

► GETTING TO VISION ZERO

### MASS ROAD SAFETY SUMMIT





## LET'S LEARN FROM EACH OTHER AND MAKE MASSACHUSETTS A LEADER IN ROAD SAFETY

We were pleased to host respected leaders from the United States and Europe for *Getting to Vision Zero: Mass Road Safety Summit.* I want to thank MassDOT and Boston Children's Hospital for collaborating with Fundación MAPFRE to host this important conversation.

MAPFRE has been a proud sponsor of the MassDOT Highway Assistance Program for over 20 years, helping stranded motorists get back on the road as quickly and safely as possible at no cost to the driver. As of 2023, the Highway Assistance fleet has patrolled close to 30 million miles throughout the Commonwealth and responded to over 742,000 incidents, from changing flat tires to performing lifesaving measures like CPR. I want to thank the Secretary and CEO of MassDOT Monica Tibbits-Nutt for being here today and to MassDOT for its continued dedication to delivering this important service.

I also want to thank Boston Children's Hospital for their collaboration on the Injury Prevention Program. This initiative is led by the hospital's Trauma Center under the leadership of Dr. David Mooney, who was one of our summit panelists. The injury prevention van travels to neighborhoods and schools throughout Massachusetts, offering education on injury prevention in children and adolescents. In 2023 alone, it reached 58,000 people, distributed over 1,300 car seats, taught 10,000 students, and fitted 3,600 bike helmets. We are inspired by the work they are doing to prevent and reduce the number of injuries in our youngest residents.



We are united by a common purpose: to improve road safety across Massachusetts and beyond. As technology continues to push us to reimagine transportation, it is imperative that we prioritize the safety of our roads for pedestrians, cyclists, and drivers alike.

In Massachusetts, we are proud of our vibrant communities and bustling roads. However, with this vibrancy comes responsibility. Every year, we face the tragic consequences of road crashes, affecting families and communities throughout our state.

In 2022, over 42,000 people were killed in the U.S., and over 20,000 in the EU, due to road-related crashes. Through today's conversations, our goal is to bring about a future where these numbers are zero.

This summit served as an incredible platform for collaboration. We have gathered experts from the U.S. from transportation, urban planning, public health, and technology who bring diverse perspectives to this issue.

We had the privilege of welcoming distinguished speakers from Europe, where innovative safety measures have significantly reduced road fatalities. Their insights into effective policies and practices are invaluable as we strive to implement similar strategies here in Massachusetts. It is through this interdisciplinary dialogue that we can continue to strengthen our approach to road safety.

As we heard from the summit's speakers and engaged in discussions, it allowed us all to think critically and creatively about the solutions we can implement. Our collective efforts can lead to a future where our roads are safer and more accessible for everyone.

Let us take this opportunity to learn from one another and commit to actions that will make Massachusetts a leader in road safety.

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### AMERICA HAS A ROAD SAFETY PROBLEM.

Every day in the U.S., more than 100 people are killed and countless others injured in roadway crashes. Motorists, passengers, pedestrians, motorcyclists, and bicyclists are all among the victims, and the numbers have only increased since the start of the COVID-19 pandemic. Between dangerous speeding, impaired driving, distracted driving, and more, the causes are many and their effects are tragic.

Even in leading states like Massachusetts, where the traffic fatality rate (6.2 per 100,000 residents) is about half that of the U.S. at large (12.8), roadway deaths are on the rise, with more than 430 deaths in 2022 setting an all-time high for the Commonwealth.

In other words, as it seeks to achieve Vision Zero – the ambitious goal to eliminate traffic fatalities and serious injuries adopted by cities, states, and countries around the world – we all have a role to play to prevent roadway deaths and injuries, and we all must do better.

It doesn't have to be this way. A number of countries have achieved much lower traffic fatality rates than the U.S. Most notably, in Europe, countries like Spain, Germany, Sweden, Switzerland, the Netherlands, the United Kingdom, and others have managed to limit auto fatalities to under 4 per 100,000 residents. Yet Europe is not without its own challenges: after years of gains in roadway safety, progress has plateaued and the continent counted more than 20,600 auto deaths in 2022.

That's why Fundación MAPFRE – the charitable arm of the global, Spain-based insurance giant – convened safety professionals, experts, and public officials from Europe and the U.S. for the Getting to Vision Zero: Mass. Road Safety Summit on Oct. 28. Organized in partnership with the Massachusetts Department of Transportation and Boston Children's Hospital, and hosted before a sweeping view of the city at the UMass Club in downtown Boston, the Summit facilitated thoughtful discussion, the exchange of ideas, and opportunities for collaboration and networking across continents.

"It is through this interdisciplinary dialogue that we can continue to strengthen our approach to road safety." MAPFRE USA President & CEO Jaime Tamayo said during the event's opening remarks.

At some level, that exchange of ideas is already well-established. Álvaro Gómez, directorate general for traffic in Spain's Ministry of Home Affairs, noted at the Summit that Europe's progress on road safety began decades ago, when officials there looked to America's then-leading vehicle regulations to cut down on deaths. Now that their positions have shifted, America can learn from Europe; Kris Carter, Chief Possibility Officer at the Massachusetts Department of Transportation, said the Commonwealth looked to Europe as it designed a new law that will make trucks safer by requiring equipment such as side guards and crossover mirrors. "We drew on years and years of EU experience," Carter said.

But let's back up a moment. All those numbers above? Each data point represents real people who have fallen victim to safety issues on the roads – lives that were ended, families that were torn apart. It's a point Summit participants returned to throughout the day, and one emphasized by Massachusetts Transportation Secretary Monica Tibbits-Nutt during the day's opening keynote speech.

"When you talk about Massachusetts, we are a very safe state. But we still have fatalities," she said.

"And when we talk about each of those fatalities, they're people. ... For us, it really is very important to make it personal, because when you make it personal it makes it much easier to push for these safety measures that can sometimes be difficult."

The roads are an especially dangerous place for children, for whom traffic deaths are the leading cause of death. And with today's global youth representing the largest generation in world history and so interconnected through the Internet, young people are driving demand for safer roads. In an afternoon keynote, Raquel Barrios, director of the international organization Youth for Road Safety (YOURS), said this cohort has the potential to usher in real change around the world.

"Today's youth must not be only the beneficiaries of road safety policies, but active architects of the solutions," Barrios said. "I'm convinced that this generation is able to put safety as a societal value."



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The event's four panels, each gamely moderated by MAPFRE USA Chief Operating Officer Daniel Olohan, respectively focused on:

**The Human Impact,** featuring Cathy Andreozzi, MADD Victim Impact Speaker; David Mooney, MD, MPH, Trauma Medical Director of Boston Children's Hospital; Karin Valentine Goins, MPH, Program Director for Preventative and Behavioral Medicine at the University of Massachusetts Medical School; and Raquel Barrios, Executive Director of Youth for Road Safety (YOURS).

Road Design to Auto Manufacturing: The Role of Innovation in Saving Lives, featuring Oliver Carsten, Professor at the University of Leeds; Kris Carter, Chief Possibility Officer at the Massachusetts Department of Transportation; David Zipper, Senior Fellow at the MIT Mobility Initiative; and Anders Lie, PHD, Professor at Chalmers University of Technology and a former transportation safety official in Sweden.

**Safety for Pedestrians, Bicyclists, & Vulnerable Road Users**, featuring Dane Eifling, Mobility Coordinator for the City of Fayetteville, Ark.; Chris Dempsey, Partner at Speck Dempsey; Álvaro Gómez, Directorate General for Traffic in Spain's Ministry for Home Affairs; and Jascha Franklin-Hodge, Chief of Streets at the City of Boston.

Managing Speed & Curbing Distracted Driving, featuring Franke Müntze of the European Transport Safety Council; Bonnie Polin, State Safety Engineer at the Massachusetts Department of Transportation; Sam Madden, Computer Science Professor at the Massachusetts Institute of Technology and co-founder of Cambridge Mobile Telematics; and Jay Winsten, PhD, Lecturer at Harvard's Advanced Leadership Initiative

For as many different perspectives as the Summit assembled, there was widespread recognition that nobody plays a greater role in achieving Vision Zero than municipal officials tasked with overseeing the roads.

"I can talk about this all the time," Secretary Tibbits-Nutt said, addressing the municipal officials in the room. "But when it comes to the planning and organization, you have much more power than I do in actually putting together these policies."

Fundación MAPFRE is proud to provide this report on the Mass. Road Safety Summit, and hope that municipal officials – and anybody seeking to solve these challenges – find ideas, frameworks, and inspiration as they take on this incredibly important challenge.



## TRAFFIC SAFETY CARRIES INTENSE PERSONAL STAKES

Tori Andreozzi was 12 years old and within feet of reaching her home after getting off the school bus when the straight-A student and martial arts champion was struck by a drunk driver, forever altering her life and her family.

A rapt audience at the Mass. Road Safety Summit heard the painful story from Tori's mother, Cathy, at the outset of the day's first panel. The discussion emphasized that behind every data point, policy idea, or technical solution, traffic safety carries intense personal stakes. While Tori would live nearly another 20 years, it was never the same and ended far too early. She was left with a traumatic brain injury and was robbed of the life she could have led.

Andreozzi, who serves as a victim impact speaker for Mothers Against Drunk Driving from Rhode Island, said she had "all of these hopes and dreams" for Tori's future.

"But all of those were shattered, they disappeared, because somebody made an irresponsible choice. Poor choices on our roadways maim and they kill. And that impact they make, it infiltrates every single aspect of your life. It destroys you emotionally, it drains you financially, it breaks you physically, and it shatters relationships."



Stories like the Andreozzis' are far too common. In the U.S. and around the world, traffic deaths represent the leading cause of death for young people. About 1,000 young people around the world die on the roads each day. And, as Dr. David Mooney, trauma medical director at Boston Children's Hospital noted, deaths are only the "tip of the iceberg."

For every child killed in a crash, another 40 are injured to the point of hospital treatment, others are treated elsewhere, and even among those who are uninjured, one-third wind up with stress disorders that can interfere with their education or social lives. The impacts also extend even beyond victims and their families and friends; hospital staff often require stress debriefings from the emotional toll of treating young children killed by crashes.

"Sadly, every day there's another family," Mooney said. "A kid came in last night with a bad brain injury from a car crash. Every day there's another family that's traumatized, there's another marriage that's on edge, there's another sibling whose life has been disrupted."

The toll is worsened, Mooney said, by the sad fact that many injuries and deaths are preventable: something like 50% of young victims his team sees from car crashes were not properly restrained in their seats.

While being prominent victims on the road, young people are also often a source of blame for dangerous driving, and data supports the idea that teen drivers are the riskiest on the road. But Barrios emphasized that young people are also some of the loudest advocating for change.

Young people, of course, are not the road's only victims. No population is immune, and Karin Valentine-Goins, program director for preventative and behavioral medicine at the University of Massachusetts Medical School, said low-income communities suffer disproportionately from roadway safety issues.

#### **SEATBELTS**

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Valentine-Goins, who has worked to improve road conditions in the city of Worcester, said that active transportation – such as walking and cycling – should come with many benefits: mental health, physical health, increasing social connections, developing child independence, reducing pollution, saving money, and more. That makes it particularly frustrating that it can be so unsafe.

Panelists grappled with the idea of how to make the deleterious impacts of auto crashes more tangible to a population that may have grown desensitized to them. Barrios said that from the time they are very young, children are often not taught to think of cars and trucks as dangerous but instead perceive them as exciting toys. "They would never, ever perceive a car as something that can threaten their lives," she said.

Valentine-Goins suggested that one way to make clear to people – especially elected officials and staff with the power to make change – just how dangerous roads can be. "Getting people out of their cars to experience the environment, how hostile it feels to walkers and bikers and how deadly it feels, can be very powerful," she said.

Andreozzi has made her daughter Tori's story well known across Rhode Island, and regularly tells it to driver's education classes.

"When I walk into a high school class, they're not going to necessarily relate to an older woman, but I can speak to it from Tori's point of view. Or they can relate to it in terms of their relationship with their mother," she said. "They have to really understand the impact and that anyone, any time, anywhere can be affected."



#### ROLE OF INNOVATION IN SAVING LIVES.

A sea of change has hit new vehicles in the European Union. Since the summer of 2024, all new vehicles in Europe are required to feature Intelligent Speed Assistance technology – an invehicle system that, by default, controls vehicle speeds to comply with the speed limit unless the driver actively overrides it. The technology has existed for decades, but EU regulation will supercharge its adoption across the continent with incredibly clear safety benefits, said Oliver Carsten, a UK transportation safety expert and University of Leeds professor who researched the technology for more than 20 years and helped push for the EU rule.

"The biggest problem in traffic is speed. Speed is the direct contributor to a huge number of crashes and fatalities," Carsten said during the Mass. Road Safety Summit's second panel, focused on the role of innovation. "A 1% change in speed would produce a 4% change in change, up or down, in fatalities. ... If you make everybody obey the speed limit, you can save maybe half the fatalities."

Once an area of leadership for the U.S., Europe has taken the lead in adopting new safety requirements in vehicles. It's not as if the technology to make vehicles safer doesn't exist; it can be purchased in the U.S. But Europe has made it compulsory, and not just Intelligent Speed Assistance. The EU now also requires lane-keeping technology, driver drowsiness alerts, and emergency braking, and additional requirements will come into effect in the coming years.

Still, innovation can come in forms beyond vehicle technology. David Zipper, a prominent transportation and urban design expert and senior fellow at the MIT Mobility Initiative, said he is a big fan of cameras that can be mounted on buses to automatically detect traffic violations and issue tickets. Kris Carter, the Chief Possibility Officer at the Massachusetts Department of Transportation, cited innovative policies, offering new Massachusetts law to make large trucks safer as an example.

Anders Lie, a former Swedish transportation official, offered Vision Zero itself as an innovation. After all, it was an audacious idea with global reach, including its birthplace of Sweden, which boasts one of the lowest traffic death rates in the world. As one example, he credited the widespread adoption of roundabouts with helping to make so much progress.

"The real innovation needs to be the human-centric city," Lie said, as opposed to one designed to make driving easier.

Zipper, however, noted that Vision Zero is only as admirable as its implementation. Too often, he argued, cities say they will adopt Vision Zero but then don't do much work to achieve it – as if they believe simply saying they want to meet the goal is good enough. (He cited Boston as one of "the rare success stories" of U.S. cities to have actually made tangible progress on Vision Zero.)

"The goal was to issue the press release," Zipper said. "No one is made safer by a press release. When push comes to shove, the way you actually save lives...is by slowing down car travel."

Advances in innovation can have negative impacts on the road in other ways, panelists pointed out. For example, use of the large infotainment systems that have proliferated in modern vehicles may not be all that much better from a distracted driving perspective than thumbing at a smartphone. And the march toward autonomous vehicles where motorists drive hands-free on the highway threatens to make distracted driving worse.

"All the evidence is that people who use the ability to no longer control the vehicle engage in non-driving-related activity, like use of the mobile phone," Carsten said. "So, we can have pernicious innovation as well as constructive innovation, and we have to be really careful that all those new automated assistance systems that are coming do not cause problems."

While panelists stewed on policies and broader concepts throughout the discussion, they returned repeatedly to vehicle technology as a primary source of safety innovation. And while all innovations should be on the table, changes to vehicular technology may prove to take hold more quickly than large-scale changes to society, Lie said.

"Cars are scrapped around the age of 20. Drivers are scrapped at the age of 80, and roads are scrapped at the age of 180," Lie said. "So, cars are by far the most dynamic element we have."

Panelists thought through ways to get vehicle safety technologies into broader usage across the U.S., suggesting ideas such as new occupational safety and health rules to require them in commercial vehicles or broadening their usage in rental fleets.

# SAFETY FOR PEDESTRIANS, BICYCLISTS, & VULNERABLE ROAD USERS

Centre Street in the West Roxbury neighborhood of Boston had for years been a major safety issue – a wide, busy, and fast-moving four-lane arterial road that had been the site of multiple injuries and fatalities. In 2019, following a horrific crash that killed a pedestrian, Boston officials laid out a plan to calm traffic on the road, narrowing it by a lane and otherwise reorienting it to make it safer for pedestrians, cyclists, and other vulnerable road users that are too often put at risk on busy roads like Centre Street. Even after some neighborhood opposition, officials proceeded with safety improvements, including installing dedicated bicycle lanes on both sides of Centre Street which include flex posts and pavement markings.

It's an example of the type of the common challenges that stifle officials' efforts to achieve Vision Zero.

"The biggest challenges that we see fundamentally center around how quickly we can make change," Jascha Franklin-Hodge, Boston's Chief of Streets, said at the start of the day's third panel. In addition to the engineering, planning, and financial challenges involved with meeting that goal, neighborhood politics are also a major factor. "It is politically often extremely difficult to make changes that have a tradeoff between vehicular speed and parking convenience, and the safety of vulnerable users on the street."



And how do you solve a problem so thorny? Panelists offered different perspectives. Dane Eifling, the mobility coordinator charged with implementing the Vision Zero plan in Fayetteville, Ark., suggested channeling emotion. "Get angry. Get upset that we have people getting run over and killed that are just trying to walk home from work," he said. "Get angry about it, because that's really what helps me focus my energy on the task at hand and try to figure out what I can do with my limited resources."

Chris Dempsey, a former Massachusetts transportation official who is now a partner at the urban design firm Speck Dempsey, suggested a more data-oriented approach. He noted that 80 percent of crashes tend to take place on 20 percent of the road, meaning it is possible to make major progress by isolating 10 or 15 streets to focus on in a given city.

"There is some comfort in knowing that we might be able to reduce 60, 70, 80 percent of crashes in a community by focusing on a tangible and set number of streets."

Franklin-Hodge said there may be a middle ground: appealing to people's more personal experience in order to make more systemic changes. For example, he said, in Boston, residents often request traffic calming measures on residential side streets. Although the data say these measures don't necessarily have a major safety impact, they do give residents peace of mind – and may open their minds to redesigns on busier streets down the road.

"It's trying to support a culture shift of how our streets operate," he said.

On a somewhat similar note, Eifling said Fayetteville residents respond well to aesthetically pleasing roadway safety improvements. It is a priority for each project, he said, to "make it cute," in order to appeal to win public support.

Such culture shifts are possible. Álvaro Gómez, Spain's directorate general for traffic, said in his country – where default speeds are about 20 m.p.h., the City of Madrid has even shut off some streets to automobiles, and vulnerable users tend to have much more road space dedicated to them, the very concept of roadway safety has become a politically uniting issue.

"When it comes to roadway safety, there is a consensus," he said. "Regardless of the political party that is ruling the city, officials from the local government say, 'My goal is to have less car crashes.' ... It takes time, but you can get there."

Dempsey said a handful of American cities – Jersey City and Hoboken, N.J., as well as Alexandria, Va. – have gone years without an auto fatality, effectively achieving Vision Zero at least for now. Now it's difficult to imagine the alternative: "It's become an expectation at this point," he said.

Municipal transportation officials also need to put in the work to get officials from other departments – such as the Department of Public Works – onboard with making road changes, panelists suggested. Tactics can include incorporating other city officials early in the process, emphasizing the availability of federal or state funds to complete projects, or appealing to the notion that cities used to be more walkable and this project restores some of that history.

Still, it can also take some straight-up political courage to deliver that change. Back in West Roxbury, Centre Street came speeding back into the news in 2022, when a five-year-old was injured in the street, avoiding tragedy by mere inches. Franklin-Hodge vividly recalled Mayor Michelle Wu shortly thereafter attending a packed community meeting at a local school to make clear that the status quo on Centre Street could not stand.

"You need people who are willing to stand up and say, 'I know you feel strongly about this, but this is the right thing to do," he said.

The Centre Street changes were eventually made. And for all the opposition and commotion, Franklin-Hodge said, people got used to it and came around after about six months. "You need people who are willing to stand up and say, 'I know you feel strongly about this, but this is the right thing to do."

Jascha Franklin-Hodge, City of Boston's Chief of Streets



FRANK MÜTZE, EUROPEAN TRANSPORT SAFETY COUNCIL (BELGIUM)

BONNIE POLIN STATE SAFETY ENGINEER, MASSDOT









# THE UPTICK IN SPEEDING CAME ALONG WITH COVID LOCKDOWNS.

For whatever reason – maybe the lack of traffic congestion, maybe the desire to let loose in a time of tight governmental control – in 2020, drivers were suddenly flying down highways. And that wasn't all: high-risk behavior of all sorts took off on the roads and still hasn't settled down.

"We saw a decrease in seatbelts, we saw the increase in speed, we saw the increase in distraction," said Bonnie Polin, State Safety Engineer at the Massachusetts Department of Transportation, during the Summit's panel on speeding and distracted driving. "It is getting better now. But it still hasn't gone down to pre-COVID levels."

The phenomenon is not unique to Massachusetts; speeding – and traffic deaths – increased across the U.S. in 2020. But many roadway safety issues have long lingered, including distracted driving – so commonly violated that it has persisted despite laws designed to curb handheld phone usage while behind the wheel.

Part of the problem is that people don't realize how risky their behavior is until they feel the consequences of it, said Jay Winsten, a lecturer at Harvard's Advanced Leadership Initiative. "Each time we get away with it, it implicitly reinforces our sense that we're not the problem. "Everyone thinks they're an above-average driver," he said. "They think, 'I can get away with it because I'm a great driver...and the other drivers are all lousy.""

Earlier in his career, through his work at Harvard, Winsten played a major role in the national education campaign to cut down on drunk driving through the use of designated drivers. Widespread media campaigns, including depictions in popular TV programs, helped create a new cultural norm by stigmatizing drunk driving. However, he said, that may be more of a challenge today for things like distracted driving because it is harder to reach the mass public; the very devices that distract drivers have also made the modern media and communications environment so fragmented.

Drivers do respond to changes in the law, especially when a widespread communication campaign accompanies it. Sam Madden, co-founder of Cambridge Mobile Telematics, a company that works with insurers to use device data to incentivize safer driving, said distracted driving does tend to fall shortly after laws against it go into effect, though it may rebound thereafter. The challenge can be sustaining that communication for the long-term, panelists agreed.

Frank Mütze, policy and project manager at the European Transport Safety Council, pointed to the European Union's recently implemented vehicle safety regulations – which include intelligent speed assistance technology and automatic braking – as the best way to curb dangerous road behavior, echoing points from earlier in the day.

"The whole package is regarded as important for improving road safety in Europe as the seatbelt was," he said. However, he added, it won't solve the problem overnight: "It will take a while for these vehicles, these technologies, to be available through the whole fleet."

Madden was skeptical that Americans would ever fully accept vehicle regulations to prevent them from speeding. Americans are also resistant to technology like speed cameras that automatically enforce traffic rules, even though the technology has been proven to work and is legal in at least some cases in nearly two-dozen states (Massachusetts is not among them). That American resistance to government oversight, and Europeans' greater willingness to accept it, was a recurring theme throughout the Summit, and highlighted one challenge of comparing policy across the Atlantic.

"It's such a hard regulatory environment," Madden said.

Insurers, however, may be able to play a role. Madden said insurance companies are increasingly offering discounts or rewards to drivers by tracking their real-time behavior, and that well-designed programs can have a significant impact.



"The biggest thing you can do is give people money for being better drivers," he said. "It can really make a big difference through really simple interventions that don't cost a lot."

Panelists discussed whether that technology could be made mandatory. It's possible some state insurance regulators, especially those more focused on safety, would be interested, Madden said.

But panelists agreed that safer roads will require multiple approaches – policy, enforcement, education, technology, and road design all play a major role.

"You need a multifaceted approach," Polin said.

In closing the summit, Jesus Monclus, Fundación MAPFRE's Director of Injury Prevention and Road Safety, reminded the audience of the importance of working together to solve this global crisis. "Together, we can implement successful initiatives to create lasting impact on road safety in Massachusetts, Europe and beyond."

#### Fundación MAPFRE



