National Capital Region Transportation Planning Board (TPB) Safety Subcommittee

June 8, 2021

U.S. Department of Transportation
Federal Highway Administration

Motor Vehicle Fatality Trends

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Federal Highway Administration

Table 1. Motor vehicle crashes and deaths, 2014–2019.

	2014	2015	2016	2017	2018	2019	Number and Percent change 2014-2019
Fatal Crashes	30,056	32,538	34,748	34,560	33,654	33,244	3,188 (10.6%)
Fatalities	32,744	35,484	37,806	37,473	36,560	36,096	3,352 (10.2%)
Fatality Rate per 100M VMT	1.08	1.15	1.19	1.17	1.13	1.1	0 (1.9%)
Serious Injuries	163,313	175,772	209,987	198,524	192,379	191,381	28,068 (17.2%)
Injuries	2,320,255	2,429,487	3,035,663	2,719,532	2,685,184	2,716,000	396,000 (17.1%)
Injury Rate per 100M VMT	77	78	96	85	83	84	7 (9.6%)
VMT (millions)	3,025,656	3,095,373	3,174,408	3,212,347	3,223,357	3,267,000	241,000 (8%)

Source: Fatality Analysis Reporting System, National Automotive Sampling System General Estimates System, Crash Report Sampling System, National Center for Statistics and Analysis, National Highway Traffic Safety Administration, Highway Performance Monitoring System, Federal Highway Administration.

Motor Vehicle Fatalities
2020-Early Estimates

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- An estimated **38,680 people died** in motor vehicle traffic crashes
- **Up an estimated 7.2%** as compared to the 36,096 fatalities reported in 2019
- Vehicle miles traveled **(VMT) decreased** by about 430.2 billion miles, or about a 13.2%
- The fatality rate was **1.37 fatalities per 100 million VMT**, up from 1.11 fatalities per 100 million VMT in 2019
- The projected fatality rate for 2020 would be the greatest since 2007

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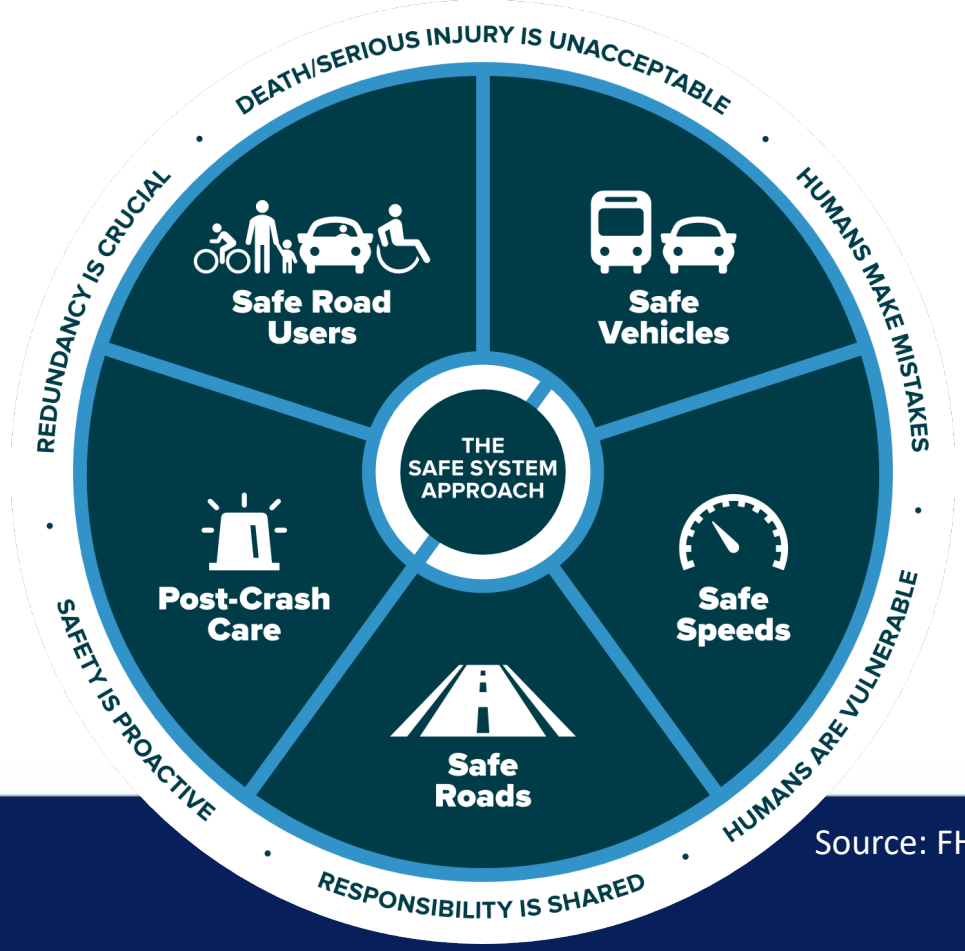
We have an opportunity, and an obligation, to try new approaches and "double down" on what works.

ZERO IS OUR GOAL
A SAFE SYSTEM IS HOW WE GET THERE



Source: FHWA

The Safe System Approach

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ZERO IS OUR GOAL
A SAFE SYSTEM IS HOW WE GET THERE

Successful Safe System Adopters

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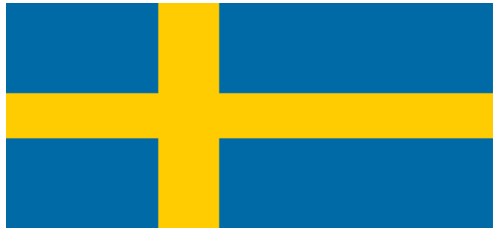


Sweden

Vision Zero

60-70%

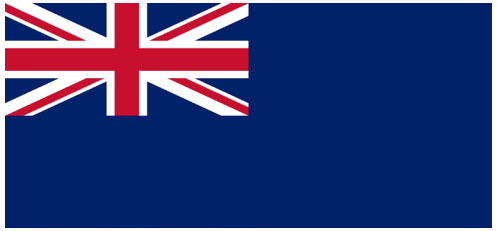
Reduction in fatalities
1994-2015

Netherlands

Sustainable Safety

50-60%

Reduction in fatalities
1994-2015

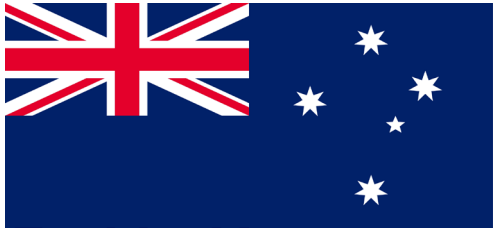


Australia

Safe System

50-60%

Reduction in fatalities
1994-2015



New Zealand

Safer Journeys

50-60%

Reduction in fatalities
1994-2015

Source: World Resources Institute

The 6 Safe System Principles

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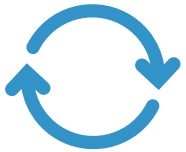
Death/serious injury is unacceptable

Humans make mistakes

Humans are vulnerable

Responsibility is shared

Safety is proactive



Redundancy is crucial

Humans are vulnerable

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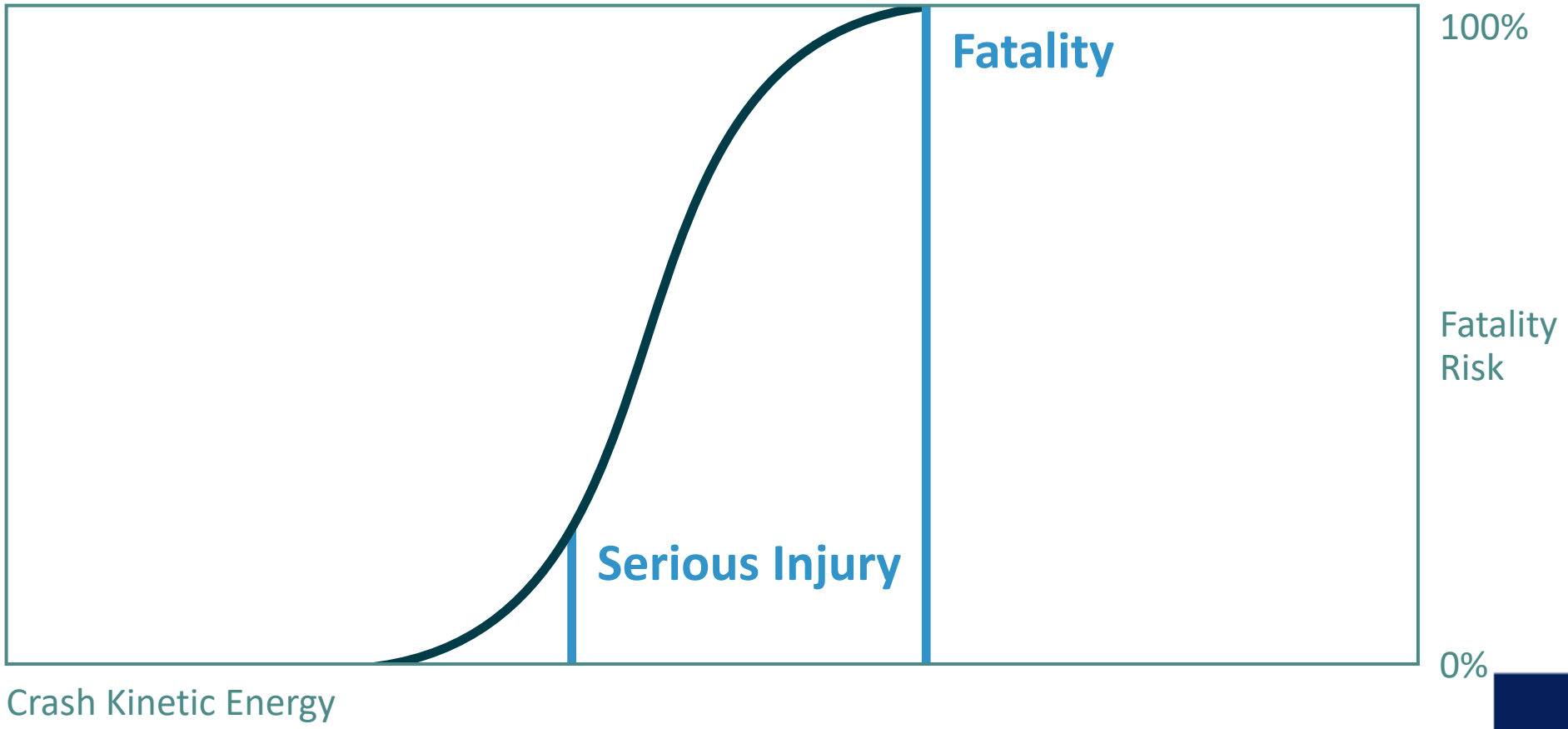

Source: FHWA

Redundancy is crucial

Safe road users

Safe vehicles

Safe speeds

Safe roads

Post-crash care

The 5 Safe System Elements Create Redundancy

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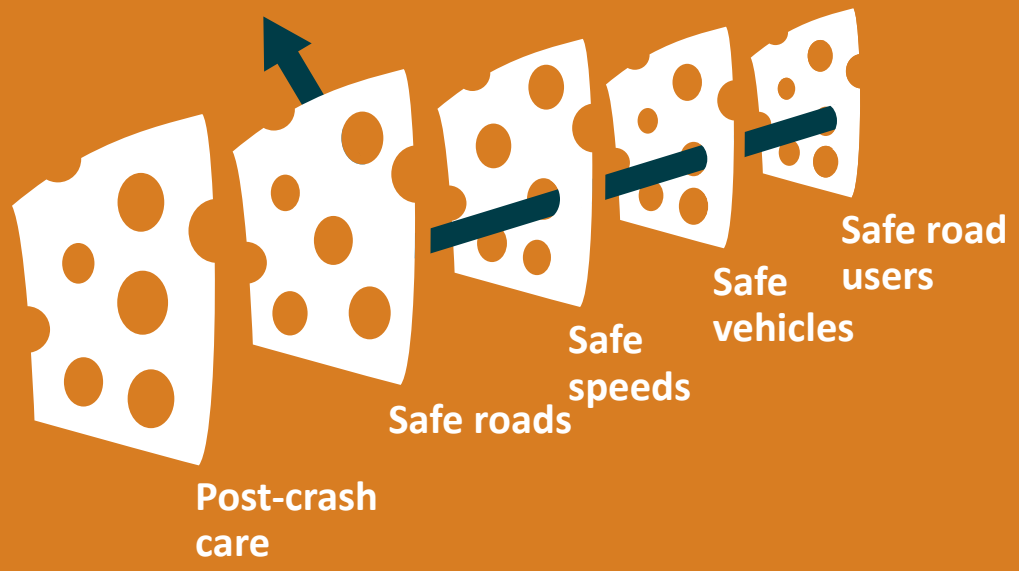
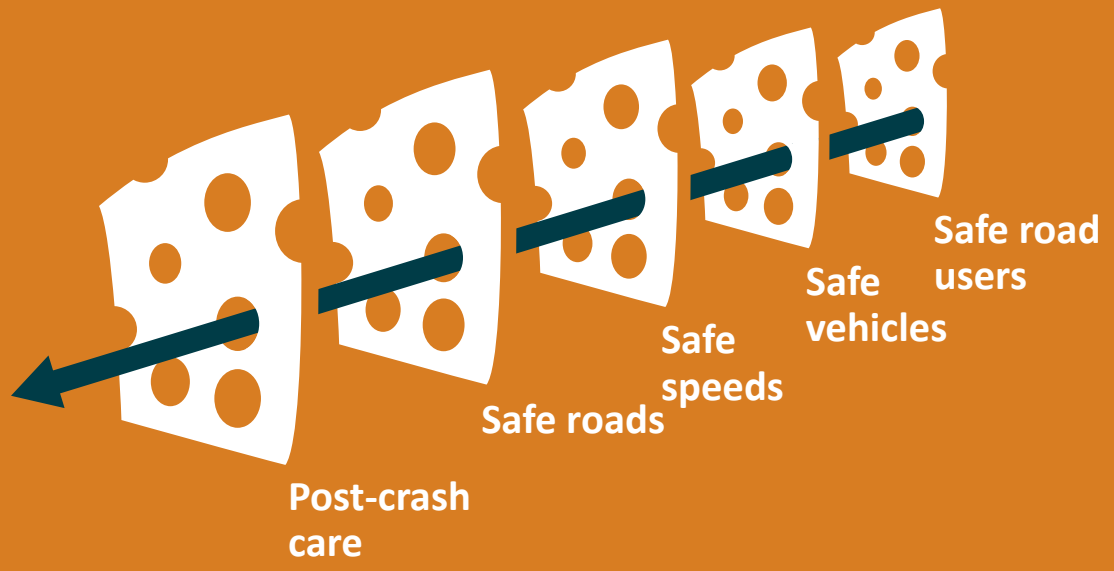
The "Swiss Cheese Model" of redundancy creates layers of protection



Death and serious injuries only happen when all layers fail



Source: FHWA

Safe System Elements

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Safe road users

Safe vehicles

Safe speeds

Safe roads

Post-crash care

Safe Road Users

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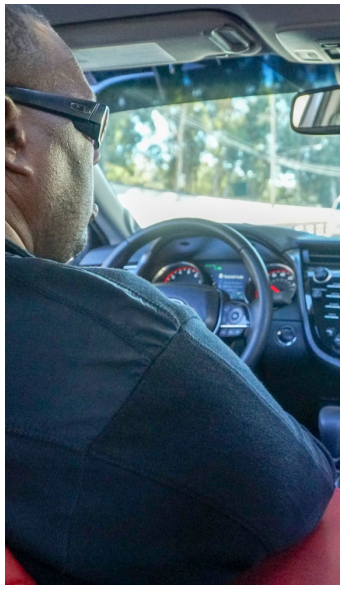
Walk

Bike



Drive

Transit

Other

Fehr & Peers

Safe Roads: Crash Kinetic Energy

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Managing crash kinetic energy involves:

Managing speed

Manipulating mass

Manipulating crash angles

Safe Roads: All Aspects of the roadway system

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Safe roads include all aspects of the roadway system:

Design

Construction

Maintenance

Operation

Post-Crash Care

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Vital post-crash actions include:

First responders

Medical care

Crash investigation

Traffic incident management

Justice

The Safe System Approach

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Traditional Approach		Safe System Approach
Prevent crashes	→	Prevent death and serious injuries
Improve human behavior	→	Design for human mistakes/limitations
Control speeding	→	Reduce system kinetic energy
Individuals are responsible	→	Share responsibility
React based on crash history	→	Proactively identify and address risks

The 4E's of Safety are Incorporated in the Safe System Approach

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Safe System Elements	Safe Road Users	Safe Vehicles	Safe Speeds	Safe Roads	Post-Crash Care
4 E's of Safety	Education Enforcement	Engineering	Engineering Enforcement	Engineering	Emergency Response

Safe System Resources

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Flyer and Presentation

THE SAFE SYSTEM APPROACH

Zero is our goal. A Safe System is how we get there.

Zero is our Goal. A Safe System is how we get there.

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ZERO IS OUR GOAL
A SAFE SYSTEM IS HOW WE GET THERE

Thank you!

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