WEBINAR

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since 1880

WELCOME TO THE

SOLUTIONS FOR SPEED MANAGEMENT WITH THE NTSB

WEBINAR

ABOUT THE SPEAKERS

KEN MCLEOD

Policy Director

League of American Bicyclists

ABOUT THE SPEAKERS

DR. IVAN CHEUNG

Senior Advisor

National Transportation Safety Board

ABOUT THE SPEAKERS

DR. WES KUMFER

Engineering Research Associate

University of North Carolina Highway Safety Research Center

THE LEAGUE OF AMERICAN BICYCLISTS
since 1880

FROM MARGINS TO MAINSTREAM

REFRAMING ROAD DESIGN

Designing for people is not optional. We create stronger communities and safer roads when people come first.

1

TRADITIONAL
CAR CENTRIC AWARENESS

2

REFORMED
WORKING TOWARDS SAFETY

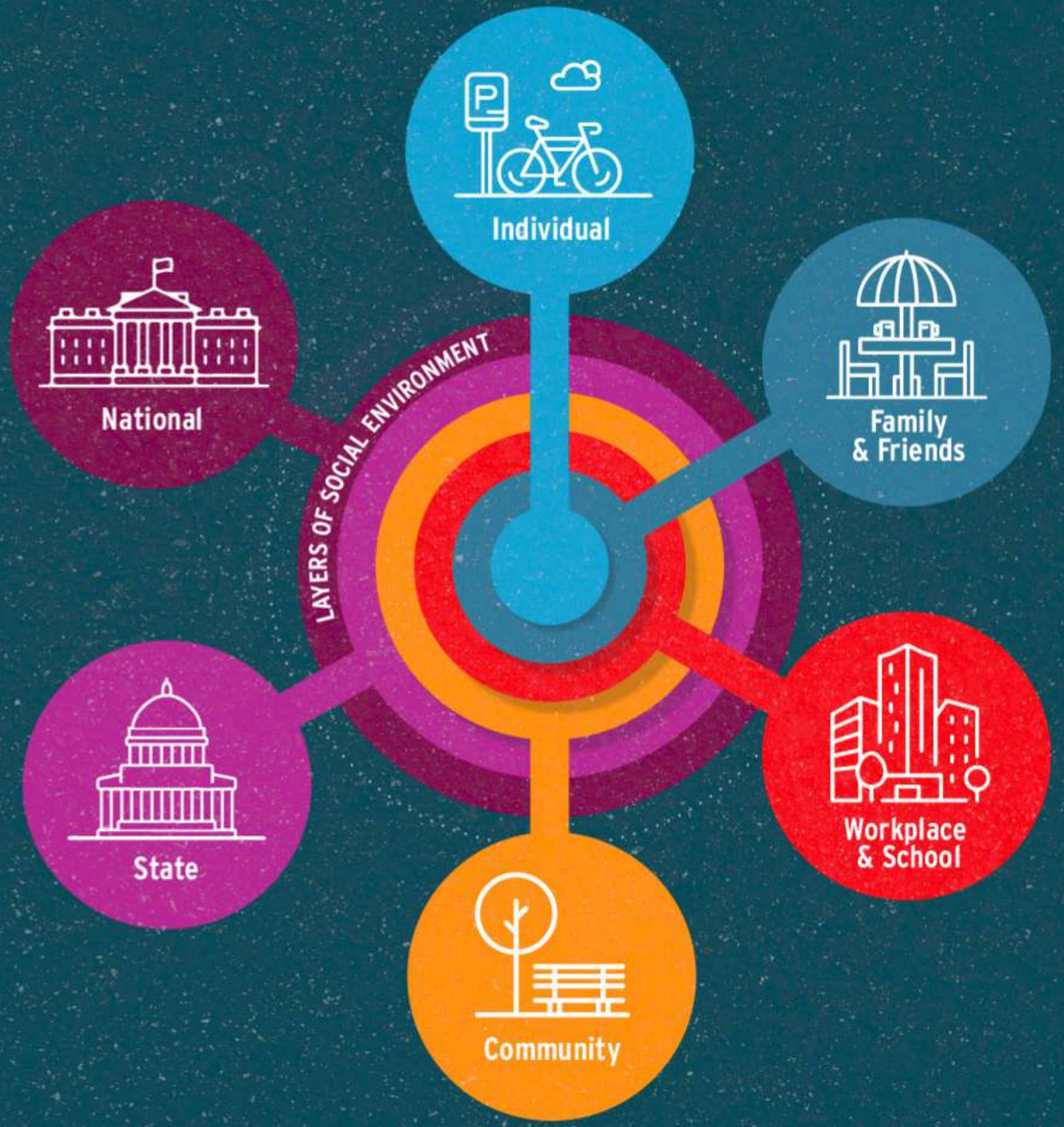
3

REFRAMED
PEOPLE-FIRST, SAFETY-FIRST

THE LEAGUE OF AMERICAN BICYCLISTS
since 1880

WE HAVE THE POWER TO BUILD A CULTURE FOR SAFER STREETS

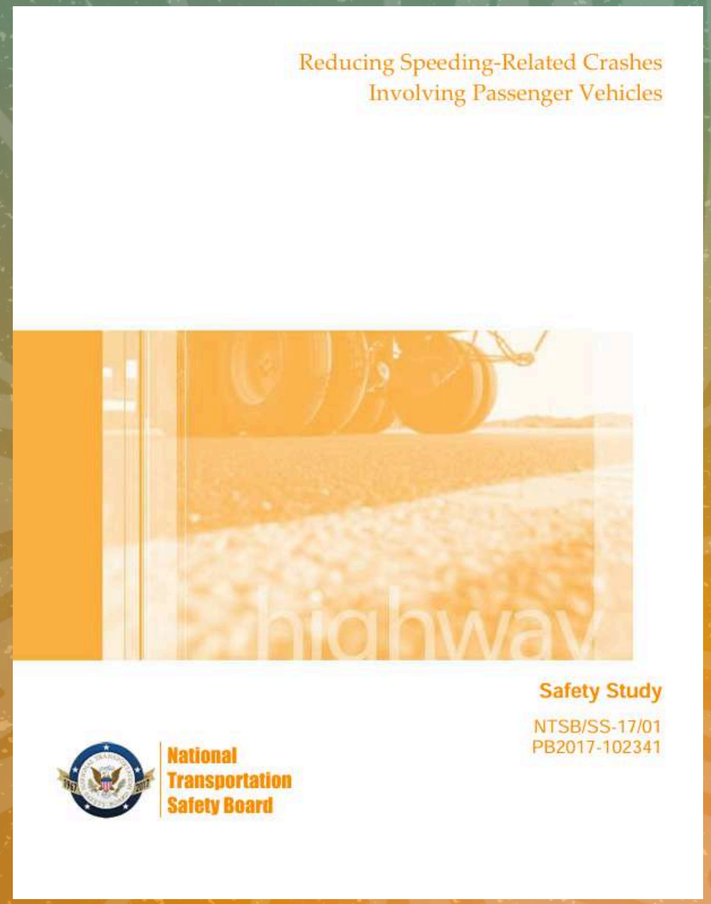
Changing our culture towards safer streets requires action at every level aligning policy, programs, and people.



NTSB RECOMMENDATIONS

19 RECOMMENDATIONS

- **TO FEDERAL AGENCIES**
  - THE US DEPARTMENT OF TRANSPORTATION (USDOT)
  - TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION (NHTSA)
  - TO THE FEDERAL HIGHWAY ADMINISTRATION (FHWA)
- **TO STATES TO ALLOW THE USE OF AUTOMATED SPEED ENFORCMENT**
  - TO THE SEVEN STATES PROHIBITING AUTOMATED SPEED ENFORCEMENT
  - TO THE 28 STATES WITHOUT AUTOMATED SPEED ENFORCEMENT LAWS
  - TO THE 15 STATES WITH AUTOMATED SPEED ENFORCEMENT RESTRICTIONS
- **TO ASSOCIATIONS INCREASE ADOPTION OF SPEEDING-RELATED ELEMENTS OF MODEL MINIMUM UNIFORM CRASH CRITERIA (MMUCC)**
  - TO NHTSA, THE GOVERNORS HIGHWAY SAFETY ASSOCIATION, INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE, AND NATIONAL SHERIFFS ASSOCIATION



NTSB RECOMMENDATIONS

HIGHLIGHTED RECOMMENDATION: H-17-22 AND H-17-29

- THE FHWA AND NHTSA SHOULD WORK TOGETHER TO UPDATE THE SPEED ENFORCEMENT CAMERA SYSTEMS OPERATIONAL GUIDELINES TO REFLECT THE LATEST AUTOMATED SPEED ENFORCEMENT (ASE) TECHNOLOGIES AND OPERATING PRACTICES, AND PROMOTE THE UPDATED GUIDELINES AMONG ASE PROGRAM ADMINISTRATORS

ACTION = UPDATED GUIDE PUBLISHED IN JANUARY 2023

"THE GUIDE EMPHASIZES [SPEED SAFETY CAMERAS] AS ONE COMPONENT OF A COMPREHENSIVE SPEED MANAGEMENT PROGRAM TO BE CAREFULLY APPLIED."

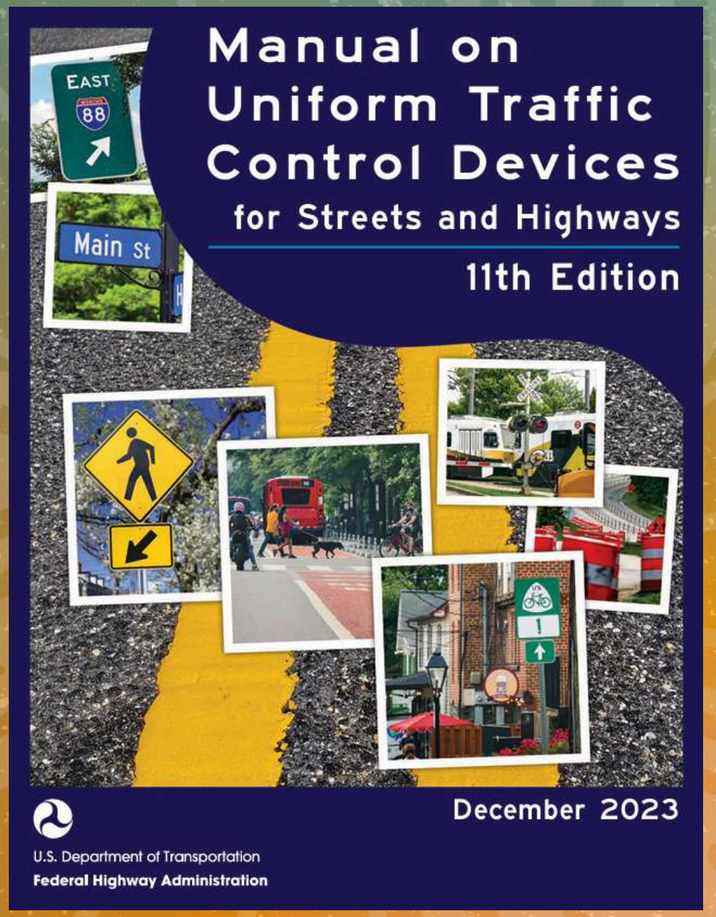
NTSB RECOMMENDATIONS

HIGHLIGHTED RECOMMENDATION: H-17-28

- REVISE SECTION 2B.13 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES TO, AT A MINIMUM, INCORPORATE THE SAFE SYSTEM APPROACH FOR URBAN ROADS TO STRENGTHEN PROTECTION FOR VULNERABLE ROAD USERS.

ACTION = UPDATED MANUAL PUBLISHED IN DECEMBER 2023

2B.21 SPEED LIMIT SIGN - "STANDARD: SPEED ZONES (OTHER THAN STATUTORY SPEED LIMITS) SHALL ONLY BE ESTABLISHED ON THE BASIS OF AN ENGINEERING STUDY THAT HAS BEEN PERFORMED IN ACCORDANCE WITH TRAFFIC ENGINEERING PRACTICES. THE ENGINEERING STUDY SHALL CONSIDER THE ROADWAY CONTEXT"



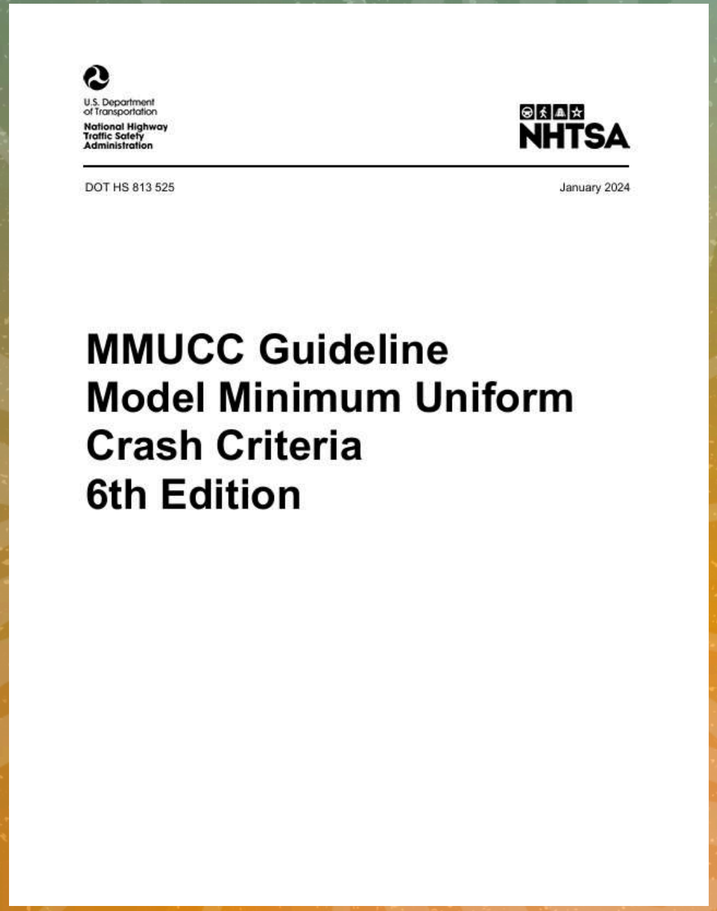
NTSB RECOMMENDATIONS

HIGHLIGHTED RECOMMENDATION: H-17-21, H-17-34, H-17-35, & H-17-36

- NHTSA, GHSA, IACP, AND THE NSA SHOULD WORK TOGETHER TO DEVELOP AND IMPLEMENT A PROGRAM TO INCREASE THE ADOPTION OF SPEEDING-RELATED MODEL MINIMUM UNIFORM CRASH CRITERIA GUIDELINE DATA ELEMENTS AND IMPROVE CONSISTENCY IN LAW ENFORCEMENT REPORTING OF SPEEDING-RELATED CRASHES

ACTION = UPDATED MMUCC PUBLISHED IN JANUARY 2024

"ALTHOUGH [REVISIONS] INCLUDE UPDATES TO SPEEDING-RELATED DATA ELEMENTS AND GUIDANCE, THESE CHANGES DO NOT ADDRESS THE INTENT OF SAFETY RECOMMENDATION H-17-21, WHICH IS TO INCREASE ADOPTION OF SPEEDING RELATED MMUCC ELEMENTS AMONG STATES TO IMPROVE LAW ENFORCEMENT REPORTING ...AND CONSISTENCY IN POLICE CRASH DATABASES"



DR. IVAN CHEUNG

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National Transportation Safety Board

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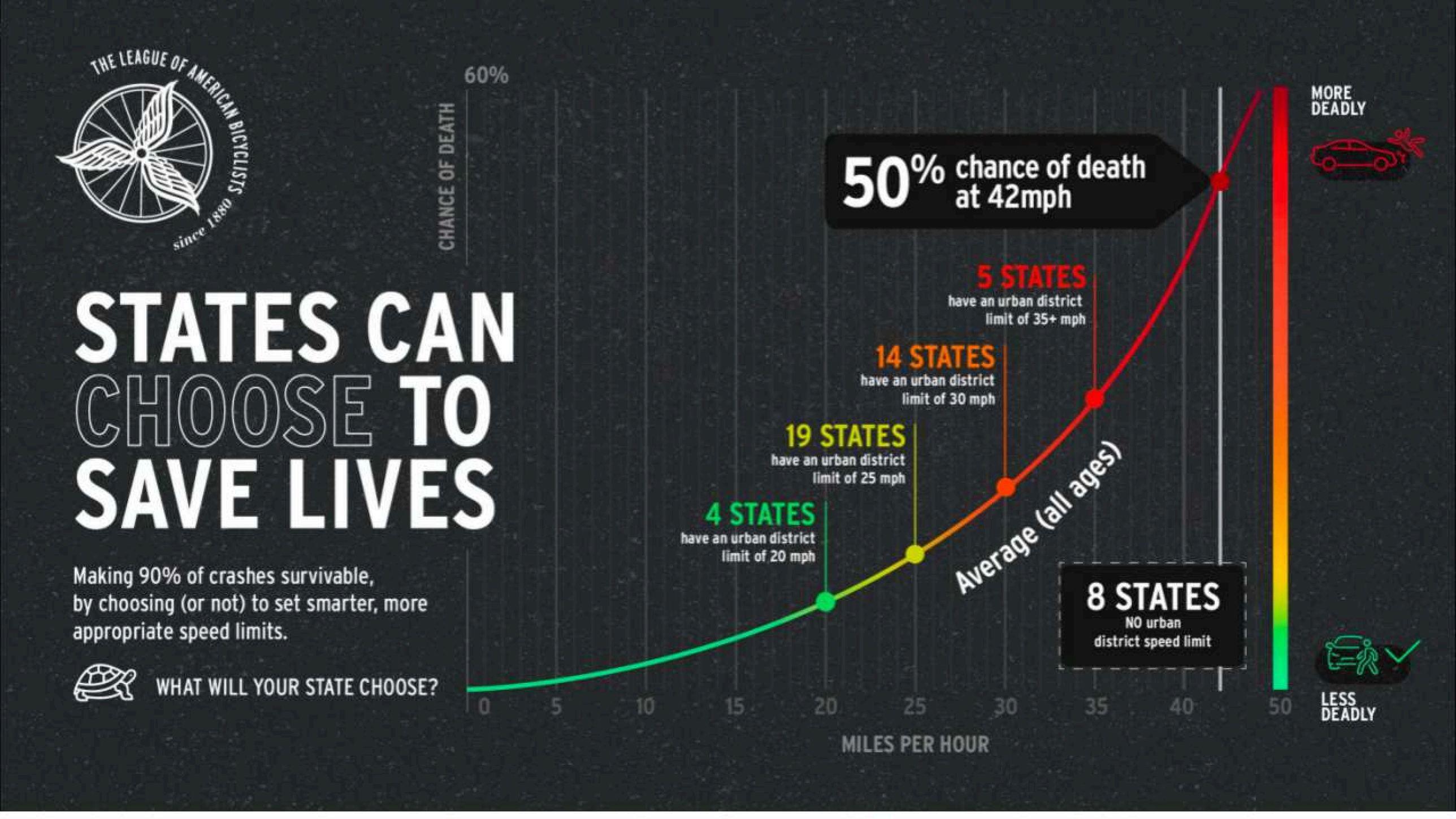
SIGNED FOR 20, DESIGNED FOR 20

Read how states are letting locals lower the limit: **bikeleague.org/2024-state-speed-legislation**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since 1880
STATES CAN CHOOSE TO SAVE LIVES
Making 90% of crashes survivable, by choosing (or not) to set smarter, more appropriate speed limits.
WHAT WILL YOUR STATE CHOOSE?
60%
CHANCE OF DEATH
50% chance of death at 42mph
5 STATES
have an urban district limit of 35+ mph
14 STATES
have an urban district limit of 30 mph
19 STATES
have an urban district limit of 25 mph
4 STATES
have an urban district limit of 20 mph
Average (all ages)
8 STATES
NO urban district speed limit
MORE DEADLY
LESS DEADLY
0
5
10
15
20
25
30
35
40
50
MILES PER HOUR

Take the pledge:

bikeleague.org/slow-roads-save-lives

TAKE THE PLEDGE

Help the League show the broad support across the country for Slow Roads.

Slow roads are safe roads. And safe roads make life better for everybody.

When roads are slow, our communities and neighborhoods thrive. When roads are safe, there are fewer crashes and those that do occur are less severe. In terms of both livability and survivability, slow roads are the best roads.

Roadway crashes are preventable and our national, state, and local leaders should prioritize efforts to eliminate and mitigate the scourge of traffic violence. Slow roads are critical to that.

A person hit by a vehicle traveling at 20 miles per hour (mph) has a 90 percent chance of survival. The risk of death more than doubles if that person is hit by a driver going 30 mph. Whether the crash occurs due to distraction, intoxication, speeding, or any other bad behavior, the crash speed controls whether the person hit is likely to live or die.

The most common speed limit on a road where a person biking or walking is killed is 45 mph. More than 90 percent of the nearly 43,000 traffic deaths in the United States are on roads with speed limits over 30 mph.

We need safer streets in the United States.

To do that, we must embrace the protection provided by slow roads and slow speeds in our neighborhoods and other places where people biking, walking, or using mobility devices frequently intermix with motor vehicles. That's how other countries have successfully reduced traffic deaths: a combined embrace by government leaders and individuals of a traffic safety culture that favors slower speeds, including maximum vehicle travel speeds have been set to 20 mph (or less) on neighborhood roads and other streets where people live, work, learn, and play.

Show Your Support for Slow Roads Save Lives

As an individual driver, I support the "Slow Roads Save Lives" campaign and I pledge to embrace slower speeds by:

- Speaking up for the value of slow speeds, which reduce dangers to everyone by limiting the physical forces of potential crashes.
- Supporting transformational policy and roadway designs, which help make roads slower and safer for everyone.
- Driving 20 mph in my neighborhood, on the blocks where my family and neighbors live, walk, and play.
- Driving with an intention of speed limit compliance at all times and recognizing that I control the speed of my vehicle.

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THANKS FOR JOINING

SOLUTIONS FOR SPEED MANAGEMENT WITH THE NTSB

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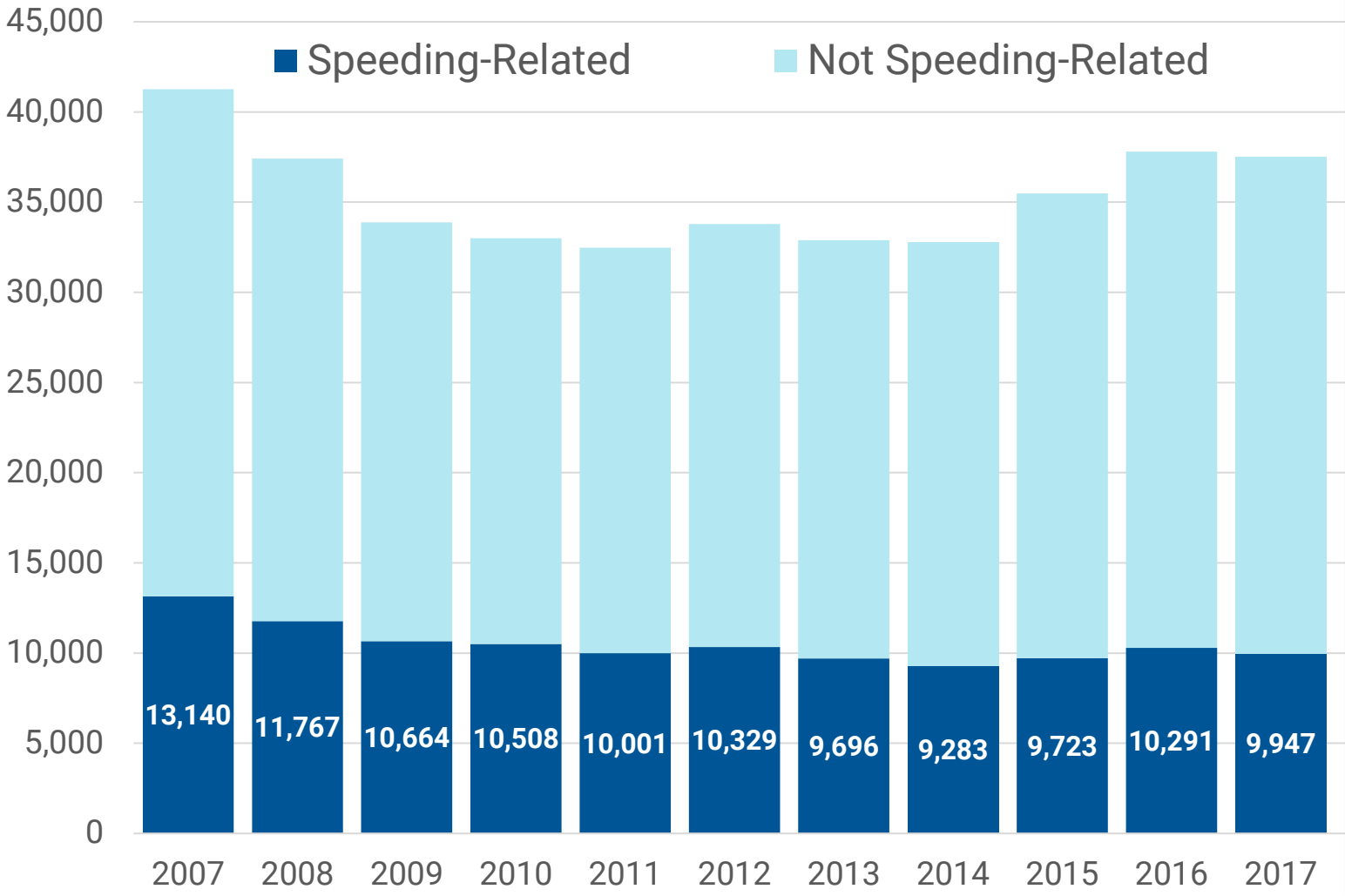
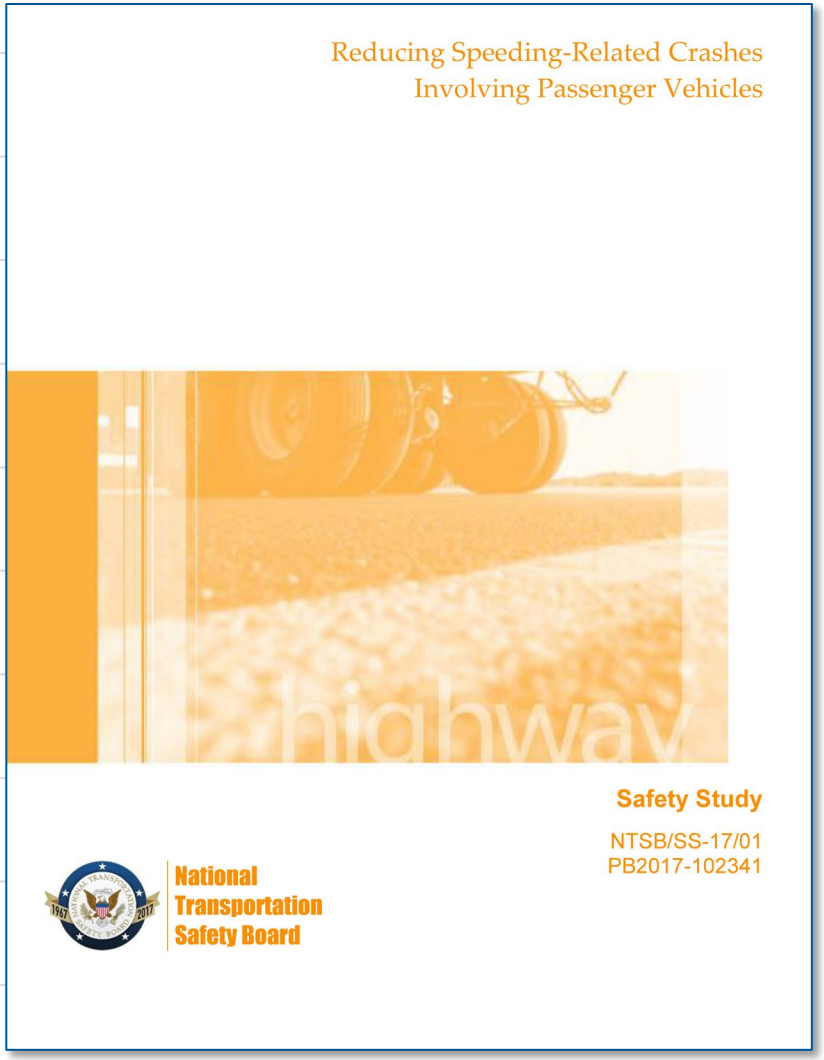
Solutions for Speed Management: An Update on the 2017 *"Reducing Speeding-Related Crashes Involving Passenger Vehicles"* Report

Ivan Cheung, PhD
Senior Advisor, Office of Member Thomas B. Chapman

The League of American Bicyclists Webinar
August 20, 2024

US Speeding-Related Fatalities, 2007-2017





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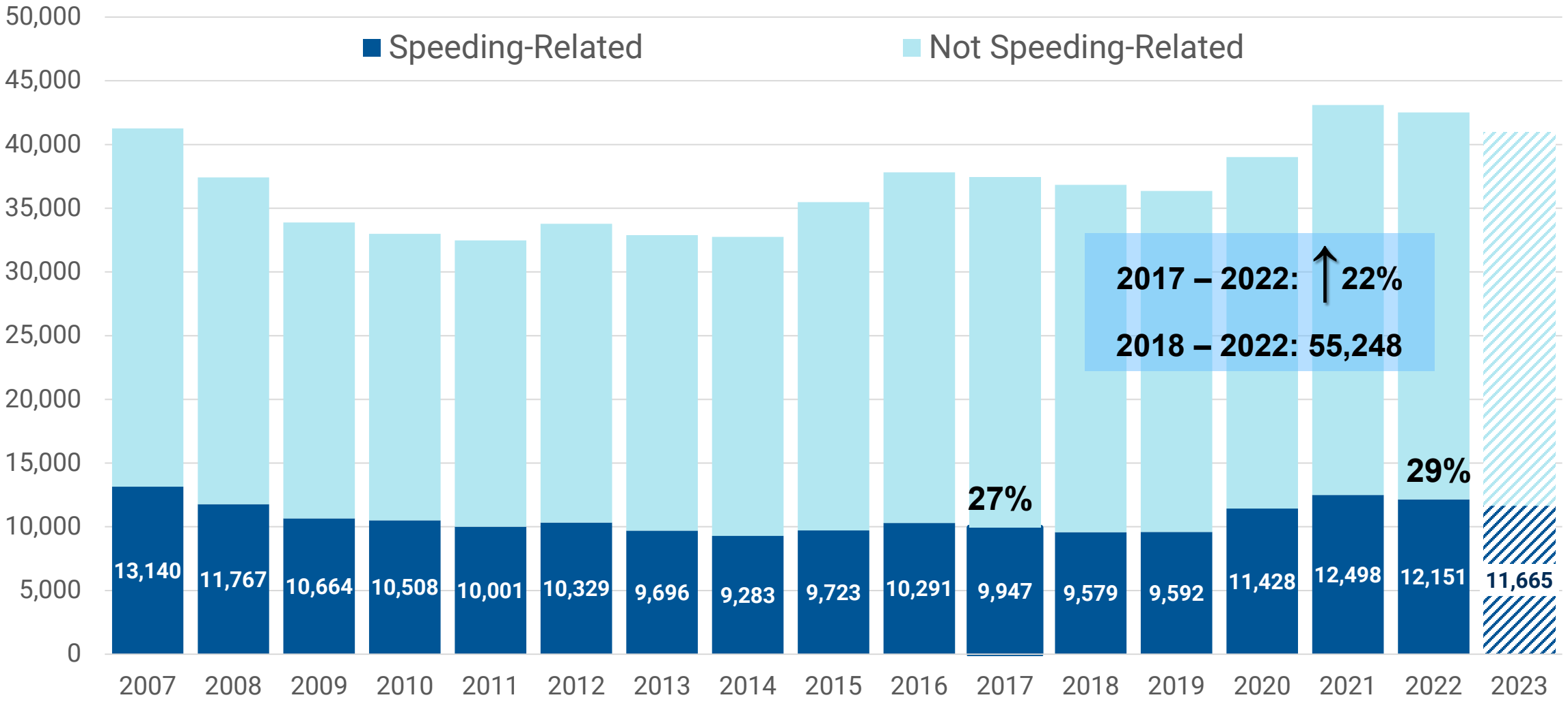
US Speeding-Related Fatalities, 2007-2023



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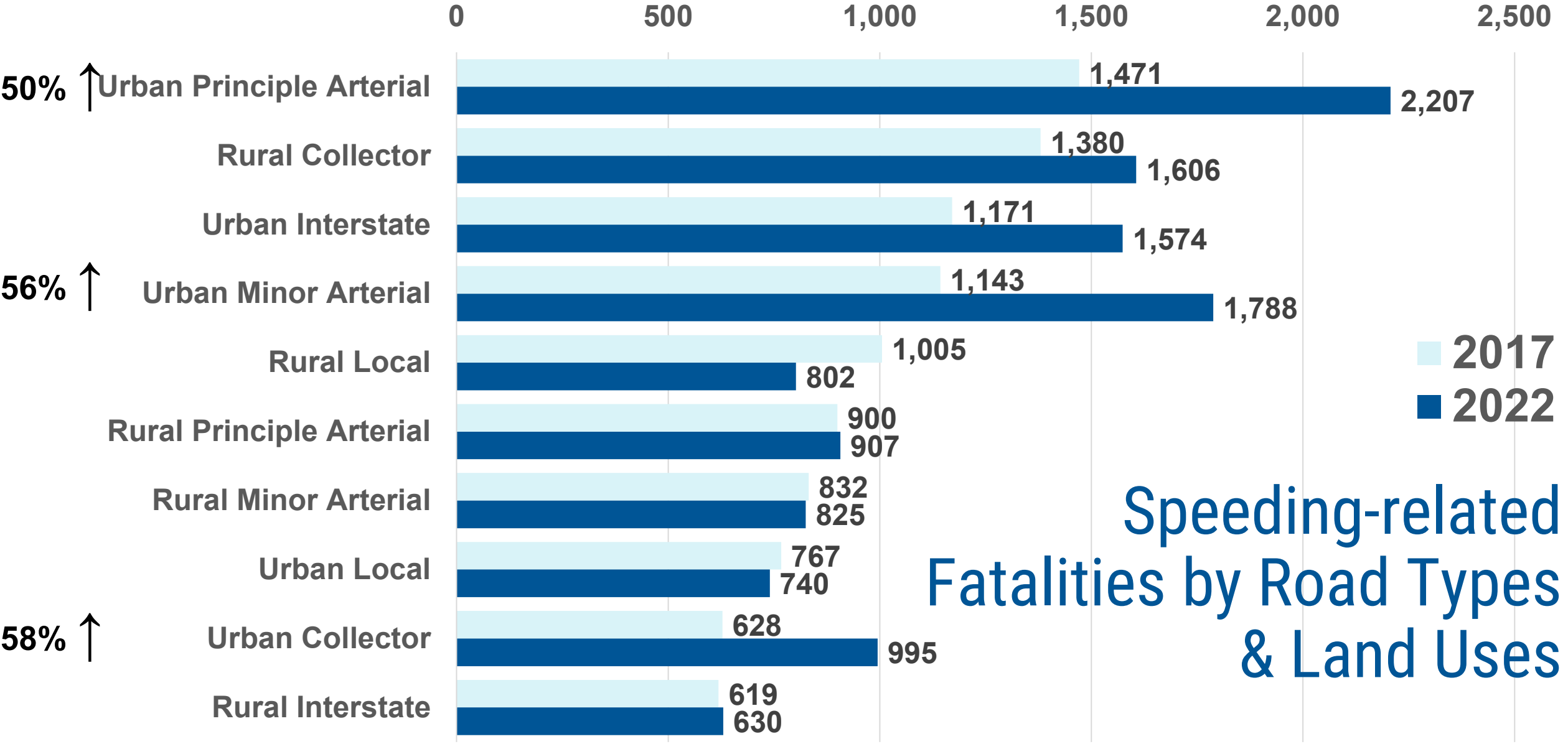
Fatalities by Person Type in Speeding-Related Crashes

	2017		2022		% Increase
	Count	%	Count	%	
Speeding Vehicle Occupant	6,213	62.5	7,284	59.9	17
Motorcyclist	1,812	18.2	2,378	19.6	31
Non-speeding Vehicle Occupant	1,393	14.0	1,766	14.5	27
Pedestrian	413	4.2	585	4.8	42
Bicyclist	69	0.7	97	0.8	41
Total	9,947	100	12,151	100	22


0
500
1,000
1,500
2,000
2,500
50%
Urban Principle Arterial
1,471
2,207
Rural Collector
1,380
1,606
Urban Interstate
1,171
1,574
56%
Urban Minor Arterial
1,143
1,788
Rural Local
1,005
802
Rural Principle Arterial
900
907
Rural Minor Arterial
832
825
Urban Local
767
740
58%
Urban Collector
628
995
Rural Interstate
619
630
2017
2022
Speeding-related Fatalities by Road Types & Land Uses

NTSB

Safety Issues, Recipients, and 19 Recommendations

Recipients/ Issues	Speed Limits	Data-driven Speed Enforcement	Automated Speed Enforcement	Intelligent Speed Adaptation	National Leadership
USDOT					H-17-18
NHTSA		H-17-19 H-17-20 H-17-21	H-17-22 H-17-23	H-17-24	H-17-25 H-17-26
FHWA	H-17-27 H-17-28		H-17-29 H-17-30		
GHSA		H-17-34			
IACP		H-17-35			
NSA		H-17-36			
STATES			H-17-31 (7) H-17-32 (28) H-17-33 (15)		

Excerpt of The 2009 MUTCD Section 2B.13

Section 2B.13 Speed Limit Sign (R2-1)

Standard:

01 **Speed zones (other than statutory speed limits) shall only be established on the basis of an engineering study that has been performed in accordance with traffic engineering practices. The engineering study shall include an analysis of the current speed distribution of free-flowing vehicles.**

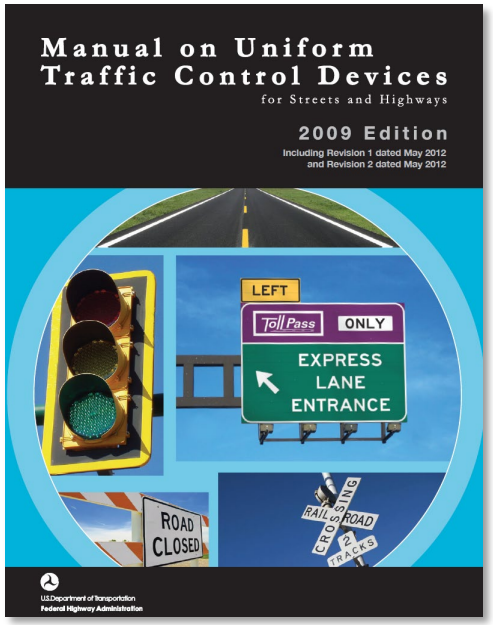
Guidance:

12 *When a speed limit within a speed zone is posted, it should be within 5 mph of the 85th-percentile speed of free-flowing traffic.*

Option:

16 Other factors that may be considered when establishing or reevaluating speed limits are the following:

A. Road characteristics, shoulder condition, grade, alignment, and sight distance;
B. The pace;
C. Roadside development and environment;
D. Parking practices and pedestrian activity; and
E. Reported crash experience for at least a 12-month period.



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Recommendations to FHWA on Setting Speed Limit

- H-17-27: Revise Section 2B.13 of the Manual on Uniform Traffic Control Devices so that the factors currently listed as **optional for all engineering studies are required**, require that an expert system such as **USLIMITS2** be used as a validation tool, and **remove the guidance** that speed limits in speed zones ***should be*** **within 5 mph of the 85th percentile speed**. [Open – Acceptable Response]
- H-17-28: Revise Section 2B.13 of the Manual on Uniform Traffic Control Devices to, at a minimum, **incorporate the safe system approach** for urban roads to strengthen protection for vulnerable road users. [Open – Acceptable Response]

Excerpt of The 2023 MUTCD Section 2B.13

Standard:

06 **Speed zones (other than statutory speed limits) shall only be established on the basis of an engineering study that has been performed in accordance with traffic engineering practices. The engineering study shall consider the roadway context.**

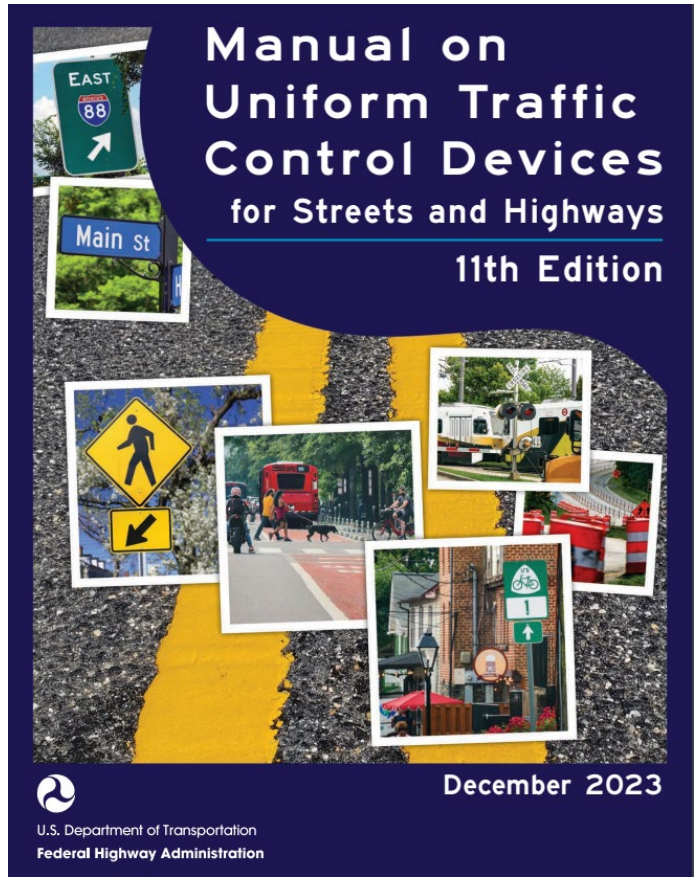
Guidance:

07 *Among the factors that should be considered when conducting an engineering study for establishing or reevaluating speed limits within speed zones are the following:*

A. *Roadway environment (such as roadside development, number and frequency of driveways and access points, and land use), functional classification, public transit volume and location or frequency of stops, parking practices, and pedestrian and bicycle facilities and activity;*
B. *Roadway characteristics (such as lane widths, shoulder condition, grade, alignment, median type, and sight distance);*
C. *Geographic context (such as an urban district, rural town center, non-urbanized rural area, or suburban area), and multi-modal trip generation;*
D. *Reported crash experience for at least a 12-month period;*
E. *Speed distribution of free-flowing vehicles including the pace, median (50th-percentile), and 85th-precentile speeds; and*
F. *A review of past speed studies to identify any trends in operating speeds.*

08 *When the 85th-percentile speed is appreciably greater than the posted speed limit, and the roadway context does not support setting a higher speed limit, the engineering study should consider whether changes to geometric features, enforcement, and/or other speed-reduction countermeasures might improve compliance with the posted speed limit. A similar approach should be used if the results of past speed studies indicate that the 85th-percentile speed has consistently increased.*

09 *On urban and suburban arterials, and on rural arterials that serve as main streets through developed areas of communities, the 85th-percentile speed should not be used to set speed limits without consideration of all factors described in Paragraph 7 of this Section.*



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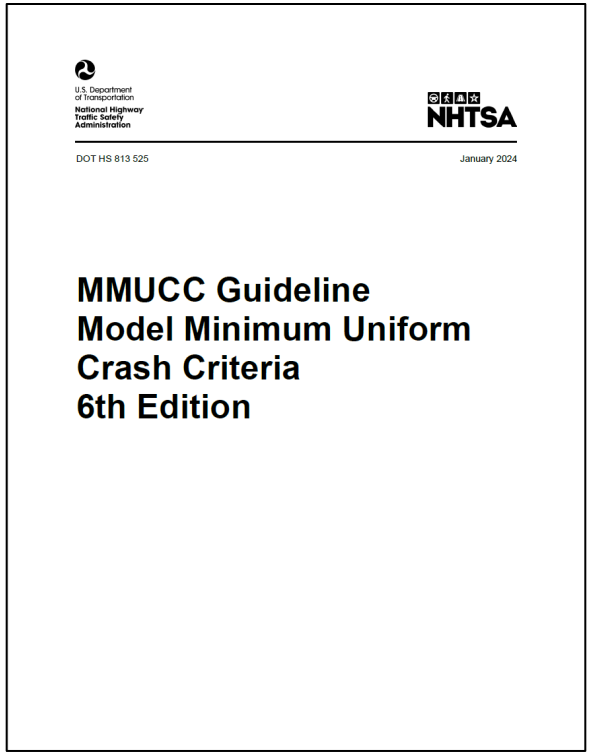
Recommendations to NHTSA, GHSA, IACP, and NSA on Speeding-Related Crash Data Reporting

- Limitations on Speeding-Related Crash Data Reporting:
  - Inconsistent or lack of categorization of "exceeded speed limit" and "too fast for conditions" (*e.g. 2 states <=20% and 10 states >80% "exceed speed limit"*) ;
  - Under-reporting or unknown speeding involvement (*e.g. >5,500 "not speeding" vehicles with estimated travel speed at least 10mph over posted speed limit*)
- **H-17-21 (to NHTSA):** Work with the Governors Highway Safety Association (H-17-34), the International Association of Chiefs of Police (H-17-35), and the National Sheriffs' Association (H-17-36) to **develop and implement a program to increase the adoption** of speeding-related Model Minimum Uniform Crash Criteria Guideline data elements and **improve consistency** in law enforcement reporting of speeding-related crashes. [Open – Acceptable Response]


U.S. Department of Transportation
National Highway Traffic Safety Administration

NHTSA

DOT HS 813 525 January 2024

MMUCC Guideline
Model Minimum Uniform Crash Criteria
6th Edition

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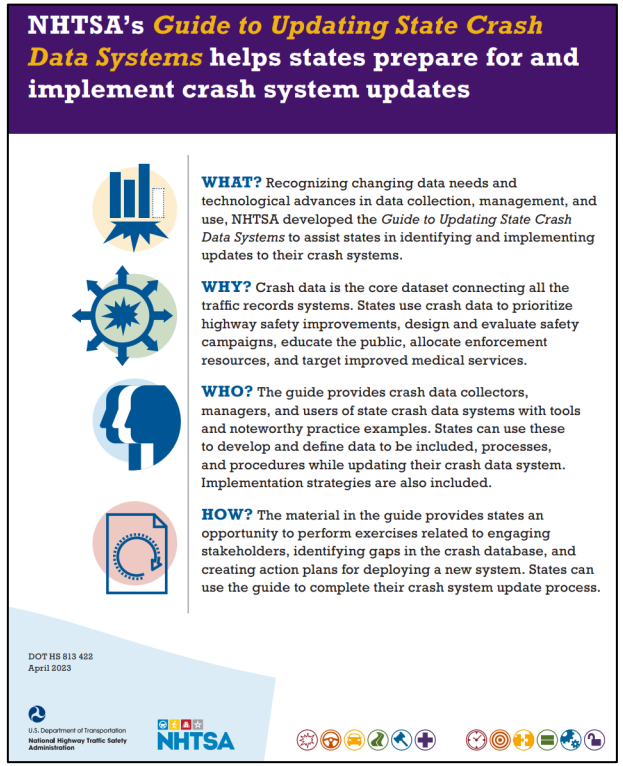
NHTSA's Efforts and Resources to Improve Crash Data Reporting



NHTSA's *Guide to Updating State Crash Data Systems* helps states prepare for and implement crash system updates

WHAT? Recognizing changing data needs and technological advances in data collection, management, and use, NHTSA developed the *Guide to Updating State Crash Data Systems* to assist states in identifying and implementing updates to their crash systems.

WHY? Crash data is the core dataset connecting all the traffic records systems. States use crash data to prioritize highway safety improvements, design and evaluate safety campaigns, educate the public, allocate enforcement resources, and target improved medical services.

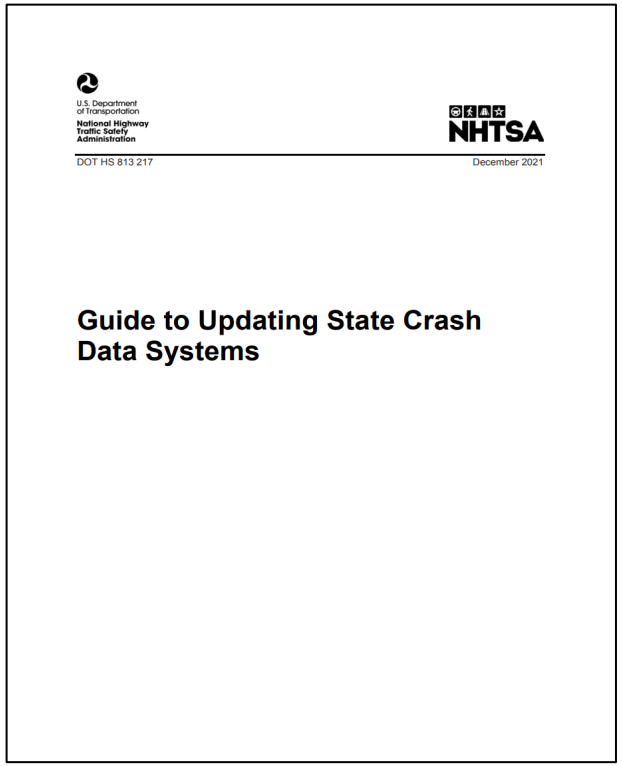
WHO? The guide provides crash data collectors, managers, and users of state crash data systems with tools and noteworthy practice examples. States can use these to develop and define data to be included, processes, and procedures while updating their crash data system. Implementation strategies are also included.

HOW? The material in the guide provides states an opportunity to perform exercises related to engaging stakeholders, identifying gaps in the crash database, and creating action plans for deploying a new system. States can use the guide to complete their crash system update process.

DOT HS 813 422
April 2023

U.S. Department of Transportation
National Highway Traffic Safety Administration

NHTSA



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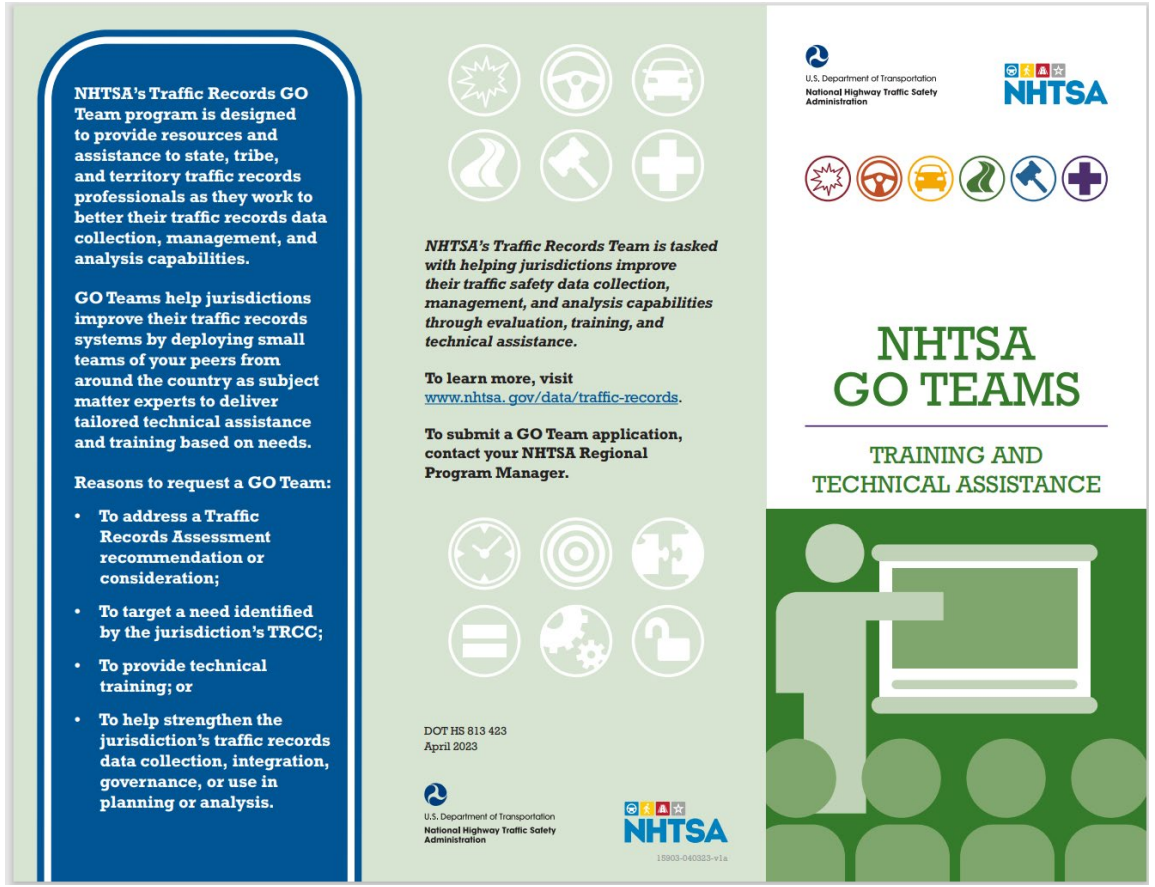
DOT HS 813 217

December 2021

Guide to Updating State Crash Data Systems



NHTSA's Traffic Records GO Team program is designed to provide resources and assistance to state, tribe, and territory traffic records professionals as they work to better their traffic records data collection, management, and analysis capabilities.

GO Teams help jurisdictions improve their traffic records systems by deploying small teams of your peers from around the country as subject matter experts to deliver tailored technical assistance and training based on needs.

Reasons to request a GO Team:

- To address a Traffic Records Assessment recommendation or consideration;
- To target a need identified by the jurisdiction's TRCC;
- To provide technical training; or
- To help strengthen the jurisdiction's traffic records data collection, integration, governance, or use in planning or analysis.

NHTSA's Traffic Records Team is tasked with helping jurisdictions improve their traffic safety data collection, management, and analysis capabilities through evaluation, training, and technical assistance.

To learn more, visit www.nhtsa.gov/data/traffic-records.

To submit a GO Team application, contact your NHTSA Regional Program Manager.

DOT HS 813 423
April 2023

U.S. Department of Transportation
National Highway Traffic Safety Administration

NHTSA

15903-040323-v1a

U.S. Department of Transportation
National Highway Traffic Safety Administration

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NHTSA GO TEAMS

TRAINING AND TECHNICAL ASSISTANCE

State Legislations Enabling/Prohibiting ASE (2017)

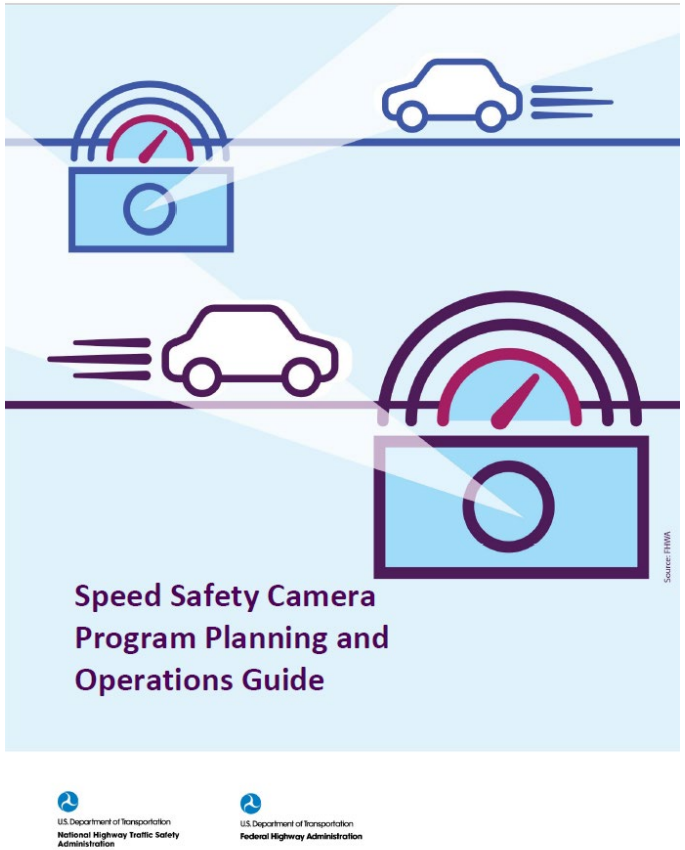
Enabling Legislation Condition April 2017	Number of States April 2017	Number of States with Active ASE Programs	NTSB Safety Recommendation
States Authorizing ASE with Restrictions	15	10	H-17-33 Amend current laws to remove operational and location restrictions on the use of automated speed enforcement, except where such restrictions are necessary to align with best practices.
States without ASE Laws	28	4	H-17-32 Authorize state and local agencies to use automated speed enforcement.
States Prohibiting ASE	7	0	H-17-31 Amend current laws to authorize state and local agencies to use automated speed enforcement.

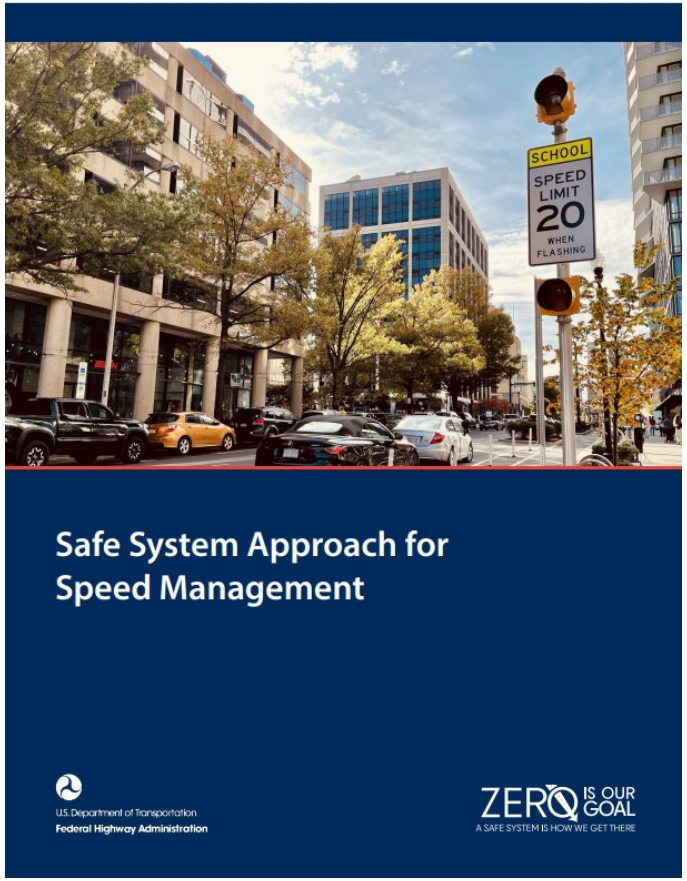
State Legislations Enabling/Prohibiting ASE (2024)

Enabling Legislation Condition April 2017	Number of States with Active ASE Programs (April 2017)	Number of States with Active ASE Programs (August 2024, IIHS)	Current Classifications
States Authorizing ASE with Restrictions	10	12	H-17-33 Open-Unacceptable (9) Open-Acceptable (5) Open-Acceptable Alternate (1)
States without ASE Laws	4	10	H-17-32 Open-Unacceptable (16) Open-Acceptable (12)
States Prohibiting ASE	0	0	H-17-31 Open-Unacceptable (5) Open-Acceptable (2)

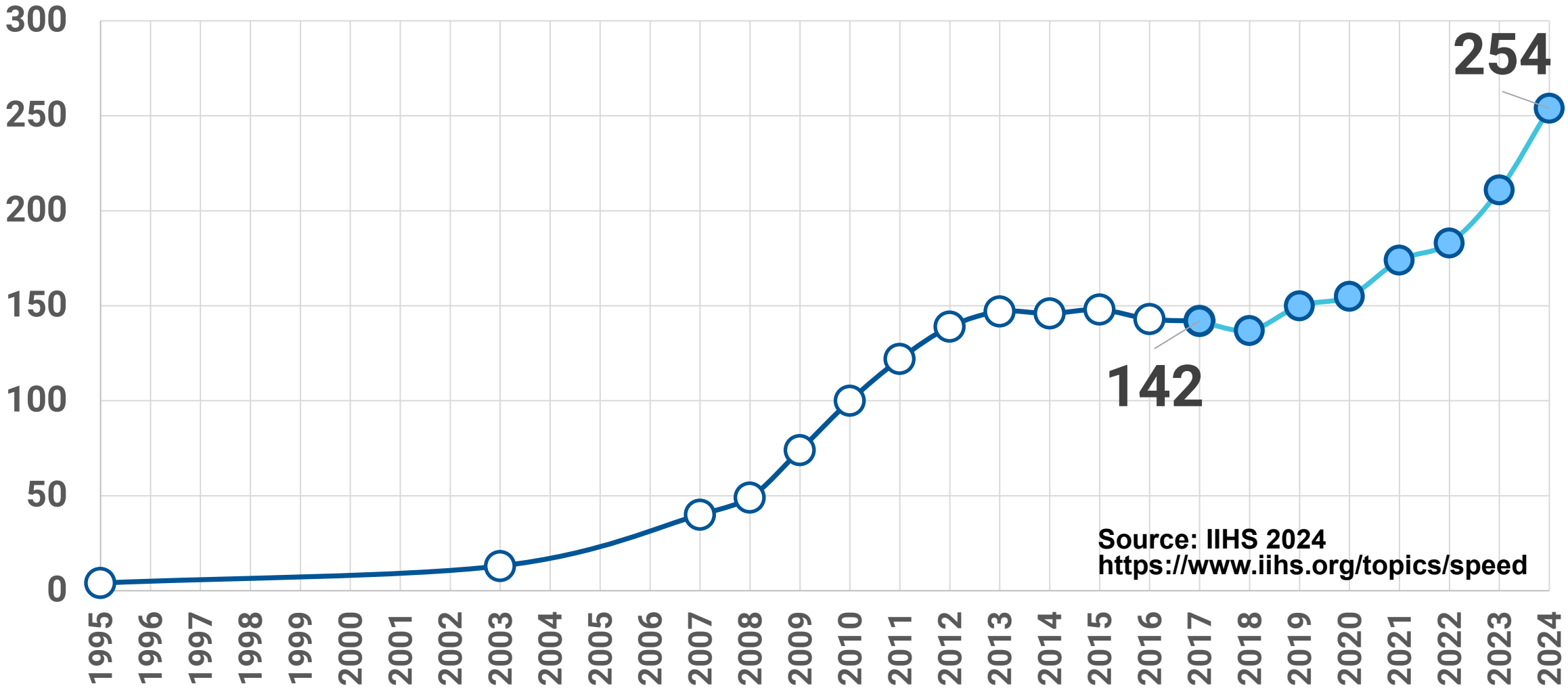
Recommendations to FHWA and NHTSA on Automated Speed Enforcement

- H-17-29 (FHWA): Work with the National Highway Traffic Safety Administration (H-17-22) to update the Speed Enforcement Camera Systems Operational Guidelines to reflect the latest automated speed enforcement (ASE) technologies and operating practices, and promote the updated guidelines among ASE program administrators. [Closed – Acceptable Response]





Number of U.S. Communities with Speed Safety Cameras



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Speed Management and the Safe System Approach

Solutions for Speed Management with the NTSB

The League of American Bicyclists

Wes Kumfer, Ph.D., RSP1

THE UNIVERSITY OF NORTH CAROLINA
HIGHWAY SAFETY RESEARCH CENTER

www.hsrc.unc.edu

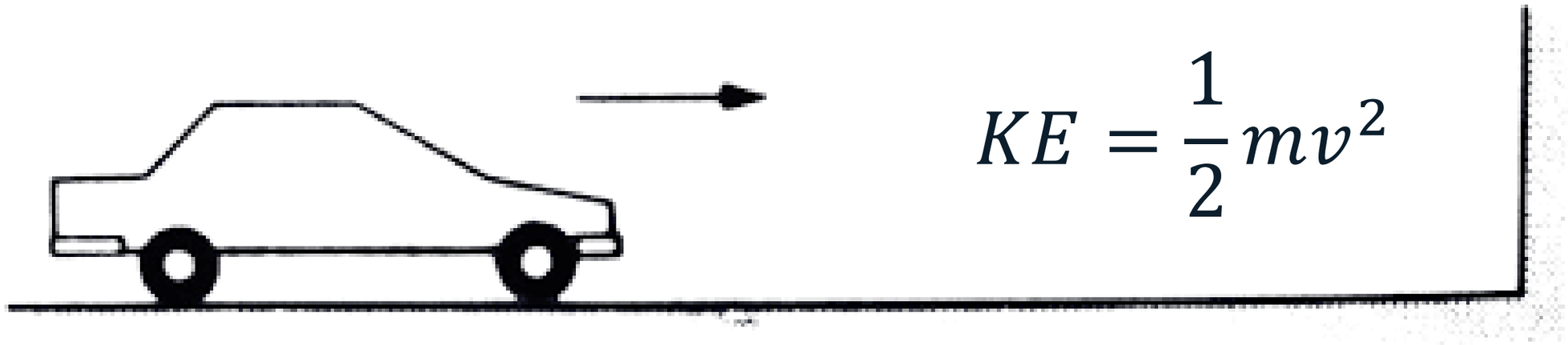
August 22, 2024

Introduction

- Differentiate between traditional safety approach and the Safe System Approach.
- Explain the role of speed management in the Safe System Approach.
- Select speed management techniques that align with Safe System principles.
- Review case studies of how agencies have reduced speeds.

Injury Causation

- Crashes are caused by the interplay of environmental and organization failures with human error.
- Injuries are caused by kinetic energy exceeding injury tolerance.



$$KE = \frac{1}{2}mv^2$$

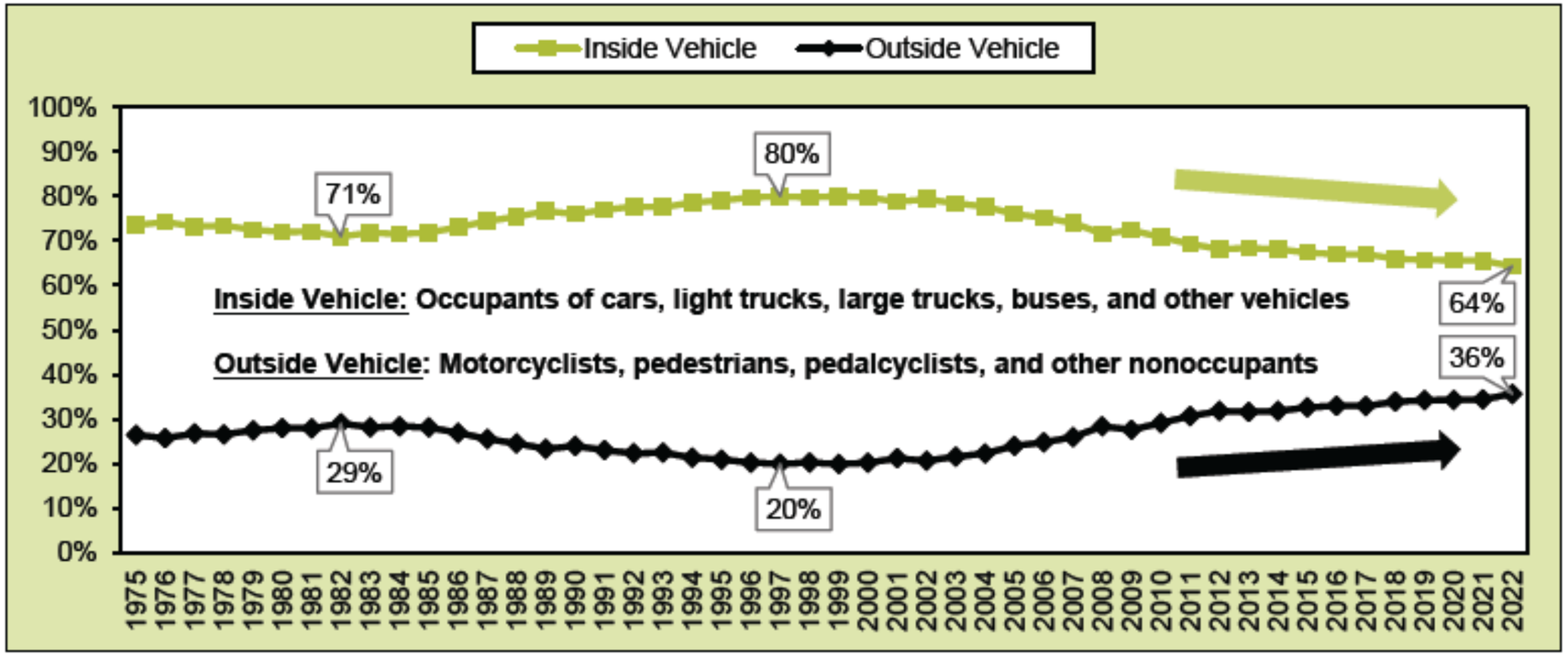
- Injury tolerance is the physiological capacity of a roadway user to withstand kinetic energy.

Image via Doubtnut

Why Kinetic Energy Matters

- Injury tolerance is not evenly distributed by mode.

Figure 3. Proportion of Traffic Fatalities Inside/Outside Vehicles, 1975-2022



Source: FARS 1975-2021 Final File, 2022 ARF

National Center for Statistics and Analysis, 2024

Traditional Safety Management

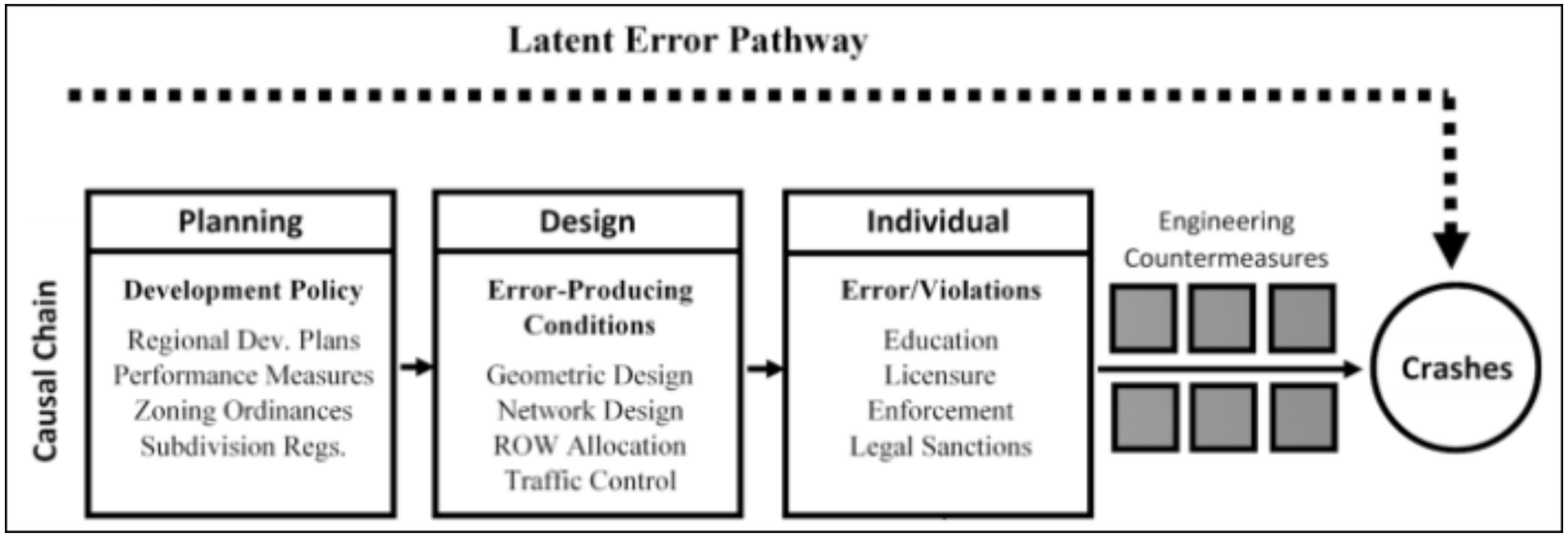
- We tend to make a lot of assumptions about what works in speed management.
- Kelly and Barker (2016) identified six common errors or mistaken beliefs that can result in ineffective behavior change programs.
  - It is just common sense.
    - “The speed limit is the law.”
  - It is about getting the message across.
    - “We did our due diligence by passing out flyers.”
  - Knowledge and information drive behavior.
    - “We did a media campaign about how dangerous speeding is.”

Traditional Safety Management

- Kelly and Barker (2016) identified six common errors or mistaken beliefs that can result in ineffective behavior change programs.
  - People act rationally.
    - “This is a curved road, so drivers will slow down.”
  - People act irrationally.
    - “It doesn’t matter if we lower speed limits because people will just speed anyway.”
  - It is possible to predict accurately.
    - “If we install this countermeasure, we can expect this crash reduction.”

Kinetic Energy and Risk

- When trying to change speed(ing) behavior, we need to think about the environment as well as the information we are providing to road users.

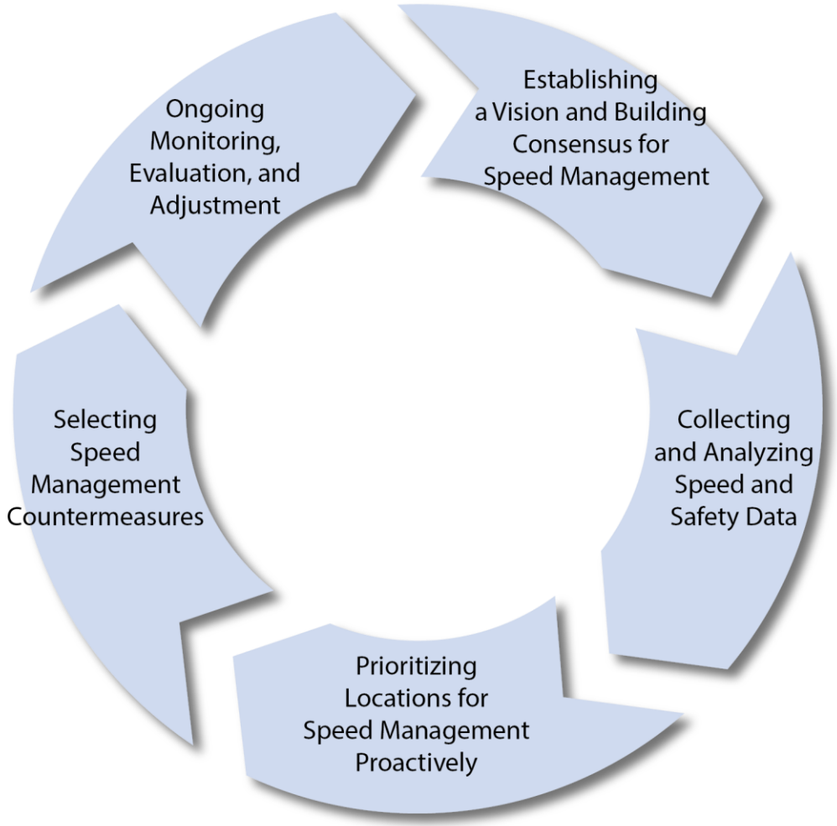


Dumbaugh et al., 2019

Safe speeds across the network ← Safe System moves us toward speeds aligned with injury minimization ← Speed management countermeasures

Speed in a Safe System

- The Safe System Approach for Speed Management is a five-step framework that adapted lessons from New Zealand's speed management guide and traffic safety management techniques in the U.S.



Kumfer et al., 2023

Step One: Setting a Vision

- We can set a vision for what we want speeds to be in the planning and policy stages.

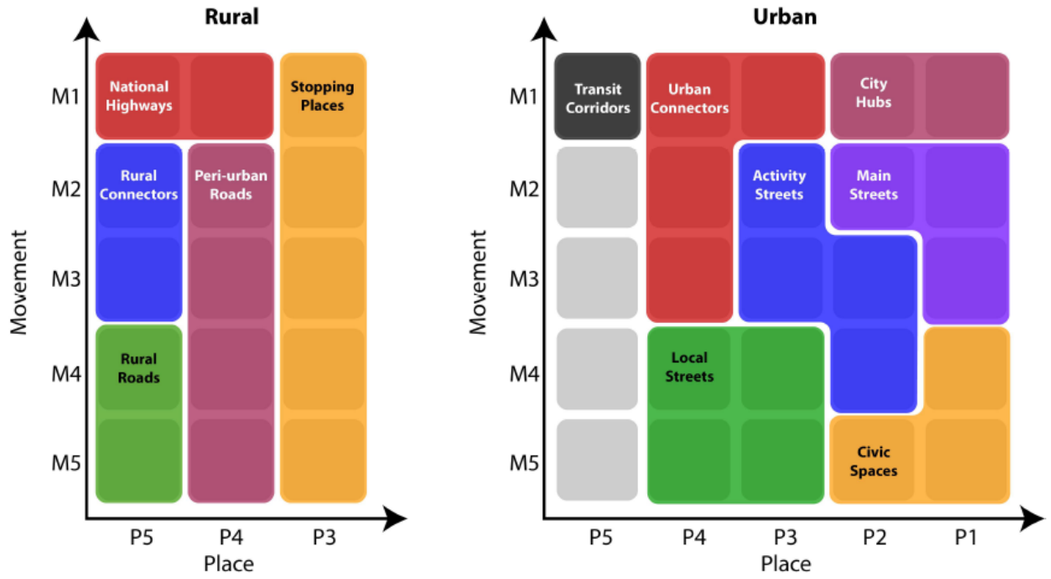


Figure 19: One Network Framework Classification Matrix
Source: Waka Kotahi New Zealand Transport Agency (39)

Chiarenza et al. 2023

Table 7. Components of a Vision Zero plan that addresses speed.

Safe Systems Principle: Manage Kinetic Energy Transfer Among Road Users	
Goal	Traffic speeds in the city are consistent with public health goals.
Objectives	By the end of 2022, city staff will have developed street classification standards for designing streets with operating speeds of no more than 20 mph on local roads, 30 mph on collector roads, 35 mph on arterial roads, and 45 mph on highways. By the end of 2026, city staff will have implemented road diets on 50 percent of roadways where such treatments are appropriate (e.g., roadway segments with more than two vehicle travel lanes and traffic volumes < 20,000 annual average daily traffic).
Agency Actions	Starting in 2021, city staff will develop a roadway classification scheme designed to provide all road users with safe mobility and access to key destinations. Starting in 2021, city staff will screen the roadway network for locations suitable for road dieting.
Performance Measures	Online publication of an updated street classification standard indicating design speeds by roadway type and a public forum for public input on design speeds. Percentage of roadways that have undergone road diet lane reconfigurations.
Lead Agency	Engineering department.
Supporting Agencies and Entities	Planning department, public health department, business owners, and local stakeholders.

Source: LaJeunesse, S., Naumann, R. B., Sandt, L., Spade, C., and Evenson, K. R. (2020). Guide to Developing a Vision Zero Plan. Chapel Hill, NC: Collaborative Sciences Center for Road Safety.

Case Study - Florida

Table 6. FDOT Design Manual target speeds and speed management techniques.

Area Type	Context Classification	Target Speed (mph)	Strategies
Rural	C1-Natural (natural or wilderness lands)	55–70	N/A: Speed Management Strategies are not used on high-speed roadways
Rural	C2-Rural sparsely settled)	55–70	N/A: Speed Management Strategies are not used on high-speed roadways
Rural	C2T-Rural Town (small concentrations of developed areas surround by natural areas)	40–45	Roundabout, Lane Narrowing, Horizontal Deflection, Speed Feedback Signs, Rectangular Rapid Flashing Beacons (RRFB) and Pedestrian Hybrid Beacons (PHB)
		35	Techniques for 40–45 mph, plus On- street Parking, Street Trees, Short Blocks, Islands at Crossings, Road Diet, Bulb-outs,Terminated Vista
		30	Techniques for 35–45 mph, plus Chicanes, Islands in curved sections
		≤ 25	Techniques for 30–45 mph, plus Vertical Deflection
Suburban	C3R-Suburban (mostly residential within large blocks), C3C-Suburban Commercial (mostly non-residential with large building footprints)	50–55	Project-specific
		40–45	Roundabout, Lane Narrowing, Horizontal Deflection, Speed Feedback Signs, RRFB and PHB
		35	Roundabout, Lane Narrowing, Horizontal Deflection, Speed Feedback Signs, Islands in crossings, Road Diet, RRFB and PHB, Terminated Vista
Urban	C4-Urban general (mixed uses within small blocks)	40–45	Roundabout, Lane Narrowing, Horizontal Deflection, Speed Feedback Signs, RRFB and PHB
		35	Techniques for 40–45 mph plus On-Street Parking, Street Trees, Short Blocks, Islands at Crossings, Bulb-outs, Terminated Vista, Road Diet
		30	Techniques for 35–45 mph plus Chicanes, Islands in Curve Sections

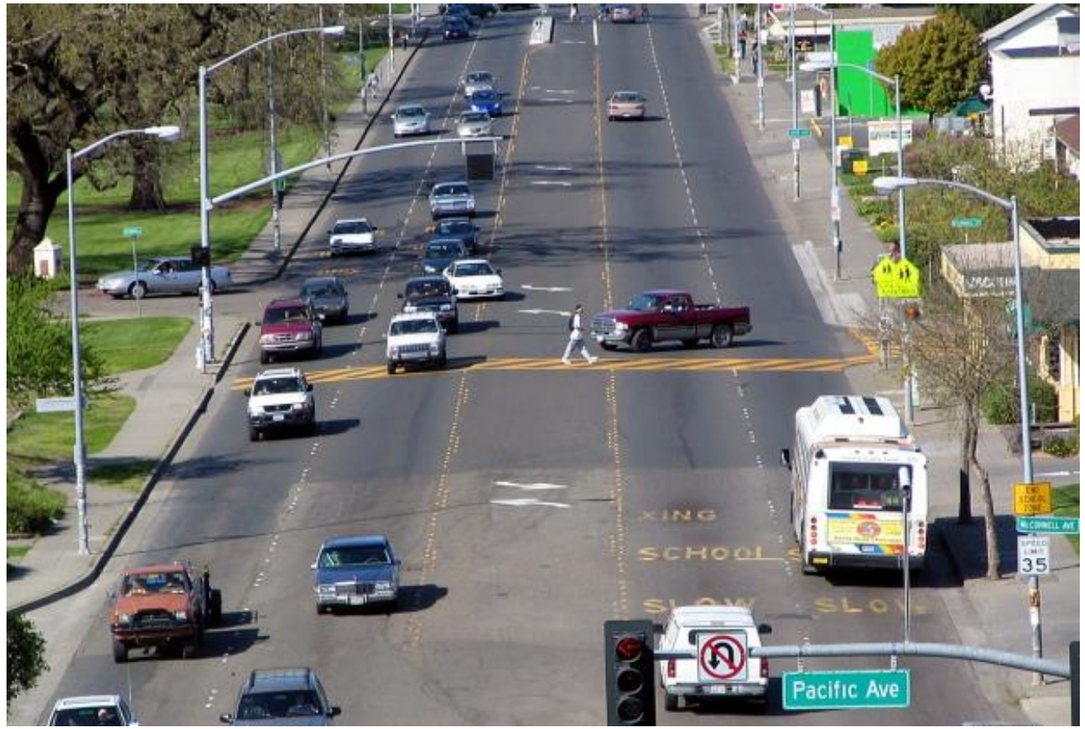
Set a vision for lower speeds in your policies.

Area Type	Context Classification	Target Speed (mph)	Strategies
Urban	C5-Urban Center (missed uses within small blocks, typically concentrated around a few blocks)	35	Roundabout, On-street Parking, Street Trees, Short Blocks, Speed Feedback Signs, Islands in Crossings, Road Diet, Bulb-outs, RRFB and HAWK, Terminated Vista
		30	Techniques for 35 mph plus Chicanes, Island in Curve Sections
		25	Techniques for 30–35 mph plus Vertical Deflection
Urban	C6-Urban Core (areas with highest density)	30	Roundabout, On-Street Parking, Horizontal Deflection, Street Trees, Islands in Curve Sections, Road Diet, Bulb-outs, Terminated Vista
		25	Techniques for 30 mph plus vertical deflection

Source: FDOT. (2022). FDOT Design Manual: Development and Processes. Tallahassee, FL: Florida Department of Transportation.

Step Two: Collecting and Analyzing Speed Data

- Use speed data to:
  - Dispel myths and negative perceptions
  - Gain public buy-in/Public education campaigns
  - Prove concrete benefits of speed management
  - Identify problems across the network.
- Think about what the environment is telling the road user.



Pedbikeimages.org/Dan Burden

Case Study – Seattle, WA

- Street design (2015):
  - Converted roads from four-lane to 3-lane.
  - Used USLIMITS to set 25 mph speed limits. In 2015, the city redesigned several streets by converting them from four-lane to three-lane roads. Used USLIMITS2 with data to set speed limit to 25 mph.
- Signal timing (2016):
  - Retimed signals to work at 25mph.
- City Municipal Code (2016):
  - Revised code to lower default speed limits on arterials and non-arterials to 25 and 20 mph.
- Urban Villages (2019):
  - Set 25 mph speed limits on urban village streets to address pedestrian crashes.
  - Set speed limit sign-spacing standard.
- Speed limit policy (2021):
  - New speed limit policy.
  - Placed signs on 90% of arterial network.

Step Three: Proactively Prioritizing Locations for Speed Management

- Safety analysis should be proactive.
  - Identify where operating speeds are exceeding target speeds.
  - Use a systemic approach to screen for speeding related crashes (as opposed to reactive, after the fact collision analysis).
  - Prioritization can be based on equity, desired activity/placemaking, modal hierarchy, etc.

Thomas et al., 2018

Case Study – Portland, OR

- Portland multidisciplinary approach for speed reduction citywide case study.
  - Residential speed limit reductions
  - Target speeds.
  - Street redesigns (5 to 3 lanes plus ped and bike facilities)
  - Intersection left-turn calming
  - Speed safety cameras
  - Community engagement

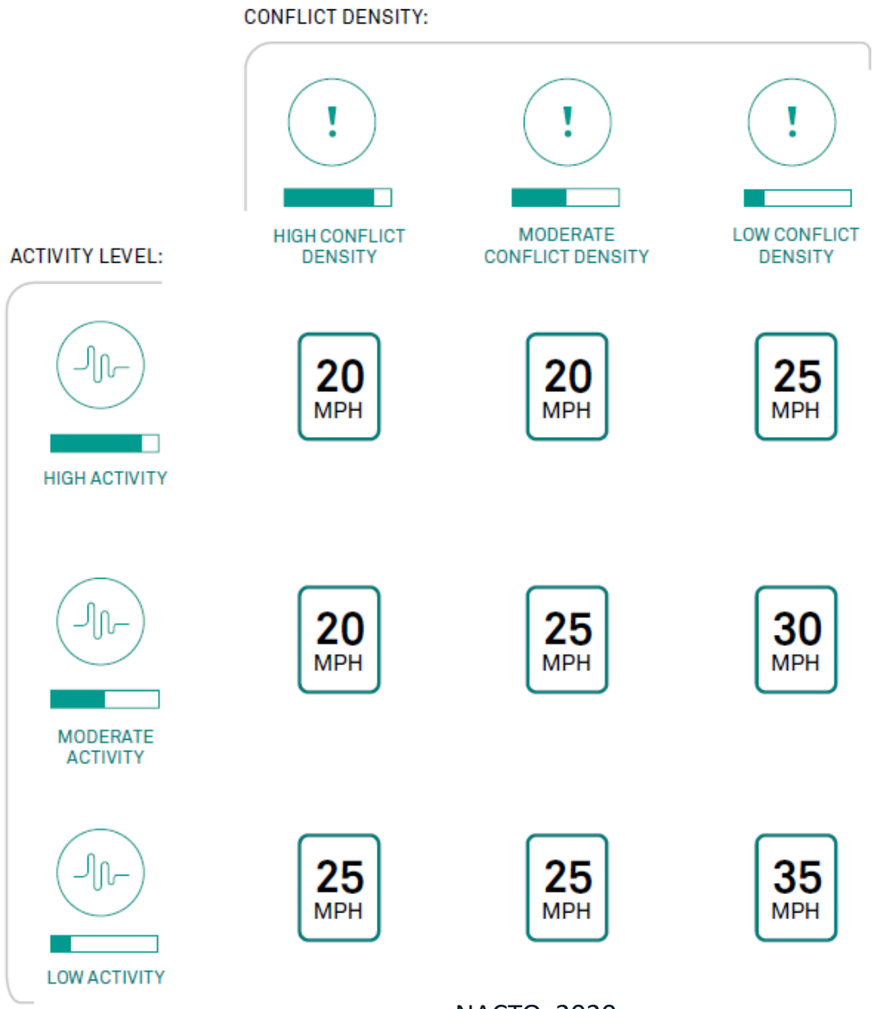
Street and limits:	Street								
Advisory		Statutory							
Speed	10 mph	≤15	≤20	≤25	≤30	≤35	≤40	≤45	≤50
PED	Shared roadway			5′ sidewalk 100% one side	Sidewalk both sides; curb or swale; 8′ separation	>8′ separation both sides NCHRP 562 crossings: 20/Hr.	>12′ separation both sides	Impermeable separation barrier	
BIKE	Shared roadway			≤ 5′ bike lane	6′ – 7′ bike lane	Minimum 2′ separation from autos	Permeable barrier	Impermeable separation barrier	
AUTO	Gravel roadway	≤ 9′ travel lanes	10′ travel lanes, greenway	10′ travel lanes		≤ 11′ travel lanes; Angle crash mitigations	Permeable center barrier; Roadside object setback or shielding		Impermeable center barrier

PBOT Decision Matrix

Step Four: Selecting Speed Management Countermeasures

- Lower speed limits.
- Work with the public to build acceptance.
- Change the roadway so that the environment communicates the appropriate speed.

- Numerous Speed Management Resources
  - USLIMITS2, NACTO City Limits, NCHRP Report 966, FHWA Road Diet Guide, FHWA Self-Enforcing Roadways Report, FHWA Speed Safety Cameras, etc.
- The newest edition of Countermeasures That Work is specifically oriented toward countermeasures that change behavior.



NACTO, 2020

Selecting Speed Management Countermeasures

- Manage kinetic energy through roadway design and use countermeasures to change the environment.

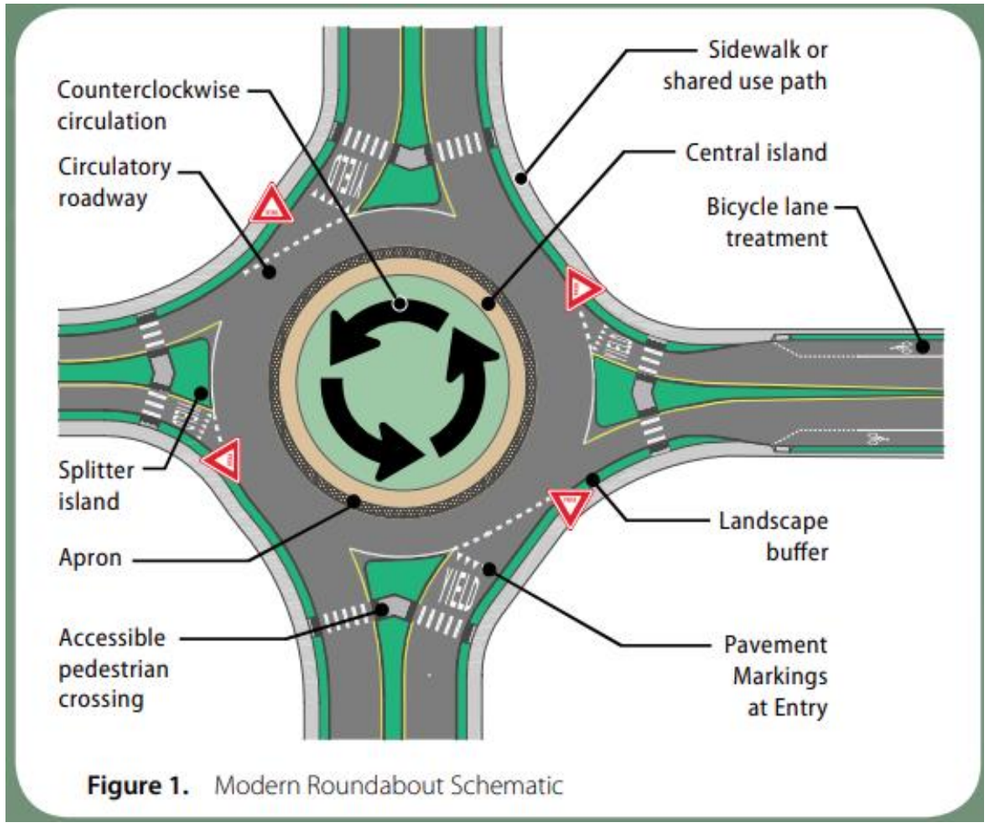
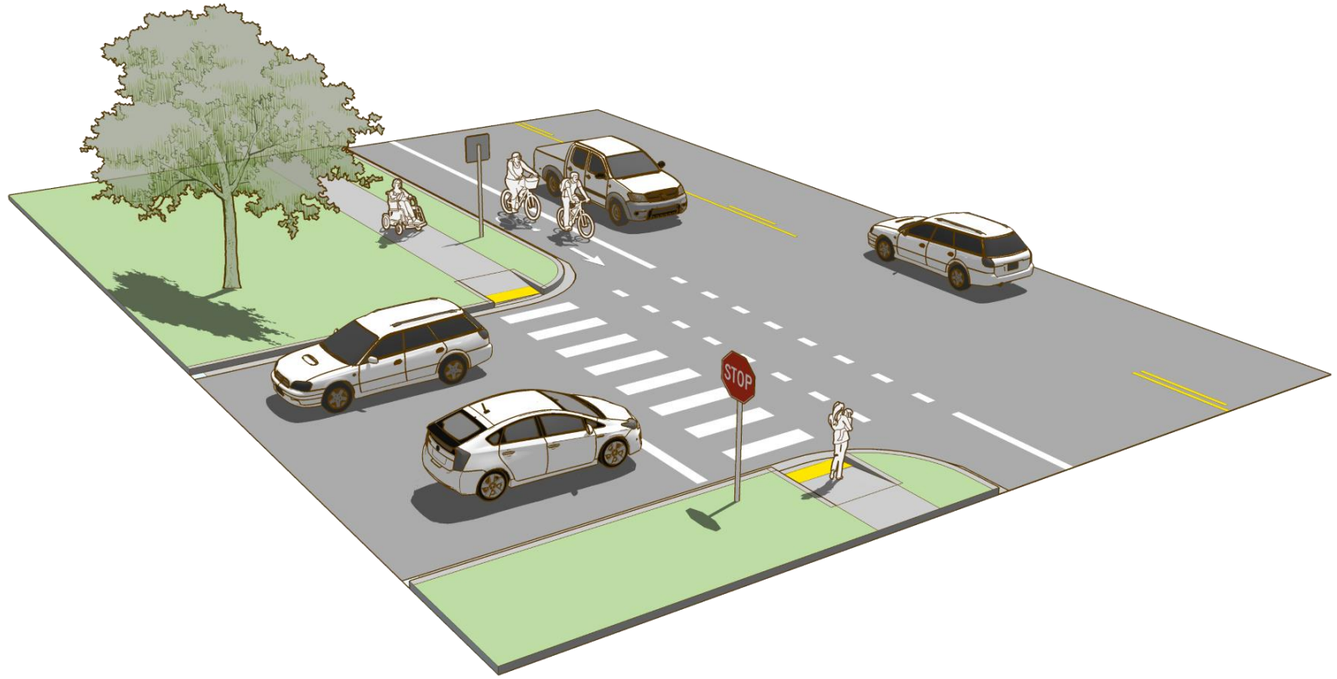


Figure 1. Modern Roundabout Schematic

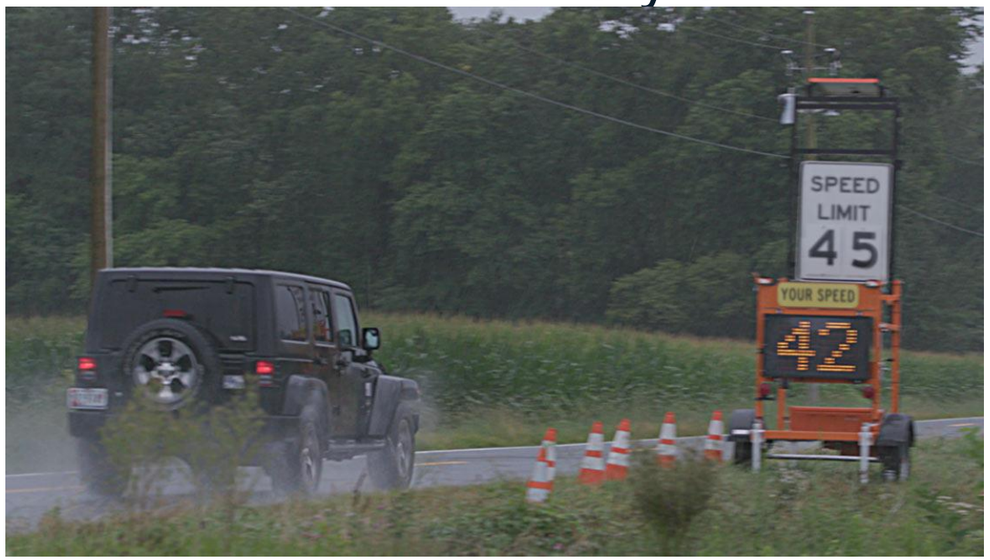
FHWA – Roundabouts and Rural Highways



Small Town and Rural Design Guide, 2020

Case Study – Bishopville, MD

- When you've identified corridors that have speed problems, consider comprehensive approaches to change the environment and provide information.
- IIHS evaluated a comprehensive program in Bishopville, Maryland and found it was very effective.



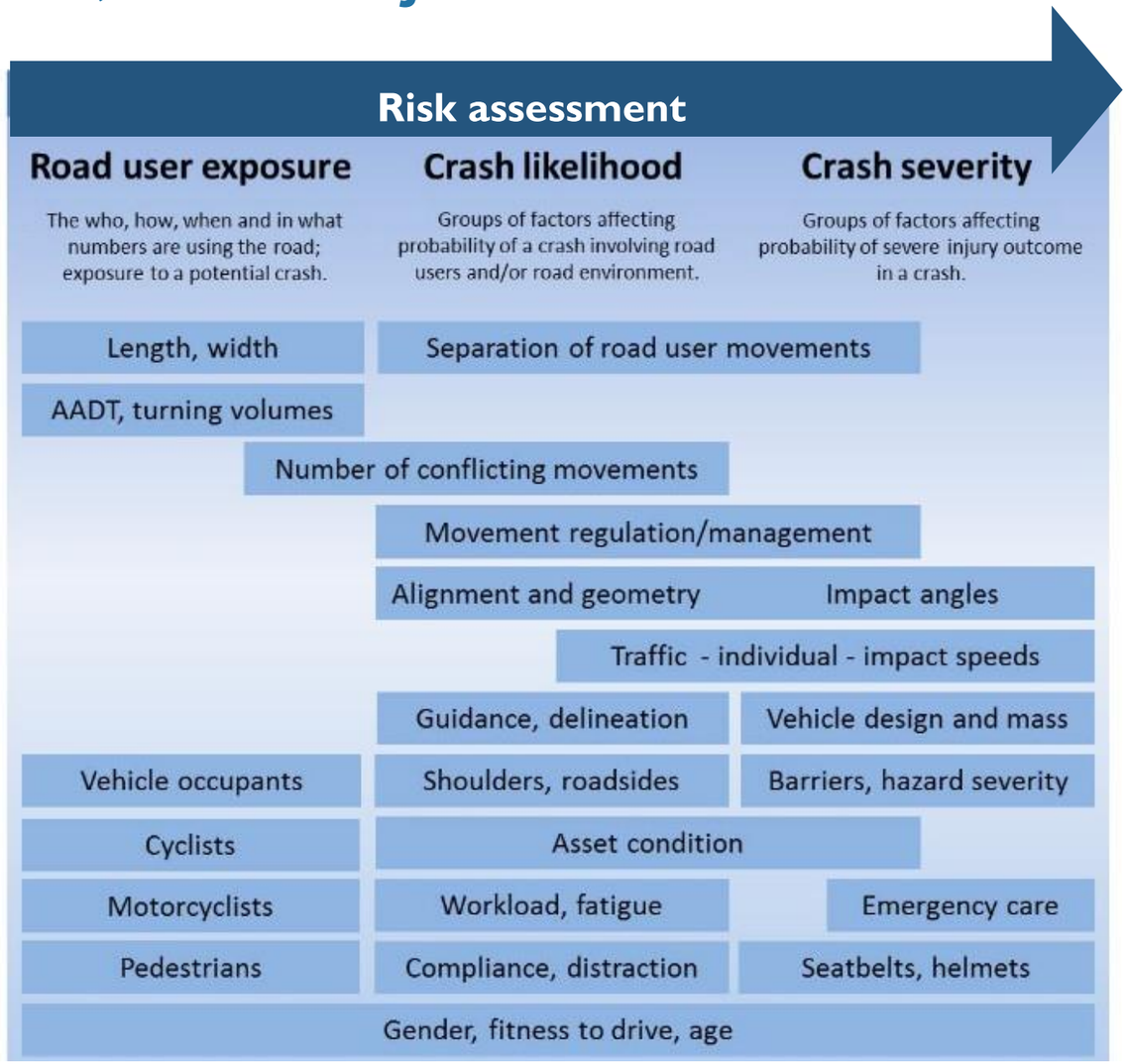
IIHS, 2022 - https://www.iihs.org/news/detail/multipronged-anti-speeding-effort-succeeds-in-slowing-traffic

Ongoing Monitoring, Evaluation, and Adjustment

- Cyclical nature of Safe System framework requires continued monitoring and improvement.
- Monitor outcomes of implemented projects; safety performance can change over time; speeding patterns may also migrate.
- Measure progress against long range safety plans (SHSPs).
- Safe System Approach plans should be iterative and may be incremental in nature (especially for high-cost infrastructure plans).
- Speed enforcement is often vital to establishing driver compliance with target speeds.

Ongoing Monitoring, Evaluation, and Adjustment

- Keep thinking about what speed the environment is telling your drivers to choose.
- Move toward bringing the whole network to safer speeds.



Jurewicz et al., 2015

Summary

- Traditional transportation safety is based on a variety of assumptions about how humans behave.
- To change speed(ing) behavior, we must change the environment and provide information.
- Speed data can tell us what the environment is telling drivers.
- Speed management techniques should move us closer toward a network-level safer speed.

Acknowledgments

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Thanks!

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August 22, 2024