

NTSB

National
Transportation
Safety Board

Improving traffic safety for vulnerable road users: Safe System Approach

Honorable Tom Chapman

2022 Texas Traffic Safety Conference

College Station, TX, July 27, 2022

AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE



Our Mission

The NTSB is an independent Federal agency charged by Congress with **investigating** every civil aviation accident in the United States and significant accidents in the other modes of transportation – highway, marine, railroad and pipeline – and **issuing safety recommendations** aimed at preventing future accidents.

NTSB



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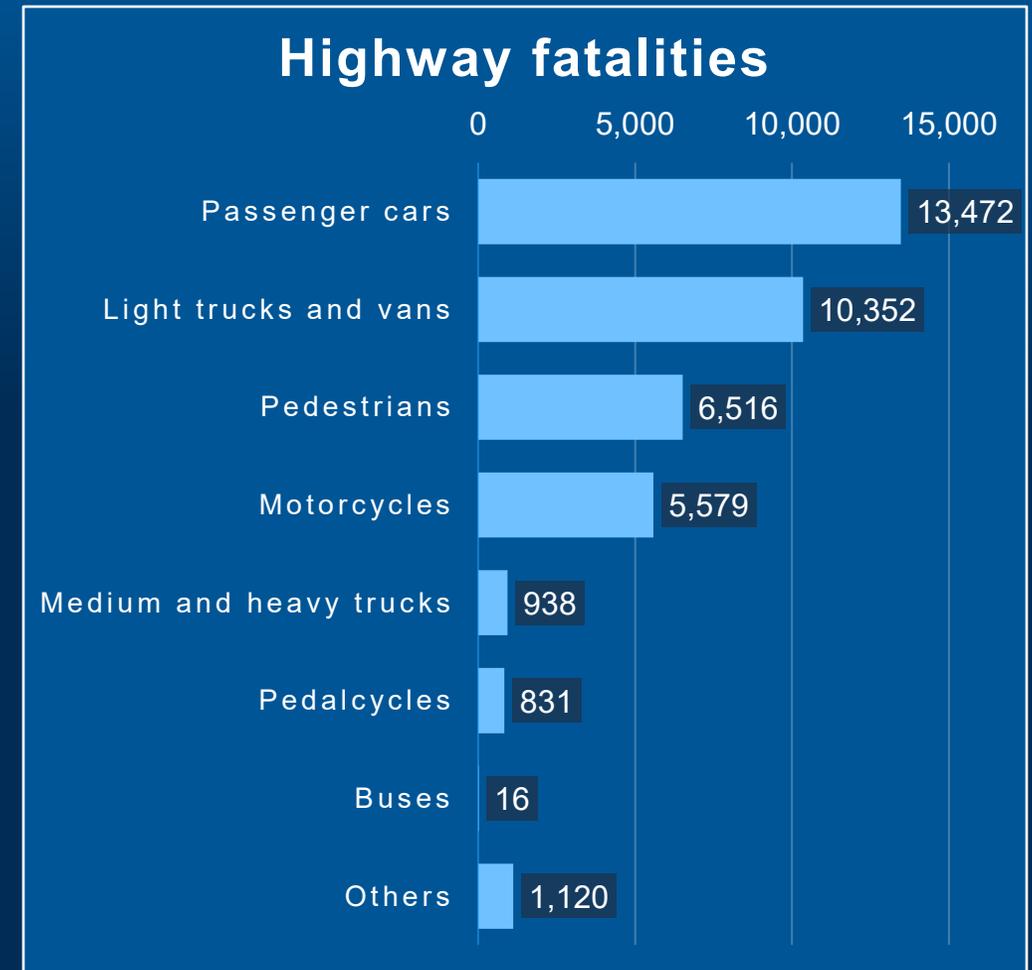
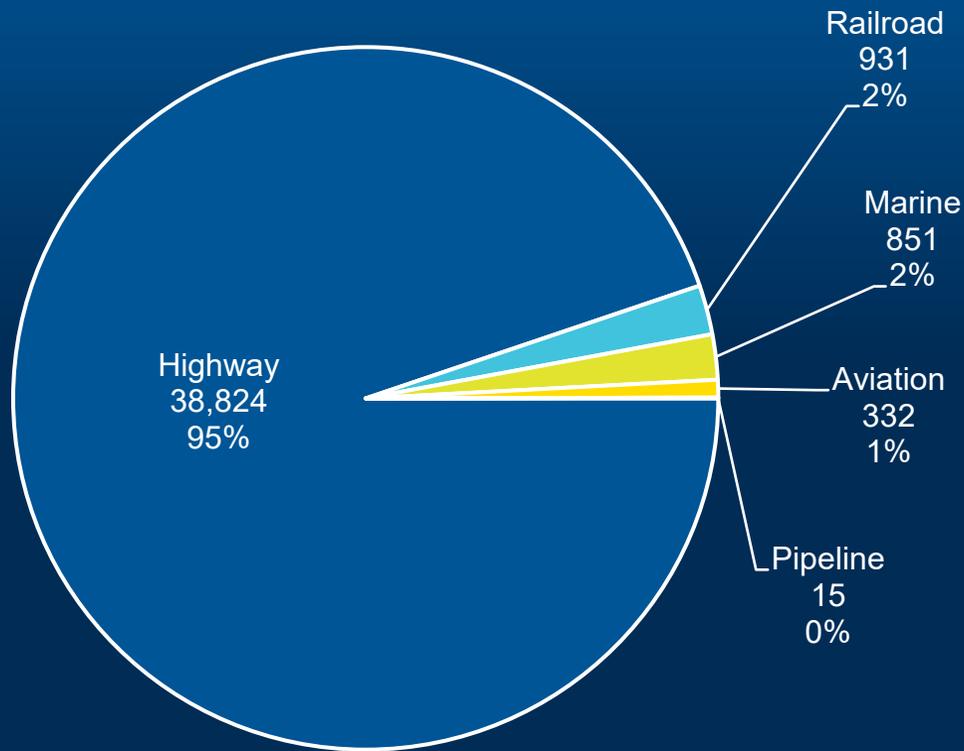


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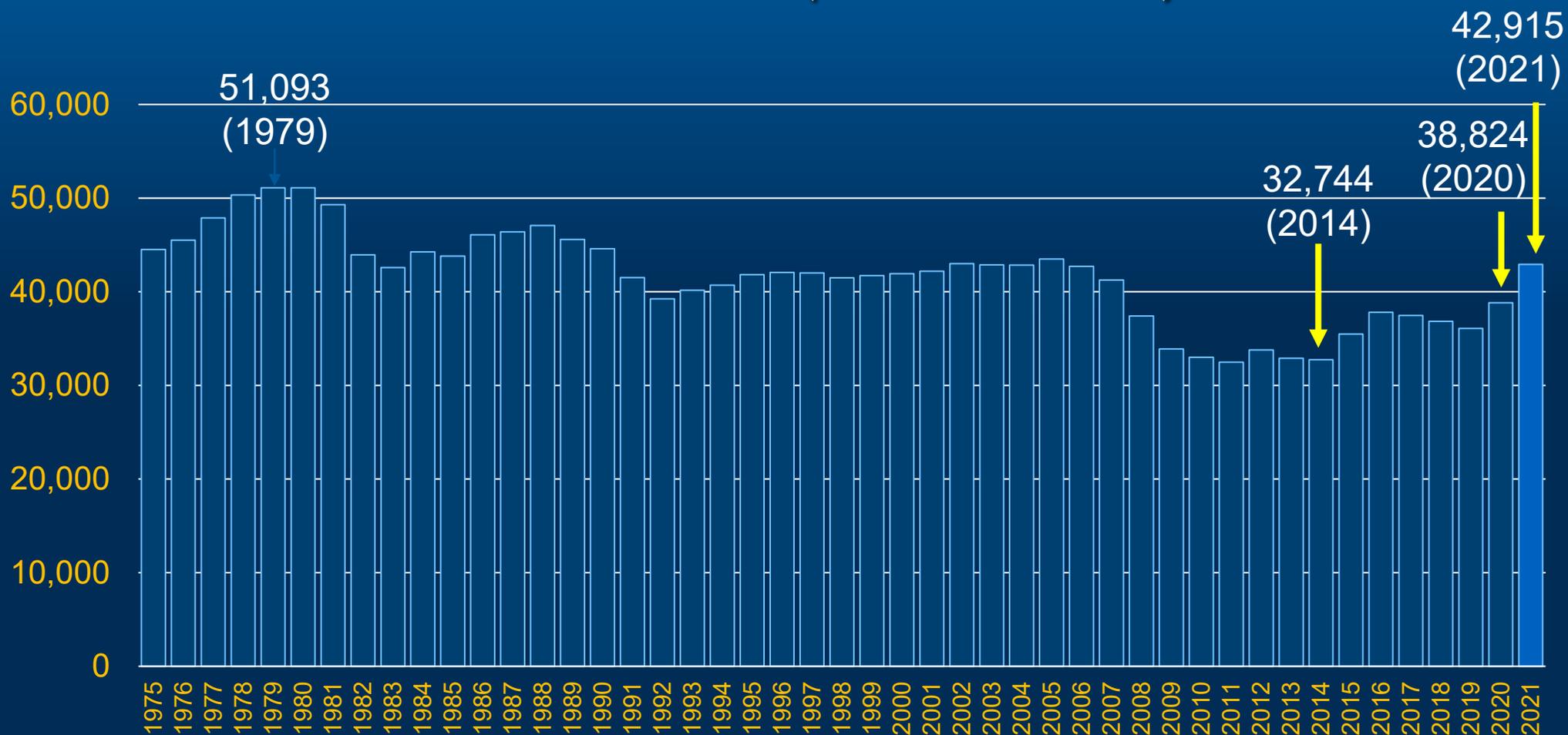
Member
Tom Chapman

US Transportation Fatalities in 2020 – by Mode

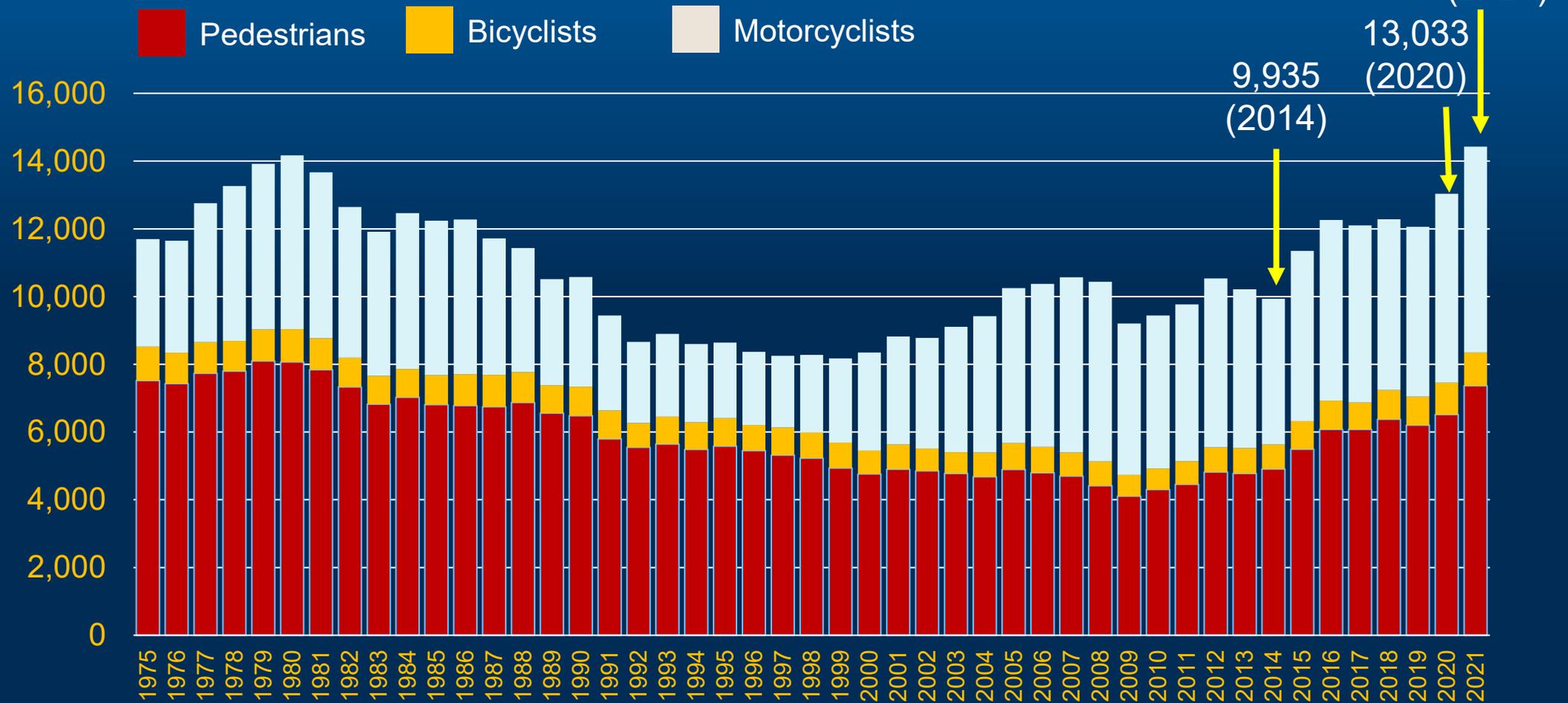


Data prepared by NTSB Office of Research & Engineering's Safety Research Division

Motor vehicle crash deaths (1975-2021)



Vulnerable road user deaths (1975-2021)





2021-2022 NTSB MOST WANTED LIST OF TRANSPORTATION SAFETY IMPROVEMENTS

AVIATION

Require and Verify the Effectiveness of Safety Management Systems in all Revenue Passenger-Carrying Aviation Operations

Install Crash-Resistant Recorders and Establish Flight Data Monitoring Programs

HIGHWAY

Implement a Comprehensive Strategy to Eliminate Speeding-Related Crashes

Protect Vulnerable Road Users through a Safe System Approach

Prevent Alcohol- and Other Drug-Impaired Driving

Require Collision-Avoidance and Connected-Vehicle Technologies on All Vehicles

Eliminate Distracted Driving

MARINE

Improve Passenger and Fishing Vessel Safety

RAILROAD, PIPELINE, AND HAZARDOUS MATERIALS

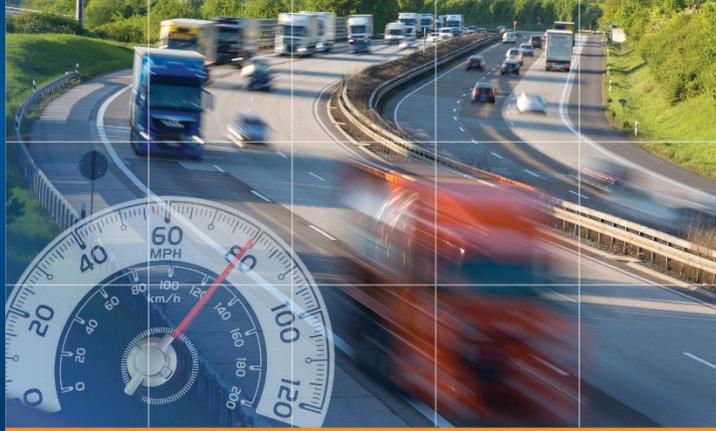
Improve Pipeline Leak Detection and Mitigation

Improve Rail Worker Safety

NTSB 2021-2022

MWL
MOST WANTED LIST

Most Wanted Highway Safety Improvement Items



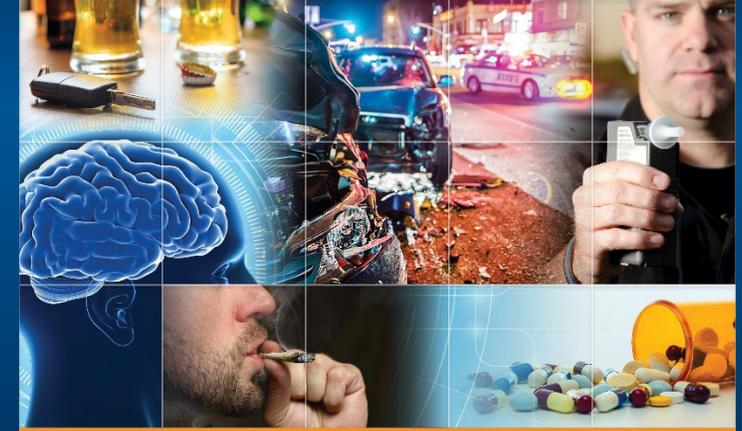
NTSB 2021-2022
MWL
MOST WANTED LIST

Implement a Comprehensive Strategy to Eliminate Speeding-Related Crashes



NTSB 2021-2022
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MOST WANTED LIST

Eliminate Distracted Driving



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Prevent Alcohol- and Other Drug-Impaired Driving



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Require Collision-Avoidance and Connected-Vehicle Technologies on All Vehicles



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MWL
MOST WANTED LIST

Protect Vulnerable Road Users through a Safe System Approach

Traditional approach to risk reduction

Risk = Crash involvement x injury severity

- Prevent crashes by changing individual human behavior
- Mitigate injury severity by increasing occupant protection
- Individual road user's responsibility
- Lacks holistic approach.

Safe system approach to risk reduction

Risk = Crash involvement x injury severity

- Focus on injury severity
- No death and serious injury is acceptable
- Prevent crashes by anticipating human mistakes
- Accommodate human vulnerabilities
- Shared responsibility in the road system

Safe system principles

Death or serious injury is unacceptable

Humans make mistakes

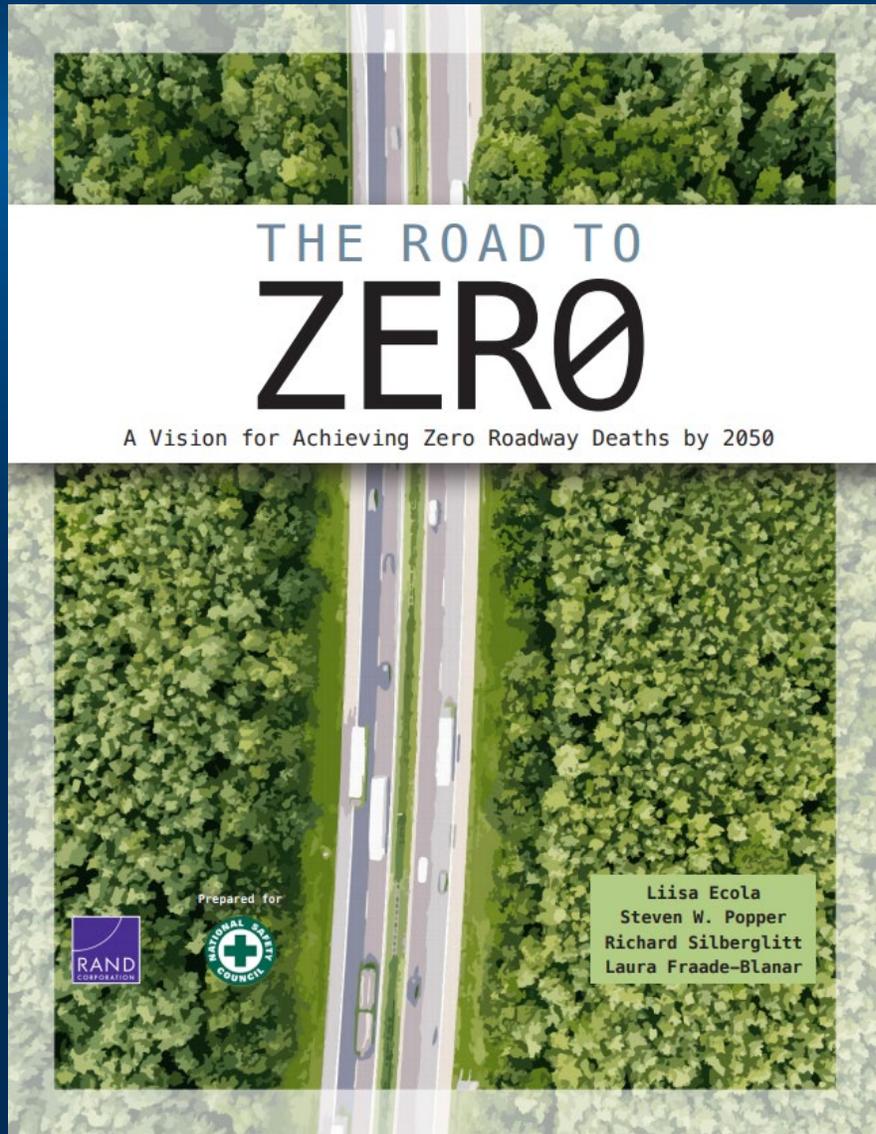
Humans are vulnerable

Responsibility is shared

Safety is proactive

Redundancy is crucial

Key risk factors are identified and understood



A vision for achieving zero roadway deaths by 2050

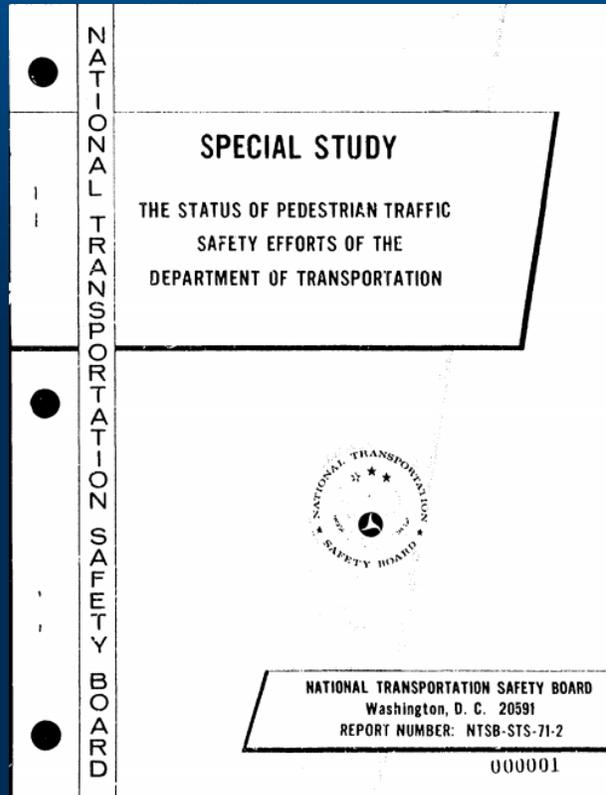
- Double down on what works
- Accelerate advanced technology
- Prioritize safety

Safe system elements



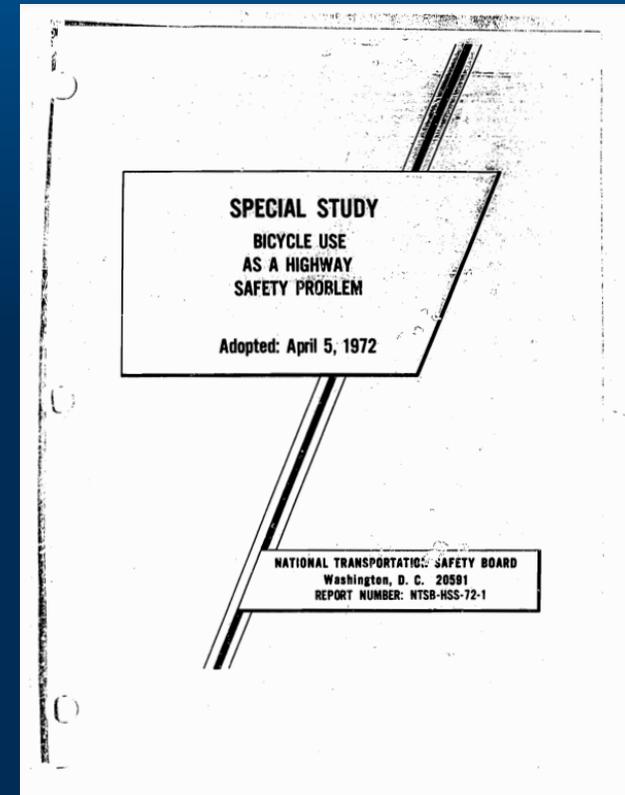
NTSB's special studies in the 1970s

1971



Pedestrians

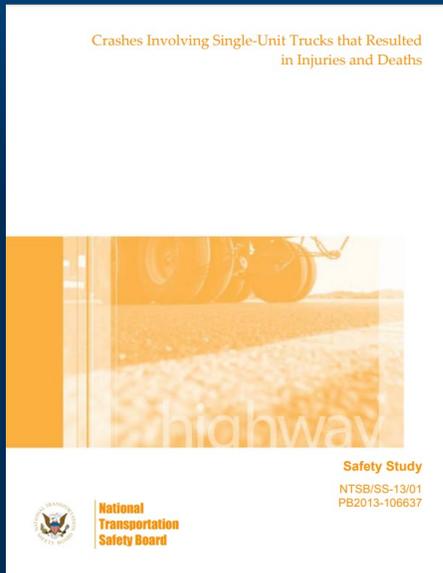
1972



Bicyclists

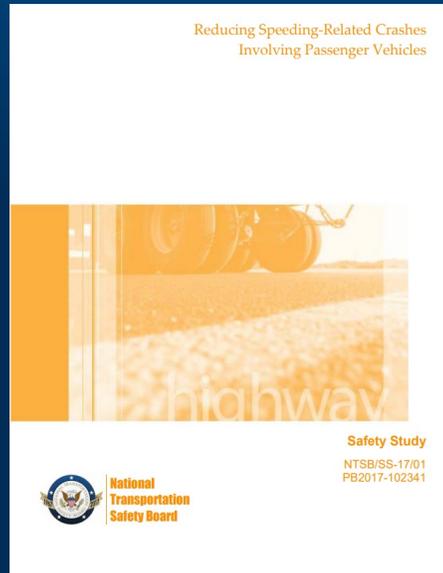
NTSB's special studies in the 2010s

2013



Single Unit Trucks

2017



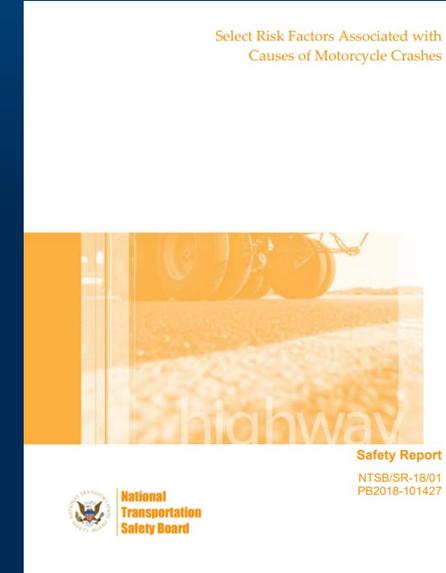
Speeding

2018



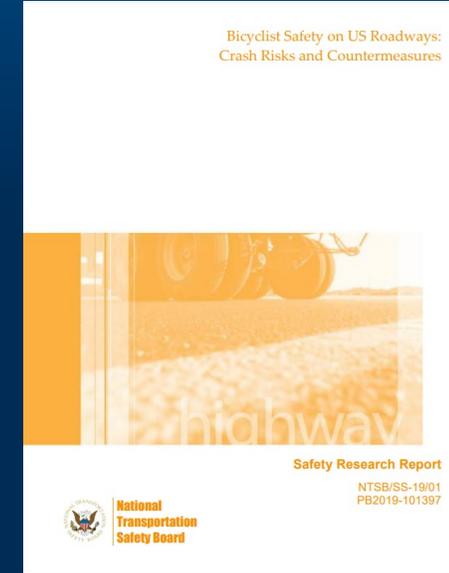
Motorcyclists

2018



Pedestrians

2019



Bicyclists

<https://www.nts.gov/safety/safety-studies/Pages/SafetyStudies.aspx>

NTSB Safe systems roundtable series (2021-2022)

NTSB MOST WANTED LIST **ROUNDTABLE**



A Safe System Approach to Traffic Safety

Moderated by Board Member **Tom Chapman**

NTSB

Thursday, May 20, 2021
12:00–2:00 p.m. ET | Streaming online

NTSB MOST WANTED LIST **ROUNDTABLE SERIES**

MWL Roundtable: The Safe System Approach

The **Safe System** Approach

Watch later Share



Hosted by NTSB Board Member **Jennifer Homendy**

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Watch on  YouTube

NTSB .05 BAC Virtual Roundtable

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**MOST WANTED LIST
VIRTUAL ROUNDTABLE**

.05 BAC

Part 1:

Past, Present, and Future

Wednesday, July 20, 2022

2:00pm–4:00pm ET



Moderated by the Honorable
Tom Chapman
NTSB Board Member

► [Live on Zoom](#)

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