

# MISSOURI LTAP

MISSOURI LOCAL TECHNICAL ASSISTANCE PROGRAM  
— LOCATED AT MISSOURI S&T —

SPRING 2025

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Photo by: Sam O'Keefe

## Missouri LTAP Staff

Heath A. Pickerill, Ph.D.  
Director

Nicole Annis, Ph.D.  
Assistant Director

Kristi Barr  
Program Coordinator

Pat Diaku  
Administrative Assistant

Tina Monson  
Education Program Coordinator

Lauren Gehner  
Safety Circuit Rider

Shelby O'Keefe  
Communications Coordinator

## Missouri LTAP Advisory Committee Members

**Ashley Buechter** — Local Programs Administrator, MoDOT

**Bryan Boyce** — Construction Service Team Leader, Great Rivers Engineering & MACCTO representative

**Darryl Griffin** — Presiding Commissioner, Osage County & local agency representative

**Jen Harper** — Research Director, Construction and Materials, MoDOT

**Alex Wassman** — Traffic Liaison Engineer, MoDOT

**Laura Holloway** — MML Deputy Director

**Eric Landwehr** — Director, Cole County Public Works & APWA Mid Missouri Chapter representative

**Aaron Lock** — Senior Assistant Road Superintendent, Cole County Public Works & MACTO representative

**David Lomax** — Presiding Commission, Marion County & CCAM representative

**Kevin Luttrell** — Road Superintendent, Horseshoe Bend Special Road District & local agency representative

**Sean McGonigle** — Risk Manager, Missouri Association of Counties

**Bruce McGregor** — Director of Public Works, City of Olivette & APWA representative

**John P. Miller** — Safety Engineer, FHWA Missouri Division

**John Myers** — Missouri S&T; Missouri Center for Transportation Innovation Director

**Rebecca Rost** — Environmental Specialist, FHWA Missouri Division

**Brent Shulte** — Senior Research Analyst, Construction and Materials, MoDOT

**Derek Weber** — Director, Northeast Missouri Regional Planning Commission & MACOG representative

**Kurt Wengert** — Technical Division Manager, Jefferson County Public Works & local agency representative

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# FROM THE DIRECTOR

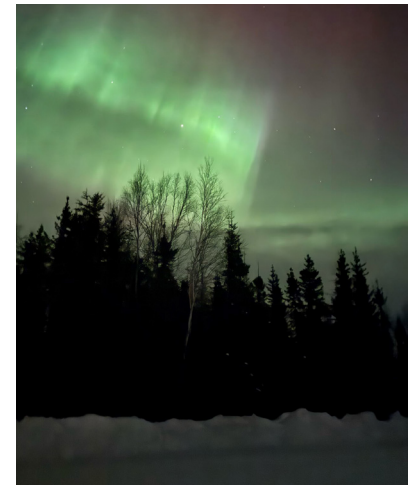


Hello everyone!

I previously shared that I am serving in the officer track for the National Local Technical Assistance Program Association (NLTAPA). I am in the third year, having served as vice president in 2022/2023 and president-elect last year. As the current president, I have the responsibility of holding monthly executive committee meetings, planning our winter business meeting held in early January, attending regional meetings throughout the country, and carrying out a host of other duties. I traveled to Fairbanks, Alaska to the Western region in late February, sharing association news and meeting members of Western region centers, many of whom are relatively new to LTAP. And yes, Fairbanks was cold! However, the snowy landscape was beautiful, especially in the early morning hours beneath the northern lights (aurora borealis) as seen in the photo I took about 50 miles outside of Fairbanks. As I started typing this letter, I was traveling back from Princeton, New Jersey, the location of the Northeastern region meeting. Before I could finish the letter, I drove to the North Central region meeting held in downtown Kansas City, the site of the 2025 NLTAPA conference, which will be held on July 21-24.

Regardless of where in the country I visit with LTAP centers, the dedication to providing training and technical assistance to local agencies in their state is steadfast. While the delivery may be unique, the unwavering support to cities and counties remains the same. Over the nearly half-century of its existence, the national LTAP program has been able to adapt and evolve as needed when faced with challenges and uncertainties. The program has repeatedly shown its value in providing workforce development training and supporting infrastructure management and maintenance to the local agencies we serve.

The Missouri LTAP team will be hosting the Missouri Concrete Conference on April 29-30 at Missouri S&T in Rolla for the fourth time. Please look for more information in this newsletter on how to register as an attendee or an exhibitor/ sponsor. You can also [visitconcrete.mst.edu](https://visitconcrete.mst.edu). We will also be hosting MO LTAP's National Work Zone Awareness Week webinars again this year. Missouri Safety Circuit Rider, Lauren Gehner, has led the coordination. Like last year, we are spacing the webinars over four weeks. We saw increased attendance with this format. The theme for this year's National WZ Awareness Week, April 21-25, is "**Respect the zone so we all get home!**" The National kickoff event will be April 22 hosted by North Carolina Department of Transportation. Visit [workzonesafety.org/public-awareness/work-zone-awareness-week/](https://workzonesafety.org/public-awareness/work-zone-awareness-week/) for a complete list of events. All MO LTAP webinars will be held from 11:00 a.m. – 12:30 p.m. Watch for upcoming email advertisements and plan to participate. Help kickoff a safe construction and work zone season!



Best wishes!

Heath A. Pickerill, Ph.D.  
Director, Missouri LTAP

# In this ISSUE

SPRING 2025



## MORE SUN MEANS MORE OUTDOOR ACTIVITY. IT DOESN'T HAVE TO MEAN MORE ROADWAY INJURIES.

*Daylight Savings Time has begun. It seems harsh winter weather is behind us, replaced by warmer spring days.*



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## LEAD YOUR PUBLIC LIKE YOUR TEAM: APPLY LEADERSHIP PRACTICES TO YOUR PUBLIC WORKS AWARENESS STRATEGY

*We often think of citizens as public works customers, but what if we thought of them as team members?*



## THIS SIMPLE FIX COULD MAKE STREETS SO MUCH SAFER

*New research shows that adding bike lanes to roads made drivers slow down.*



## CENTERING SAFETY AT 2025 AASHTO WASHINGTON BRIEFING

*A session at the American Association of State Highway and Transportation Officials 2025 Washington Briefing delved into ways to further prioritize safety for transportation workers, system users, and U.S. communities as whole.*



## BREAKING DOWN THE NUMBERS: BICYCLE AND PEDESTRIAN CRASH TRENDS AND SOLUTIONS

*Bicycle and pedestrian crashes are rising throughout Missouri in both urban and rural areas.*

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The Local Technical Assistance Program (LTAP) and Tribal Technical Assistance Program (TTAP) are composed of a network of 58 Centers — one in every state, Puerto Rico and regional Centers serving tribal governments. The LTAP/TTAP Centers enable local counties, parishes, townships, cities and towns to improve their roads and bridges by supplying them with a variety of training programs, an information clearinghouse, new and existing technology updates, personalized technical assistance and newsletters. Through these core services, Centers provide access to training and information that may not have otherwise been accessible. Centers are able to provide local road departments with workforce development services, resources to enhance safety and security; solutions to environmental, congestion, capacity and other issues; technical publications; and training videos and materials.

# PUBLIC WORKS CONNECTION



## MORE SUN MEANS MORE OUTDOOR ACTIVITY. IT DOESN'T HAVE TO MEAN MORE ROADWAY INJURIES.

**D**aylight Savings Time has begun. It seems harsh winter weather is behind us, replaced by warmer spring days. The change in temperature means many people will spend more time outside, putting them along or on roadways. All road users should be predictable to those around them. As a pedestrian, make sure drivers see you before stepping into the roadway. For bicyclists and drivers, be aware of your speed and the speed of those around you so you can act accordingly as well as always signaling for turns or lane changes. There are even steps that can be taken by those who maintain roadways to improve safety and ensure everyone makes it home unharmed.

Bicycle traffic often includes children and even cyclists taking up an outdoor hobby for the first time. Both groups may be unfamiliar with normal practices of sharing roadway space. For pedestrians and bicyclists in shared spaces, the biggest impact to safety is ensuring they're aware of their surroundings. Limiting phone usage is helpful to reduce distractions. Additionally, not wearing headphones or earbuds allows pedestrians and bicyclists to be more aware of what is going on around them. They should also be noticeable with bright colors and reflective or lit items, especially when out at night, dawn, or dusk. It's important to consider backlighting too. Many times, individuals are harder to see with headlights or the sun directly behind them. All bicyclists should be wearing a helmet. In urban and suburban areas, room should be given for parked cars to open their doors suddenly. It is becoming more common for bicyclists to be traveling on higher speed rural roads. This situation typically gives riders less traffic and better views. Unfortunately, it sometimes comes with less lane space and different types of vehicles. It's important for bicyclists to be aware that farm equipment may not always be able to see them. Additionally, farm equipment does not always exit at obvious driveways and are unable to signal. Therefore, bicyclists should give them plenty of space.

Drivers should be aware of any activity happening where they are driving, whether its kids playing in a front yard or a group of bicyclists on a morning ride. It's important

to keep phones away and limit other distractions. Drivers should also allow plenty of room when passing bicyclists. Additionally, do not underestimate the speed of bicyclists especially when considering if it is safe to turn. Check left, right and over your right shoulder when making a right turn with bicyclists present.

**For local agencies maintaining roadways, the best improvement to bicycle and pedestrian safety is separating vehicles from other roadway users.**

This improvement can be accomplished with special separation through sidewalks, bike lanes, shared use paths, and pedestrian refuge islands. Also, separation can be made using rectangular rapid flashing beacons or leading pedestrian intervals at signalized intersections, allowing vehicles and pedestrians to use the shared space at different times. Time and funds may not allow for major changes to an agency's road network; therefore, maintenance is important. Making sure sidewalks and shoulders are clear of debris, tree roots, and weeds gives pedestrians and bicyclists a safe place to travel outside of the driving lane. In more rural areas, making sure roadway edges and sight distances are not overgrown helps everyone be seen more easily.

I hope you're able to find time to safely enjoy the longer days and nicer weather. As always, if you have questions on the information provided or related to any roadway safety issue in your community, please reach out.

Travel Safely,

Lauren Gehner, PE (Missouri Safety Circuit Rider)  
Email: [Lauren@GehnerDandS.com](mailto:Lauren@GehnerDandS.com)  
Phone: 314.348.0308

Sources:

[arfb.com/news/2023/aug/07/rural-roads-bike-safety/](https://arfb.com/news/2023/aug/07/rural-roads-bike-safety/)  
[nhtsa.gov/road-safety/bicycle-safety](https://nhtsa.gov/road-safety/bicycle-safety)



# MODOT SAYS ROADWAY FATALITIES DOWN STATEWIDE

**According to preliminary data, the Missouri Department of Transportation said traffic fatalities fell statewide by 4 percent in 2024 to 954 compared to 2023 and are down by 10 percent compared to 2022, marking two consecutive years of roadway fatality declines.**

MoDOT added that its preliminary numbers indicate motorcyclist fatalities in Missouri were down 23 percent, with 133 motorcyclists killed on Missouri roadways in 2024.

However, the agency stressed that while overall roadway fatalities were down, a record number of pedestrian fatalities occurred in 2024, with 148 pedestrians being struck and killed.

This is a 16 percent increase from 2023 and continues a concerning trend of rising pedestrian deaths. Additionally, MoDOT pointed out that a notable percentage of the pedestrian fatalities were individuals who exited their vehicle due to a prior crash or breakdown on the side of the road.

“We still have a lot of work to do in Missouri, and we are especially concerned by the rising number of pedestrian

fatalities in our state,” noted Jon Nelson, MoDOT’s state highway safety and traffic engineer, in a statement.

“We all have a responsibility to use the transportation system in a safe manner, and both drivers and pedestrians can make safe choices to help make this happen,” he added. “Let’s keep our heads up, watch out for each other, slow down, and put all distractions aside, whether we’re behind the wheel or taking a walk.”

MoDOT also noted that mobile phones have proven to be one of the most persistent and consequential distractions when it comes to motorist behavior. Distracted driving contributed to more than 100 deaths in both 2023 and 2024, and statistically, more than half of the victims are other than the distracted driver, the agency said.

**MoDOT pointed out that Missouri’s new Siddens-Bening Law now prohibits the use of handheld electronic devices, including cell phones, by all drivers.**

The law has already had a positive impact and is expected to continue doing so with citations now in effect for violating the law.

[aashtojournal.transportation.org/modot-says-roadway-fatalities-down-statewide/](https://aashtojournal.transportation.org/modot-says-roadway-fatalities-down-statewide/)

## LEAD YOUR PUBLIC LIKE YOUR TEAM: APPLY LEADERSHIP PRACTICES TO YOUR PUBLIC WORKS AWARENESS STRATEGY

### WE OFTEN THINK OF CITIZENS AS PUBLIC WORKS CUSTOMERS, BUT WHAT IF WE THOUGHT OF THEM AS TEAM MEMBERS?

Could applying the same principles and practices a good leader uses with their team improve public works awareness and transform citizen and department dynamics? You are probably already engaging with your community in ways that foster mutual respect, grow collaboration, and increase rapport but haven't thought of it as an extension of your leadership.

Here are some skills that might be applied outside the conference room to your public interactions.

#### **Embrace public engagement as team building**

Whether firing up the grill for a thank-you lunch, attending your state's equipment show as a team, or highlighting an employee's professional achievements in the community newsletter, team building takes many shapes but always aims to enhance relationships.

Team building practices apply to your citizens, too. Outreach and engagement events like open houses, public input sessions, touch-a-trucks, and community nights out show a commitment to building trust, transparency, and open communication.

#### **Apply change management practices to project planning and communication**

Although change can lead to increased efficiency, improved safety, or financial savings, those benefits may not be realized right away, and certainly not without a degree of trial and error or, possibly, failure.

The same tips for introducing organizational change, such as a new payroll system or asset management application, can work with your community, too. From downtown revitalization projects to changes in your solid waste program, bringing your community into discussions early helps to uncover potential issues, lean into concerns, gather valuable input from diverse stakeholders, and increase overall satisfaction—and trust—when residents feel heard and informed.

Apply organizational change practices to your projects, including listening forums, informational sessions, and enhanced communication campaigns. Identify community members who could be particularly affected by the upcoming change or project and spend time actively listening to their concerns, gathering their input, and earning their buy-in. Be honest with your community about expectations, including if there may be a service disruption, temporarily increased response time, or traffic congestion.

For example, when introducing liquid pre-treat to your

winter operations, you might apply change management principles that include informational sessions with the vendor or a community that's had success using the material. Explaining the reasons for integrating the new material and the benefits of doing so, outlining expectations (including if there may be a learning curve for your team), and inviting candid feedback can help you predict potential obstacles.

Remember, many frustrations can be avoided with good communication, and your community is rooting for your team's success!

### **Communicate strategically with different personalities**

Effective communication does not just happen—it is strategic, thoughtful, and takes time. Just like our teams are comprised of a variety of personality styles and communication preferences, so too is your citizen audience.

A strong leader considers each team member individually when planning for an important message, and you can do the same when communicating with citizens.

Craft messaging that speaks to a variety of personality and communication styles. This may mean altering the cadence, level of detail, or focus of the message, anticipating different citizens' questions to address them proactively, and engaging with language interpretation services. Being clear, concise, and thoughtful in your messaging is helpful to your strongest advocate and your most wary citizen.

### **Engage the quiet team members**

You know which team members are not afraid to rock the boat, who will spill the tea on the employee satisfaction survey, and who appreciates a good 360-degree performance review process. You also know which team members need more time and space to share feedback or are generally quieter. Similarly, in most public meetings, there will be a small number of citizens who are more comfortable expressing their opinions or asking questions.

While public input is valuable, some feedback may not necessarily represent the needs or opinions of all. While you should listen with respect and interest to your more expressive citizens, also look for ways to engage the broader community to ensure consideration of most needs and concerns.

Humans are a complex reflection of our life experiences, social influences, wisdom, and emotions, and just like

we don't always leave family "stuff" at home, citizens don't always leave their baggage at the door of a public meeting. We all have a bad day, a moment where we weren't our best selves or an interaction we wish we could do over. The unavoidable truth is that humans—whether team members, managers, or citizens—bring a variety of emotions and attitudes to any given situation, especially one ripe for conflict.

As public servants, we must always respect citizens' rights to share their feelings. However, we must understand that an unkind social media comment or harsh criticism at a public meeting may potentially reflect what's going on in that person's life and is not reflective of the shared sentiment of all citizens.

By showing empathy, grace, and professionalism in even the most difficult conversations, you reinforce your commitment to trust and strong relationships and will be better able to uncover what's really behind someone's words. Leaders are already doing this with their team members—recognizing when someone has something going on that's making them unusually tense or more irritable than usual and offering grace and concern during those moments.

## **TREAT YOUR CITIZENS AS YOU WOULD A TEAM MEMBER, AND YOU MIGHT SHIFT THE ENTIRE DYNAMIC.**

By seeing your role as an orchestrator, facilitator, and consensus-builder and applying leadership principles to your public engagement and outreach, you might increase public works awareness and also build a culture of collaboration, participation, and shared success throughout your community.

*Editor's note: This monthly public visibility column showcases great examples of advocacy, in all their forms, by APWA chapters.*

Marilee Enus Director University of New Hampshire  
Technology Transfer Center Member, New England APWA  
Public Works Awareness Committee

[apwa.partica.online/reporter/september-2024/regulars/lead-your-public-like-your-team-apply-leadership-practices-to-your-public-works-awareness-strategy](https://apwa.partica.online/reporter/september-2024/regulars/lead-your-public-like-your-team-apply-leadership-practices-to-your-public-works-awareness-strategy)

# THIS SIMPLE FIX COULD MAKE STREETS SO MUCH SAFER



**In 2022, 1,360 people in the U.S. died preventable deaths while riding a bike. One of the most deadly, and most common, types of bike crashes is known as a right hook: A driver turns right directly into the path of a cyclist going straight through an intersection, hitting them or causing them to crash.**


Researchers at Rutgers University wanted to test if installing bike lanes at an intersection could reduce vehicle speeds, particularly for drivers turning right. Using chalk paint spray, traffic cones and plastic bollards, they installed temporary bike lanes near an intersection in Asbury Park, New Jersey.

Then, they used computer vision technology to track the speed and path of more than 9,000 vehicles. Researchers compared speeds under three conditions: no bike lanes, painted bike lanes and painted bike lanes with delineators (traffic cones and bollards).

The results, published recently in the *Journal of Urban Mobility*, were striking: Both painted and delineated bike lanes slowed drivers, especially when they were turning right.

For the experiment, researchers temporarily removed nine parking spaces to create 6-foot wide bike lanes with a 3-foot buffer between bike and car travel lanes. Car travel lanes were reduced by at least one foot each, a decrease that has been shown to reduce crashes. In addition, the bike lanes created a sharper turning radius for drivers





## New research shows that adding bike lanes to roads made drivers slow down.

turning right, another intervention that might force drivers to slow down.

One finding: Bike lanes with physical delineators (cones or bollards) were more effective than paint-only lanes at calming traffic, echoing a popular mantra for bike activists: “Paint is not protection.” (The lanes were not protected, however, because drivers could drive over the delineators.) For vehicles turning right, top speeds were reduced by 28% and average speeds by 21%. Paint-only bike lanes slowed driver speeds by up to 14% and drivers going straight slowed down by up to 8%.

**“In order to achieve Vision Zero initiatives, planners and policy makers should focus efforts on delineated bike lanes, not merely painted lanes,” researchers concluded.**

“The costs associated with the materials are offset by the traffic calming benefits of the delineated bike lane.

The study adds that pop-up bike lanes are a cost-effective solution for studying the effects of more permanent solutions—after all, you could just borrow the traffic cones. A city could quickly implement pop-up or temporary infrastructure. Then, armed with data and community feedback, they could invest in making the changes permanent.

Pop-up traffic interventions were popular during the early days of the COVID-19 pandemic as cities sought to provide socially distant spaces for people to go outside and recreate, notes the study. According to researchers, the new cycling infrastructure was successful in encouraging more people to ride bikes, a form of transportation that is also more climate-friendly.

*This story was originally published by Next City, a nonprofit news outlet covering solutions for equitable cities. Sign up for Next City’s newsletter for their latest articles and events.*

[fastcompany.com/91224533/this-simple-fix-could-make-streets-so-much-safer](https://fastcompany.com/91224533/this-simple-fix-could-make-streets-so-much-safer)

## *Centering Safety at 2025* **AASHTO WASHINGTON BRIEFING**

### **A session at the American Association of State Highway and Transportation Officials 2025 Washington Briefing delved into ways to further prioritize safety for transportation workers, system users, and U.S. communities as whole.**

Moderated by Garrett Eucalitto, commissioner of the Connecticut Department of Transportation and AASHTO's 2024-2025 president, the session featured insights from Kristina Boardman, secretary of the Wisconsin Department of Transportation; Dr. Laura Sandt, co-director of the University of North Carolina's Highway Safety Research Center; Jonathan Adkins, CEO of the Governors Highway Safety Association; and Steve Kuciemba, executive director of Institute of Transportation Engineers.

Eucalitto noted in his opening remarks at the session that centering safety is an area of emphasis for his one-year term as AASHTO president.

"Most states agree that safety should be at the center of all of our actions to really improve safety for our communities, for all road users, and for our transportation workers," he explained.

"We also want to work with others across each of our states who can contribute to help improve safety for our

transportation system for everyone," he said. "We're focused on advancing partnerships with public, private, and civic sector partners as well as exploring promising innovative approaches and sharing best practices to center safety on all users."

Eucalitto noted that also means taking "a hard look" at the ways infrastructure influences decisions by road users while helping identify more ways to encourage "safer choices" throughout the transportation environment.

"Centering safety really requires all of us to use the resources, talents, and influence we have individually and collectively so that people who use, rely upon, and work on our transportation systems are safe," he stressed.

Where infrastructure is concerned, Wisconsin DOT's Boardman pointed to the "full embrace" within her state of roundabouts as a way to improve roadway safety, especially in rural communities.

"It has been a long journey of many, many years in the making. But I'm proud to say that in Wisconsin we now have about 600 roundabouts; half on the state system, half on the local system," she said. "Now, people did not love them from the start. But the safety stats speak for themselves. And now we have small rural communities coming to us and saying, 'Hey, can we get a roundabout in this area?' Because they see a difference. So I'm really

proud that we have embraced this safety measure and it is making a difference throughout many communities.”

When it comes to user safety, Boardman said that education is a key part – especially where new drivers are concerned. “So how do you change behavior? I think it has to come through education,” she said.

While driver’s education is expensive and is no longer covered as a categorical aid through public schools, Boardman explained that the state stepped in with \$6 million in grants to provide it for free to certain groups. “We sold out basically of those grants within the first three months,” she noted. “So there is a need out there.”

Meanwhile, Dr. Sandt stressed the important role transportation plays in the health of communities across the country. “Public health is really dependent upon transportation to get people to access the health care and the services that they need, to get folks to education, to jobs, as well as to community connections and opportunities for physical activity and health,” she said. “It is so essential for the lifeblood of our communities.”

Dr. Sandt explained that transportation safety improvements “have huge benefits” for general public health. “When people go to the emergency department, that’s just the first step in the public health treatment recovery and survival process,” she said. “Crash survivors can sustain life altering injuries, brain injuries that affect their ability to function in our society. We see rising rates of depression, mental health issues and all kinds of other health outcomes, including increased opioid use resulting from our traffic injuries. Those really are true costs that need to be reined in in a systemic way as part of a long-term focus on safety.”

That is why she believes speed management must be the “backbone” of a safe system approach in transportation.

**“We cannot put our workers on the side of a road when cars are going 60 miles an hour in close proximity and think that they are safe,” Boardman said. “And what’s important is that speed management is a public health approach. It is looking at a population method to address a shared risk factor across a large population.”**

GHSA’s Adkins continued that thought by noting that there’s been a significant increase in speeding related crashes over the last few years. “And why is that? The

roads didn’t suddenly become less safe as far as the infrastructure of it. The vehicles didn’t become less safe. Actually, they’re becoming safer. What changed in the last few years? It was less traffic enforcement,” he said.

Adkins stressed that “the most immediate thing that we can do” to slow drivers down and to improve safety is boost traffic enforcement. And what he described as “good” enforcement will also come about through the better use of data.

“We’re very data focused. We’re looking at long-term data trends and are really excited about the telematics and some of the new data that we’re getting and trying to understand, like how do we actually make better safety decisions based on that data?” he said. “That is really, really, really critical.”

**And data is of a broader piece of the technological resources being brought to bear on transportation safety, ITE’s Kuciemba emphasized.**

“It is about using evidence-based, data-driven practices and performance measures,” he explained. “Our ‘duty of care’ is about being constantly open to evaluating our standards and practices and looking at everything we do through a safety lens. Whether it’s speed limit setting or traffic control devices, it’s our ‘duty of care’ to advocate for changes that enhance safety throughout transportation.”

Kuciemba added that, with today’s technology, the industry can improve its data collection efforts to help boost safety. “Better data can give us a better understanding of near-miss events at intersections, for example,” he said. “But also help us to develop a toolbox of prevention in response to what we learn from all that the data that we can collect,” he said.

And Kuciemba stressed that it is important for the transportation industry to work together to truly extract the safety value from that data.

“We really need to work with others as much as possible,” he emphasized. “It’s the only way we’re going to reach our true goal of prioritizing roadway safety. We have to all be in the same boat, rowing in the same direction.”

[aashtojournal.transportation.org/centering-safety-at-2025-aashto-washington-briefing/](https://aashtojournal.transportation.org/centering-safety-at-2025-aashto-washington-briefing/)

# PUBLIC WORKS CONNECTION

## BREAKING DOWN THE NUMBERS: BICYCLE AND PEDESTRIAN CRASH TRENDS AND SOLUTIONS

Written by Caroline Buechter, student at Missouri University of Science and Technology  
Advised by Dr. Heath Pickerill, Missouri LTAP Director

### BICYCLE AND PEDESTRIAN CRASHES ARE RISING THROUGHOUT MISSOURI IN BOTH URBAN AND RURAL AREAS.

However, the State of Missouri is committed to reducing these crashes to zero. By conducting a Vulnerable Roadway User (VRU) Assessment, which provided helpful statistics to identify trouble areas, Missouri has been able to implement many programs and grants to educate the public on the dangers pedestrians and bicyclists may experience on the roadways. The Missouri Department of Transportation (MoDOT) has also leveraged funding for implementing various countermeasures throughout the State.

### Missouri's Strategic Highway Safety Plan (SHSP) reports that more than 100 pedestrians and bicyclists are killed each year in the state.

From 2012 to 2022, pedestrian and bicyclist deaths increased by 77 percent compared to all other traffic fatalities, which increased by 40 percent. The VRU Assessment conducted by MoDOT analyzed both intersections and segments, focusing on high-crash facilities, to determine the cause of this increase. The assessment examined contributing factors and established countermeasures, which allowed several patterns to be detected. VRU crashes are generally more severe than other

<sup>1</sup>Missouri Department of Transportation. (2022). *Missouri Strategic Highway Safety Plan*. [modot.org/sites/default/files/documents/SHSP%20Blueprint%202023.pdf](https://www.modot.org/sites/default/files/documents/SHSP%20Blueprint%202023.pdf)

<sup>2</sup>Missouri Department of Transportation. (2023). *Vulnerable Roadway User Assessment*. [bikewalkcc.org/wp-content/uploads/2024/09/MoDOT-Vulnerable-Road-User-Safety-AssessmentNovember-2023.pdf](https://www.bikewalkcc.org/wp-content/uploads/2024/09/MoDOT-Vulnerable-Road-User-Safety-AssessmentNovember-2023.pdf)

Table 1: Total Crashes vs. VRU Crashes in Missouri <sup>2</sup>

Year	Total		VRU			
	Fatal Crashes	Injury Crashes	Fatal Crashes	VRU %	Injury Crashes	VRU %
2017	865	39567	113	11.6	1847	3.1
2018	848	38350	103	10.8	1761	3.1
2019	819	37832	124	13.1	1768	3.1
2020	914	33269	144	13.6	1591	3.2
2021	935	36047	135	12.7	1518	2.8

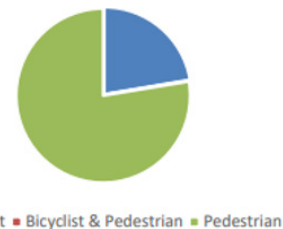


Figure 1: Missouri Serious Injury VRU Crashes <sup>3</sup>

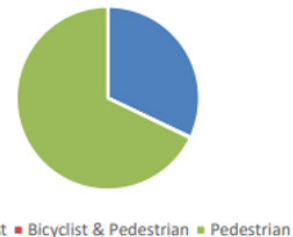


Figure 2: Missouri Minor Injury VRU Crashes <sup>3</sup>



■ Bicyclist ■ Bicyclist & Pedestrian ■ Pedestrian

Figure 3: Missouri Fatal VRU Crashes <sup>3</sup>

crash types. As of 2021, 2.8 percent of injury crashes in Missouri involved a VRU while 12.7 percent of fatal crashes involved a VRU.<sup>2</sup> More details can be found in Table 1.

Crashes involving pedestrians made up 89 percent of these fatal crashes, and 68 percent of these were injury crashes. Figures 1, 2, and 3 illustrate that the outcome for pedestrians is generally more severe than bicyclists. However, bicycle crashes can still be very serious.

In rural areas, segment crashes are most frequent due to poor lighting. 34.7 percent of fatal VRU crashes occur on segments in rural areas, especially rural two-lane undivided (R2U) and rural four-lane divided (R4D).<sup>3</sup> More information can be found in Table 2.

Table 2: Rural Segment Crash Statistics <sup>4</sup>

Facility Type	Fatal		Serious Injury		Minor Injury		All Severity	
	Number	%	Number	%	Number	%	Number	%
Rural	117	34.7%	164	23.3%	329	16.8%	610	20.4%
R0U	10	3.0%	36	5.1%	106	5.4%	152	5.1%
R2U	59	17.5%	82	11.6%	169	8.6%	310	10.3%
R4D	33	9.8%	28	4.0%	31	1.6%	92	3.1%

A motorist overtaking a VRU was the cause of 45 percent of midblock fatalities.<sup>4</sup> Speed is a determining factor in the outcome of these crashes. Pedestrians that are hit by a car going 20 mph are 90 percent likely to survive while pedestrians hit at 40 mph only have a 20 percent chance of survival.<sup>4</sup>

In addition to speed reduction, education plays an important role in decreasing fatality and injury rates. Both motorists and VRUs should be informed on the importance of all roadway safety. For example, pedestrians should walk facing traffic if a sidewalk is unavailable. Bright and reflective clothing should also be worn by both

pedestrians and bicyclists. One-third of fatal bicycle crashes are due to a motorist not detecting the bicyclist in enough time to avoid the collision. Forty-five percent of bicycle fatalities occur in dark conditions, but fewer than 20 percent of bicycle trips occur in these dark conditions, further showing the need for reflective clothing.<sup>4</sup> That is not to say that only VRUs need to be aware of safety. Motorists should also be taught how to avoid situations involving VRUs.

A variety of possible countermeasures have been identified to combat these issues. A common and very effective countermeasure is the addition of sidewalks and bicycle lanes in high traffic VRU areas to provide separation from other traffic. Transforming a four lane road to a three lane road with a middle turn lane can reduce speeds while allowing space for bicycle lanes. Other common countermeasures include converting intersections with minor stop control to all-way stops, installing lights to illuminate the roadway, widening of curbs (especially at intersections), narrowing roads at pedestrian crossings, and adding marked crosswalks with stop lines to improve awareness.<sup>5</sup>

The addition of a sidewalk along a segment of Church Street and Jefferson Street in St. Elizabeth, Missouri is a great example of how to effectively provide safer options for VRUs. This sidewalk was installed from the public school to the community track, a popular route for pedestrians. Many students walked this nearly one-half mile route every day without a sidewalk, which created issues involving school bus and student driver traffic. To solve this problem, a sidewalk was added along the entire length of the road connecting the school and the track. A crosswalk with a Rectangular Rapid Flashing Beacon (RRFB) and a pedestrian crossing sign was also installed where the path crosses Main Street to enhance safety. St. Elizabeth R-IV School District Superintendent Doug Kempker shared, "This was an amazing project, and our town leaders focused on it greatly. It not only provides a safer route for our students traveling to and from the track but also helps ensure the safety of other pedestrians. I see it used daily by our community members as well as students who walk to school."

<sup>3</sup>Missouri Department of Transportation. (2023). *Vulnerable Roadway User Assessment*. [bikewalkkc.org/wp-content/uploads/2024/09/MoDOT-Vulnerable-Road-User-Safety-AssessmentNovember-2023.pdf](https://bikewalkkc.org/wp-content/uploads/2024/09/MoDOT-Vulnerable-Road-User-Safety-AssessmentNovember-2023.pdf)

<sup>4</sup>Missouri Department of Transportation. (2023). *Vulnerable Roadway User Assessment*. [bikewalkkc.org/wp-content/uploads/2024/09/MoDOT-Vulnerable-Road-User-Safety-AssessmentNovember-2023.pdf](https://bikewalkkc.org/wp-content/uploads/2024/09/MoDOT-Vulnerable-Road-User-Safety-AssessmentNovember-2023.pdf)

<sup>5</sup>Missouri Department of Transportation. (2023). *Vulnerable Roadway User Assessment*. [bikewalkkc.org/wp-content/uploads/2024/09/MoDOT-Vulnerable-Road-User-Safety-Assessment](https://bikewalkkc.org/wp-content/uploads/2024/09/MoDOT-Vulnerable-Road-User-Safety-Assessment)



Figure 4: Beginning of the Sidewalk Project at the St. Elizabeth School <sup>6</sup>



Figure 7: End of the Sidewalk Project at the Community Track<sup>8</sup>



Figure 5: Middle Section of the Sidewalk Project <sup>7</sup>



Figure 6: Crosswalk Across Main Street<sup>7</sup>

A project in St. Martins, Missouri is another well-executed example of improving safety for VRUs. Business 50 is a popular route for both pedestrians and bicyclists. To better accommodate these VRUs, the road was widened to add bicycle and pedestrian lanes. The original roadway had an 11-foot driving lane with a two-foot shoulder. The roadway was modified to have a 10-foot driving lane with a five-foot bicycle lane and five-foot pedestrian lane.

Both of the above-mentioned projects were partially funded by the Transportation Alternatives Program (TAP). The TAP funds a maximum of 80 percent of the project cost and requires a minimum local match of 20 percent. Project numbers for the projects are as follows: St. Elizabeth [TAP - 9901(521)] and St. Martins [TAP 9901(515) and TAP 9901(523)]. The TAP provides grants to enhance safety by focusing on non-traditional transportation projects such as projects that improve the ease of travel for VRUs. It has seen much success throughout the State of Missouri. The Bipartisan Infrastructure Law established many other grant programs such as the Safe Streets and Roads for All (SS4A) program. The SS4A program uses the Safe System Approach to provide grants for both planning and implementing projects that improve highway safety. Fatalities in the United States decreased by 5.6 percent from 2000 to 2019 due to the Safe System Approach.<sup>11</sup> Figure 4 contains a graphic of this approach.

Two types of grants are available within the SS4A program - planning and demonstration grants and implementation grants. Planning and demonstration grants help with the creation of an action plan that identifies a strategy to prevent roadway deaths and serious injury in a specified area. An action plan must be in place before an implementation grant can be used. Implementation grants help implement projects or strategies identified in the action plan.

The State of Missouri has issued a variety of programs to provide guidelines to reduce fatalities and injuries on the road. These programs are great references when

<sup>6</sup> Frisbie, L. (2024)

<sup>7</sup> Frisbie, L. (2024)

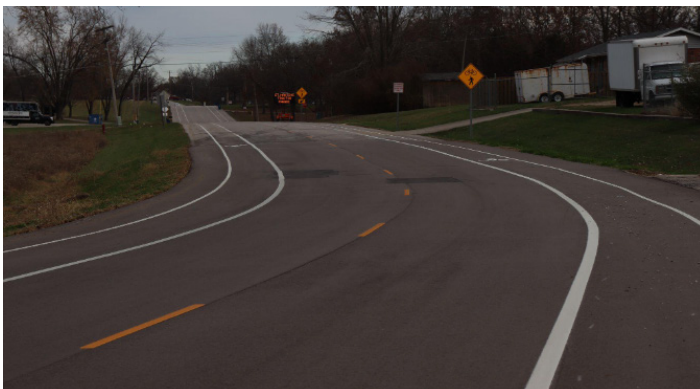
<sup>8</sup> Frisbie, L. (2024)

<sup>9</sup> Frisbie, L. (2024)

<sup>10</sup> Frisbie, L. (2024).



Figure 8: Crosswalks, such as the one pictured above, were installed along the length of the project.<sup>8</sup>



Figures 9 and 10: Bicycle and pedestrian lanes were added along the length of the project.<sup>9</sup>

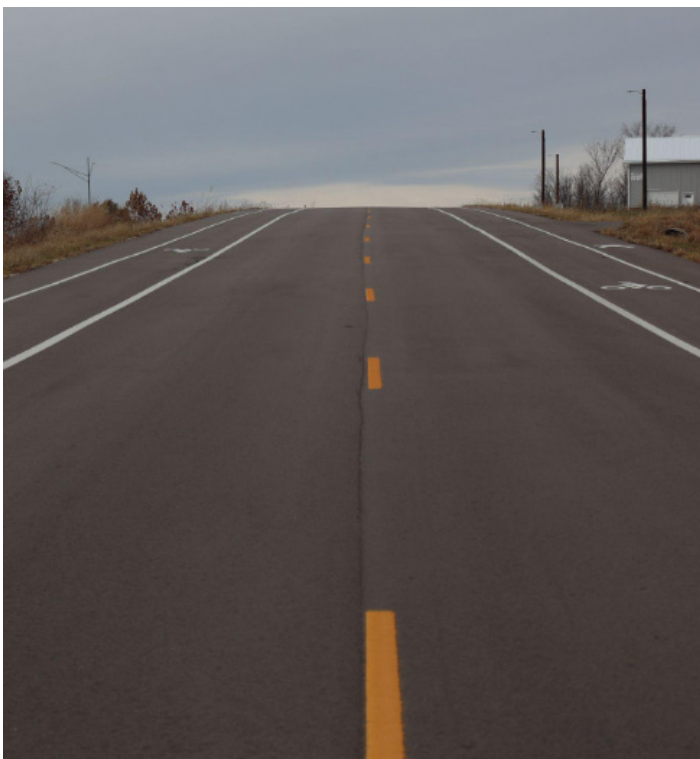


Figure 11: Safe System Approach Diagram<sup>12</sup>

beginning to seek out grant programs to improve VRU safety in an area. The Show Me Zero program focuses on creating safer roads through education, public policy, enforcement, engineering, and emergency response. This program’s goal aims to eliminate all traffic fatalities and injuries. Missouri’s SHSP outlines specific strategies to reduce fatalities and injuries, focusing on specific emphasis areas. The SAFER (Safety Assessment for Every Roadway) Program provides a good resource to identify potential safety risks. This program requires that all projects conduct safety assessments throughout the project by using the Safe System Approach. The SAFER program also encourages the Complete Streets Approach, which involves ensuring roadways are safely traversable for all users (motorists, pedestrians, bicyclists, etc.).

There are many resources available in the State of Missouri to reduce the increasing number of roadway crashes involving VRUs. A variety of funding opportunities can be utilized to aid community leaders and advocacy groups in implementing projects to make roads more usable for all and improve safety. Motorists, pedestrians, and bicyclists should all educate themselves on the dangers for VRUs. By focusing on funding opportunities and education, Missourians can help achieve the State’s goal of zero highway fatalities and injuries.

*For more information, check out these resources:*

- [modot.org/sites/default/files/documents/2024%20TAP%20Guide.pdf](https://modot.org/sites/default/files/documents/2024%20TAP%20Guide.pdf)
- [epg.modot.org/index.php/907.9\\_Safety\\_Assessment\\_For\\_Every\\_Roadway\\_\(SAFER\)](https://epg.modot.org/index.php/907.9_Safety_Assessment_For_Every_Roadway_(SAFER))
- [bikewalkkc.org/wp-content/uploads/2024/09/MoDOT-Vulnerable-Road-User-Safety-Assessment-November-2023.pdf](https://bikewalkkc.org/wp-content/uploads/2024/09/MoDOT-Vulnerable-Road-User-Safety-Assessment-November-2023.pdf)
- [ozarkstransportation.org/ss4a](https://ozarkstransportation.org/ss4a)
- [modot.org/number-vulnerable-roadway-user-fatalities-1c](https://modot.org/number-vulnerable-roadway-user-fatalities-1c)
- [savemolives.com/mcrs/dashboards](https://savemolives.com/mcrs/dashboards)
- [transportation.gov/grants/SS4A](https://transportation.gov/grants/SS4A)
- [modot.org/sites/default/files/documents/SHSP%20Blueprint%202023.pdf](https://modot.org/sites/default/files/documents/SHSP%20Blueprint%202023.pdf)

<sup>11</sup>Missouri Department of Transportation. (2023). *Vulnerable Roadway User Assessment*. [bikewalkkc.org/wp-content/uploads/2024/09/MoDOT-Vulnerable-Road-User-Safety-AssessmentNovember-2023.pdf](https://bikewalkkc.org/wp-content/uploads/2024/09/MoDOT-Vulnerable-Road-User-Safety-AssessmentNovember-2023.pdf)

<sup>12</sup>Missouri Department of Transportation. (2023). *Safety Assessment For Every Roadway*. [epg.modot.org/index.php/907.9\\_Safety\\_Assessment\\_For\\_Every\\_Roadway\\_\(SAFER\)](https://epg.modot.org/index.php/907.9_Safety_Assessment_For_Every_Roadway_(SAFER))

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The Missouri LTAP staff would like to remind all agencies registering for classes that it is important to sign-up before the registration deadline to allow us time to plan for course materials, refreshments, etc. It is equally important that you let us know at least 48 hours before the class if some of your employees will not be attending. Please note that you will be charged for any no-shows; therefore, it is very important that you let us know at least 48 hours before. This policy was approved by our Missouri LTAP Advisory Board and ensures that we have an accurate count for class attendance. Thank you and we look forward to meeting your training needs.

### **Need training but don't have the budget to pay for travel expenses?**

We can train your employees on location for a minimum of 20 people. You can invite other interested agencies in your area if necessary to meet the minimum. Call and discuss your training needs with our staff.

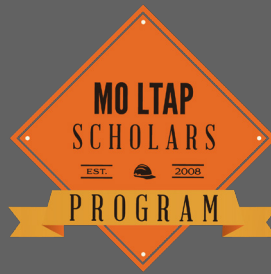
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## **MO-LTAP SCHOLARS PROGRAM**

A Training & Recognition Program



### **About The Program**

The primary purpose of the MO-LTAP Scholars Program is to recognize skilled transportation and public works personnel in local agencies throughout Missouri. The program is intended to enhance the skills of all those involved in the maintenance, delivery, and management of local transportation and infrastructure. Training is aimed at increasing each participant's technical, maintenance, administrative, and supervisory skills depending on the program level. Electives can be selected to meet the individual's area of responsibility. Special emphasis will be given to safety in the workplace as well as in the field and in the development of a local transportation system. The program will allow participants to attain three levels of achievements: Level I, Level II, and Level III Super Scholar. Participants must complete the requirements for Level I before completing Level II.

### **Getting Started**

Registration is available on the Missouri LTAP website ([www.moltap.org](http://www.moltap.org)). There is no registration fee for the program, but there is a fee for each class, which varies for each level. Classes are offered on an ongoing basis at various locations throughout the state. Contact Missouri LTAP for classes in your area or view the online training calendar.

### **Recognition**

Certificates will be awarded by the Missouri LTAP Director to those individuals who successfully complete the requirements of the program during award ceremonies held at various conferences throughout the state and/or at a ceremony held at the graduate's place of employment.

## **LTAP TRAINING RESOURCES**

### **FHWA Essentials for Local Public Agencies**

Federal-aid Essentials for Local Public Agencies is a transportation resource designed to help local agency professionals navigate the Federal-aid Highway Program. Federal-aid Essentials is structured for busy agency staff who want further understanding of Federal-aid policies, procedures, and practices.

**[fhwa.dot.gov/federal-aidessentials/indexofvideos.cfm](http://fhwa.dot.gov/federal-aidessentials/indexofvideos.cfm)**

### **Missouri Local Public Agency Program**

The Federal Highway Administration (FHWA) and MoDOT offers a free 4-hour training class designed to meet the recently implemented requirements for a Full Time Sponsor Employee to serve the role as the Person In Responsible Charge in order to receive Federal-aid funding for Locally Administered Projects. Local public agencies and consultants will be required to have taken this basic training course.

**[design.modot.mo.gov/lpatraining/](http://design.modot.mo.gov/lpatraining/)**

### **APWA – Professional Development**

APWA offers online, face-to-face, and on-demand programs, with educational content that fits within your time and travel constraints. The Donald C. Stone Center provides professional development opportunities for the next generation of public works leadership.

**[apwa.net/learn](http://apwa.net/learn)**

### **NHI – Training Resources**

National Highway Institute, NHI, is the training and education arm of the Federal Highway Administration (FHWA) with its rich history of innovation and expertise in delivering transportation training.

**[nhi.fhwa.dot.gov/home.aspx](http://nhi.fhwa.dot.gov/home.aspx)**



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## UPCOMING EVENTS

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### 2025 NLTAPA CONFERENCE KANSAS CITY, MO

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