safety that strengthens the traffic safety culture throughout the state.

Agency: Texas Department of Transportation & Texas A&M Transportation Institute
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Florida Local Technical Assistance Program (LTAP)

The Safety Problem: Limited availability of no-cost technical trainings for local agency staff, low attendance at the trainings that were available, and interruptions to in-person opportunities brought about by the COVID-19 pandemic

The Solution: Identification of new training needs and a transition from in-person training to online webinars

The Result: Within three years, over 50 new courses were added to (LTAP) offerings and training attendance increased substantially. The current Florida LTAP virtual safety-related trainings attract an impressive average of 434 transportation professional attendees per training session



Safe Transportation for Every Pedestrian (STEP) workshop held in an in-person setting. Photo courtesy FDOT.

Local transportation agencies are vital in the effort to improve roadway safety in Florida, because they design, operate, and maintain their own roadways and assist the Florida Department of Transportation (FDOT) toward achieving our collective target of zero serious injuries and fatalities. FDOT uses its Florida Local Technical Assistance Program (LTAP) to improve the skills and increase the knowledge of local and transportation workforces on roadway safety via training and technical assistance.

FDOT encountered numerous challenges, including limited options for no-cost safety-related trainings for employees of Florida local transportation agencies, and low attendance at the trainings that were available. The arrival of the COVID-19 pandemic in early 2020 only exacerbated FDOT's concerns, as in-person learning was severely disrupted.

To address the overall problems on safety-related training, Florida LTAP Center housed at Center

for Urban Transportation Research developed and implemented its cost-efficient approaches to achieve no-cost safety-related trainings to all attendees, and used innovative approaches to increase attendance of these trainings. Florida LTAP also successfully transitioned from in-person training to online webinars to effectively address the significant impacts of the COVID-19 outbreak.

Within three years, over 50 new courses were added to LTAP offerings and training attendance increased substantially. The current Florida LTAP virtual safety-related trainings attract an impressive average of 434 transportation professional attendees per training session.

Local Agency:
Florida Department of Transportation
Project Contact: Brenda Young,
State Safety Engineer
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HONORABLE MENTION: North of Kiowa North

The Safety Problem: An antiquated corridor built in 1927 with high tourist traffic, and hazardous curves and alignment

The Solution: Reconstruction of a 5.8-mile project, improving 21 curves to current standards, adding 6-foot shoulders and edge line rumble strips

The Result: A predicted crash reduction of 85.9 percent using the Highway Safety Manual's crash predictive method for rural, two-lane, two-way roads

US Highway 89 west of Browning, MT traverses the Blackfeet Indian Reservation and provides a key entrance to Glacier National Park, which typically sees 3 million visitors each year. The route, originally built in 1927, was narrow with sharp curves, few turnouts and heavy tourist traffic. To improve roadway safety and traffic flow while minimizing impacts to numerous Blackfeet cultural sites, adjacent wetlands, and area wildlife, the Montana Department of Transportation (MDT) performed major road improvements along a 5.8-mile stretch. These included reconstruction of 21 substandard horizontal curves, shoulder widening, and provision of edge line rumble strips.

The project implemented many innovative engineering concepts including snow storage design, geotechnical slope stabilization and armoring, and strategically located vehicle pullouts to accommodate motorists wishing to pull over to observe the natural landscapes, vistas, and cultural sites. Motorcycle enthusiasts specifically requested the perpetuation of a curvilinear alignment to maintain riding pleasure, which was achieved while still providing curves that are much safer, meet full design standards, and accommodate the RVs and other large vehicles that also use the corridor. Moreover, existing shoulder widths were zero



Old (top) vs. new (bottom) alignment. Photo courtesy Montana DOT.

The new alignment is predicted to see a crash reduction of 85.9 percent.

to one foot, while the new roadway provides consistent 6-foot shoulders with edge line rumble strips. Each of these safety improvements reduces crashes; combined, they have a more comprehensive safety result. Using the Highway Safety Manual crash predictive method for rural, two-lane, two-way roads, the new alignment is predicted to see a crash reduction of 85.9 percent.

Located entirely on the Blackfeet Nation Reservation, this vital project improves roadway safety and traffic flow while protecting and enhancing the cultural resources and economic opportunities for the local population. The design team worked closely with the

Blackfeet Cultural Department to identify and locate the culturally significant sites including burial grounds, cloth offering sites, teepee rings, and cairns. Additional benefits include protection of the natural environment, facilitated passage of wildlife, and decreased future maintenance costs from winter snow removal operations.

Local Agency:
Montana Department of Transportation
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HONORABLE MENTION: Making Complete Streets in Portland

The Safety Problem: Excessive vehicle speeds in town, broken or missing sidewalks, and few outdoor trails

The Solution: Formation of a grassroots Complete Streets Group which worked with local officials to write, adopt, and implement a Complete Streets Policy

The Result: Vehicle speed reduction in town, repair/reconnection of 2 miles of local sidewalks, reconstruction of a 0.5-mile segment of roadway, and an increase in area hiking by 3,000 users per week along a new trail

Located in central Connecticut and responsible for 63 miles of roadway, the Town of Portland is a small community of under 10,000 residents that faced serious safety concerns regarding vehicle speeds and limited opportunities for safe walking and cycling. To address these concerns, a grassroots Complete Streets Group (CSG) wrote the Complete Streets Policy and gained the support of elected leaders, who formally adopted the policy in 2016. The CSG then started working with Public Works and the Town Engineer to plan, design, and construct safety improvements.

Priority Goals were identified, including 1) Work with partners to reduce speeds; 2) Establish healthy lifestyle choices by providing safe walking and cycling options; 3) Promote a Complete Streets Culture through education and events such as bike rides and trail walks; 4) Identify gaps in sidewalks, roads and trails, with the goal of enabling multimodal safe travel to schools, residences, businesses and recreation opportunities; and 5) Implement safety improvements based on the Complete Streets Policy.

In 2016, a State grant was awarded to design and engineer the 2.38-mile Air Line Trail, a major component of the 111-mile Central CT Loop Trail. The Air Line Trail was completed in 2018,



Sidewalks installed on Main Street. Photo courtesy Portland, CT

and hiking is up by 3,000 users per week. Additionally, a municipal bond was issued in 2018 to fund repairs to two miles of sidewalks and a 0.5-mile road re-build. These safety improvements were engineered, designed, and completed in 2020, the same year a State Connectivity Grant was awarded

to repair sidewalks along State-owned roadways. This work has also been completed.

Cycling has increased in town as well, with the creation and signage of Safe Bike Routes and hosting of bike events by CSG. After a speed study, Portland installed digital speed signs on roads with excessive speeding, and these have contributed to overall speed reductions in town. The success of these signs in slowing vehicles – particularly near schools – has led the University of Connecticut to award the town two additional signs that will be installed in other areas of town with speeding problems. Other forthcoming work will include sidewalk improvements, provision of a new bus shelter, and other connectivity efforts in an underserved low-income area of town.

Local Agency: Town of Portland, CT
Project Contact: Robert Shea,
 Director of Public Works
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2021 Noteworthy Practices Guide

THE 2021 BLUE RIBBON PANEL

Winners of the National Roadway Safety Awards program are selected by a volunteer panel of dedicated transportation safety professionals. Panelists independently evaluate each entry on the basis of innovation, effectiveness, and efficient use of resources, and convene for a panel discussion to agree on final selections of Winners and Honorable Mentions. Our sincere thanks to the nine individuals who served on this year's blue-ribbon panel:

T. Bella Dinh-Zarr, PhD, MPH

Former Vice Chair and Member
National Transportation Safety Board

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The FHWA is committed to helping our nation achieve zero roadway deaths and serious injuries by creating a "Safe System" for all road users. A Safe System encompasses working closely with multidisciplinary organizations and groups to achieve safe roads, safe speeds, safe road users, safe vehicles, and effective post-crash care. FHWA's Office of Safety provides leadership with our partners and various stakeholders to achieve a national safe system.

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The Roadway Safety Foundation

The Roadway Safety Foundation is a 501(c)(3) nonprofit charitable and educational organization solely dedicated to reducing the frequency and severity of motor vehicle crashes by improving the safety of America's roadways. To this end, the RSF focuses on improving the physical characteristics of roadways, such as design and engineering, operating conditions, removal of roadside hazards, and effective use of safety features.

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