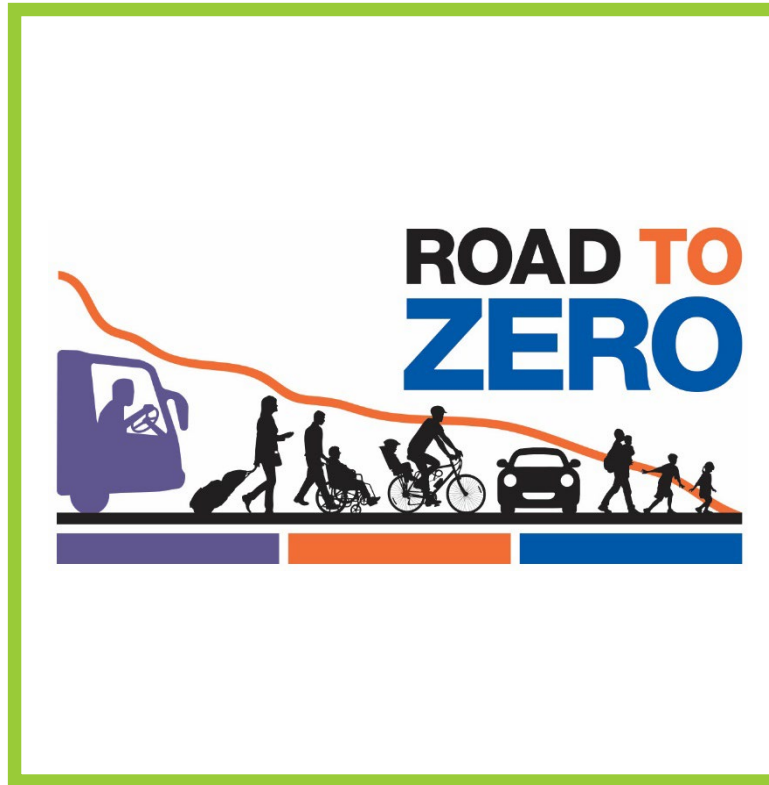


Zero Deaths Initiatives and the Safe System Approach



VISIONZERO





Vision Zero

- Strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, and equitable mobility for all
- Proactive, preventative approach that prioritizes traffic safety as a public health issue
- Originated in Sweden in the 1990s and has since spread throughout Europe and US



Source: visionzeronetwork.org

Vision Zero and Safe Systems

- Vision Zero goes hand in hand with the Safe System Approach
 - ✓ Humans make mistakes
 - ✓ Transportation system must accommodate human error
 - ✓ No deaths or serious injuries
- SSA implementation is the way to achieve zero deaths



Source: visionzeronetwork.org



Components of a Vision Zero Commitment

1

Leadership, collaboration, and accountability among transportation professionals, policymakers, public health officials, police, and community members

2

Collecting and analyzing data to understand trends and which populations bear disproportionate traffic deaths

3

Prioritizing equity and community engagement, working with and supporting existing community-based organizations to achieve equity and engagement goals

4

Managing speeds to safe levels using strategies such as safe street design, ASE, and safe speed limits

5

Setting a timeline to achieve zero deaths, establishing urgency, accountability, and transparency



Toward Zero Deaths

- National strategy on highway safety advocating for eliminating serious injuries and deaths on nation's roadways
- Shares zero deaths goal with Vision Zero
- Originated at highway safety workshop in 2009
- Supported by FHWA, FMCSA, and NHTSA



TOWARD ZERO DEATHS:

A NATIONAL STRATEGY ON HIGHWAY SAFETY

Toward Zero Deaths: National Strategy

Six Emphasis Areas:

Drivers and
Passengers

Vulnerable
Users

Vehicles

Infrastructure

Emergency
Medical
Services

Safety
Management

TZD emphasizes the creation of a culture of traffic safety wherein drivers reject risky behaviors and all road users make decisions based on safety



Road to Zero Coalition Steering Group



Federal Partners



- Collaborative effort focused on eliminating traffic fatalities within 30 years
- Umbrella organization allowing other efforts, including Vision Zero and Toward Zero Deaths to collaborate through a steering group
- Created in October 2016 and led by non-profit National Safety Council in partnership with USDOT



Road to Zero

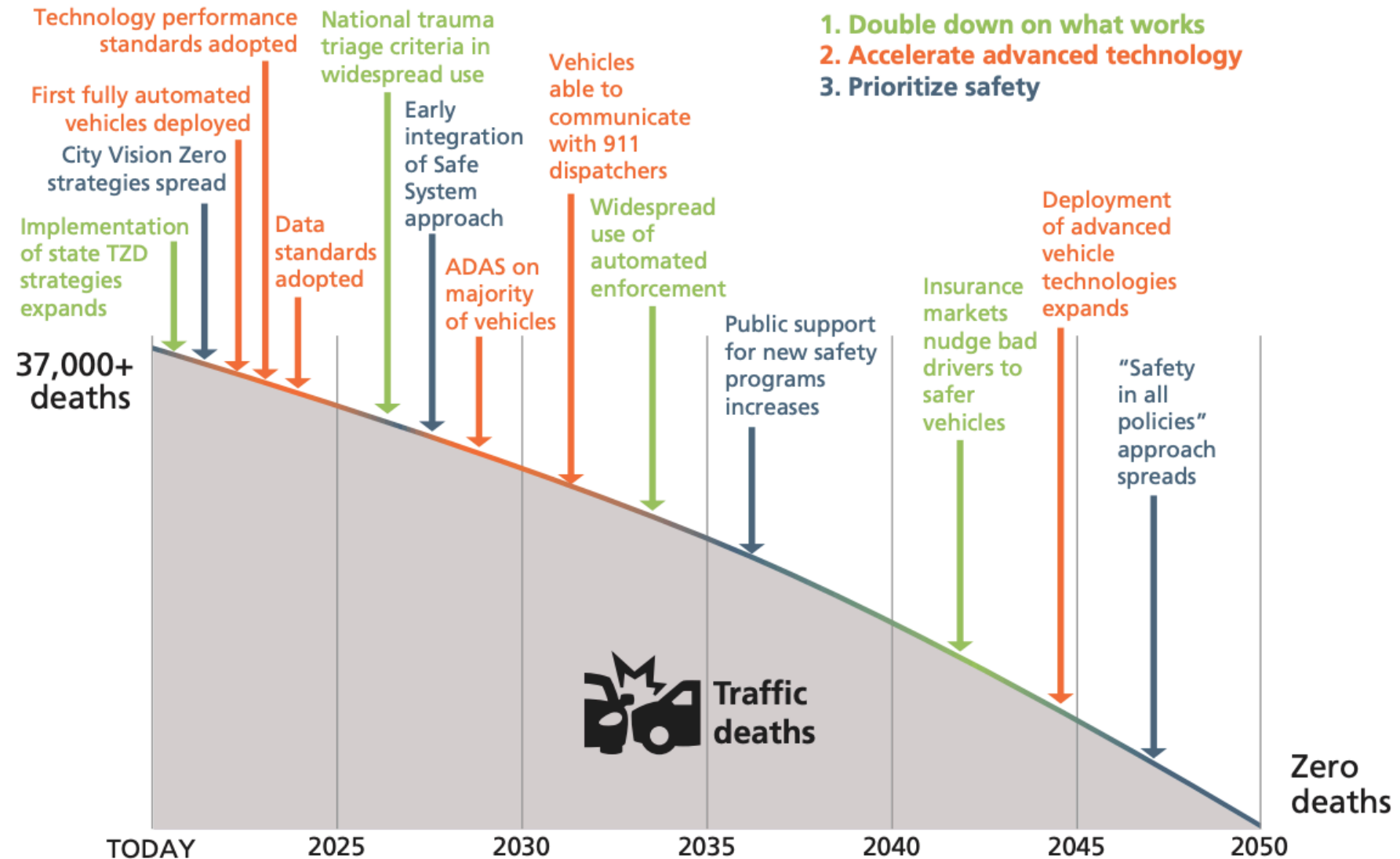
Three Main Initiatives:

1. Doubling down on what works through proven, evidence-based strategies
2. Advancing life-saving technology in vehicles and infrastructure
3. Prioritizing safety by adopting a Safe System Approach and creating a positive safety culture

Source: nsc.org



Three Approaches Working Together to Reduce Roadway Deaths to Zero



NOTE: TZD = Toward Zero Deaths.

RAND RR2333-S.3

Source: nsc.org



Road to Zero: Resources



Community Traffic Safety Grants



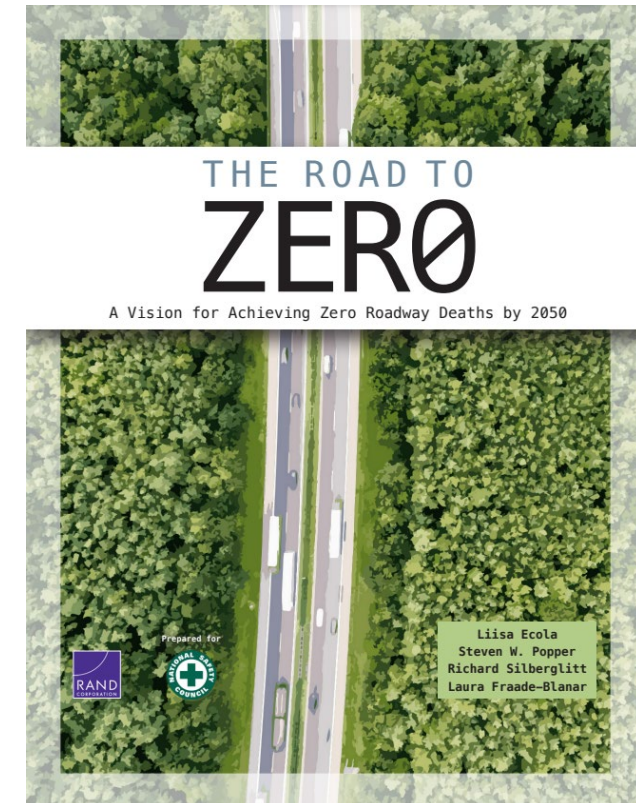
Webinars



Newsletter



Links to other resources



Safe System Approach

Zero is our goal.

A Safe System is how we
will get there.





Safe System Approach in Road Safety Strategies

Vision Zero	Toward Zero Deaths	Road to Zero
<ul style="list-style-type: none">• Actively referenced and majorly part of the strategy• VZ emphasizes a Safe System Approach and focuses on influencing system-wide practices, policies, and designs to lessen the severity of crashes	<ul style="list-style-type: none">• Not mentioned in the report, but the six key areas are similar to the five elements of the Safe Systems Approach• TZD encourages a Transportation Safety Culture	<ul style="list-style-type: none">• Actively referenced and tied to Vision Zero, TZD and Safe System Approach• One of the 3 initiatives of RTZ is to prioritize safety by adopting a Safe System Approach and creating a positive safety culture

Integrating the Safe System Approach with the Highway Safety Improvement Program (HSIP)

- Safe System principles are present in many components of the State Strategic Highway Safety Plan (SHSP) and HSIP processes
- Opportunities to better align state SHSP processes with Safe System principles include:
 1. Organizing the SHSP around the six Safe System core principles
 2. Committing to a goal of zero
 3. Refocusing on speed management
 4. Institutionalizing equity in road safety work
 5. Using proactive data analysis to address equity



Case Studies: Zero Deaths Principles and Safe System Approach in Strategic Highway Safety Plans





Traffic Fatalities

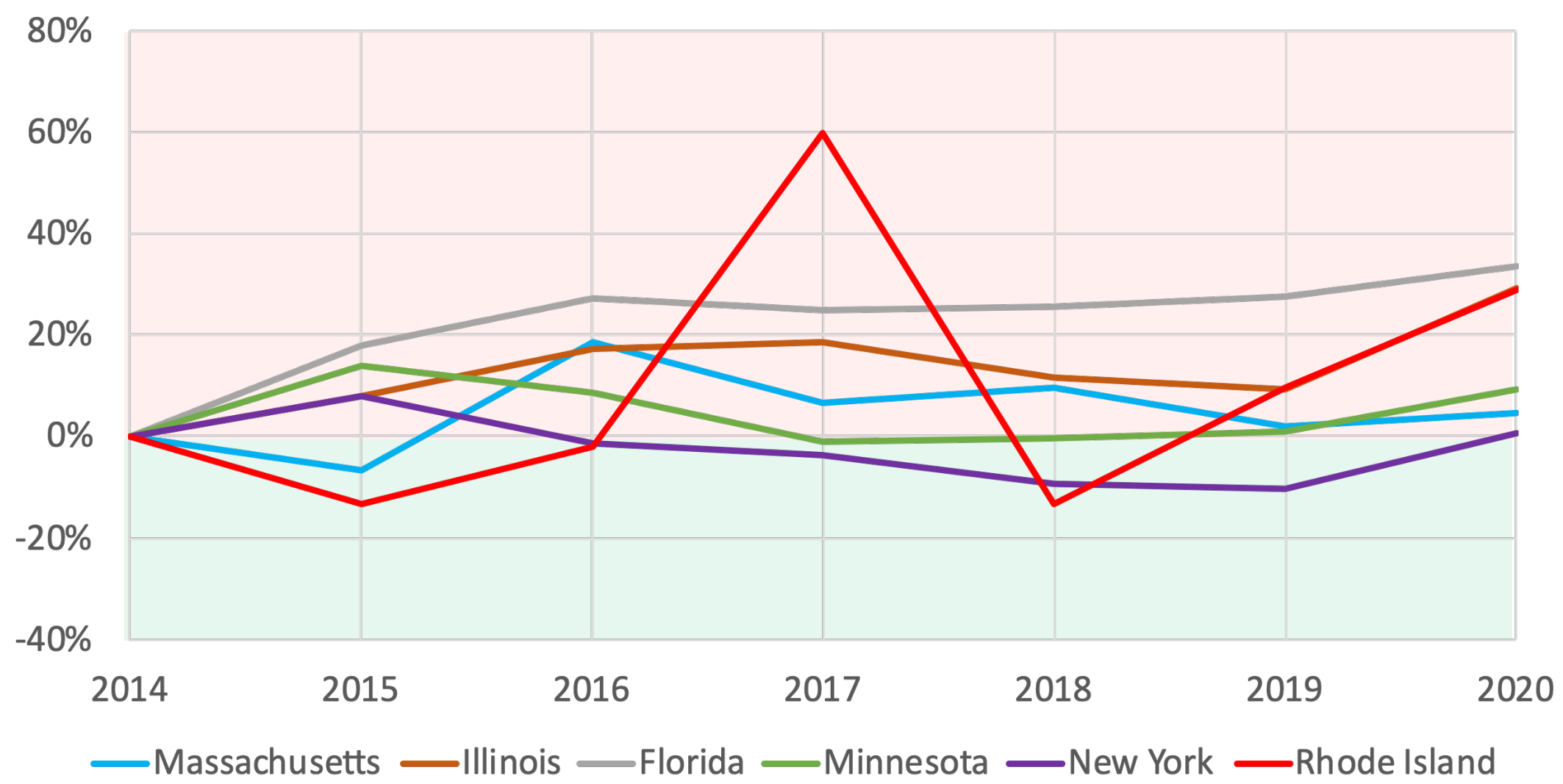
	Pedestrian Fatalities			Bicyclist Fatalities			All Traffic Fatalities		
States	2014	2019	2020	2014	2019	2020	2014	2019	2020
Massachusetts	70	77	52	8	5	10	328	334	343
Illinois	123	173	176	27	12	30	924	1009	1194
Florida	588	713	696	139	161	170	2494	3183	3331
Minnesota	15	47	45	5	11	10	361	364	394
New York	263	268	231	46	46	47	1039	931	1046
Rhode Island	14	8	17	0	0	2	52	57	67

Source: NHTSA



Percent Change in All Roadway Fatalities, 2014 -2020

Base Year: 2014

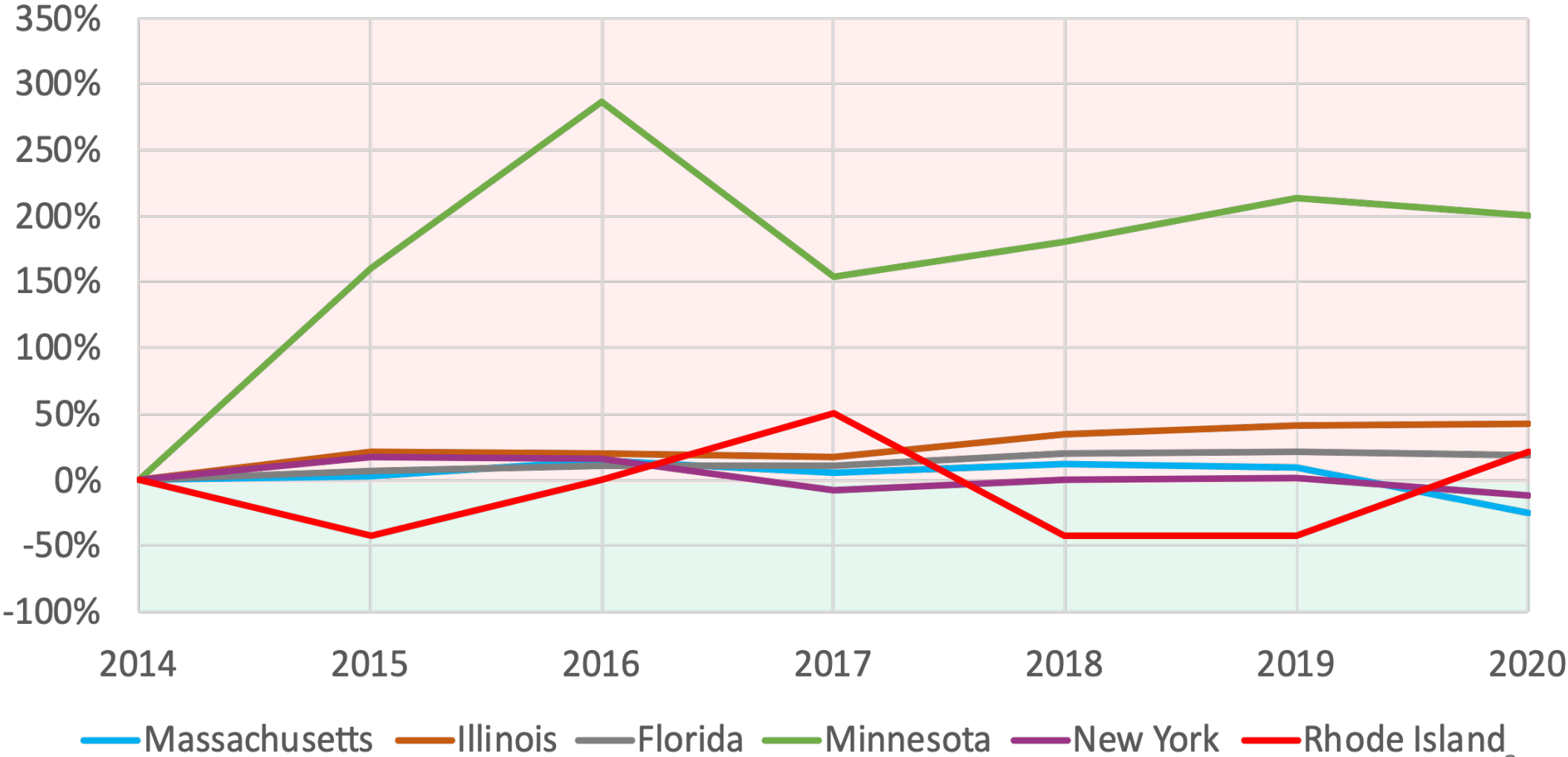


Source: NHTSA



Percent Change in Pedestrian Fatalities, 2014 -2020

Base Year: 2014

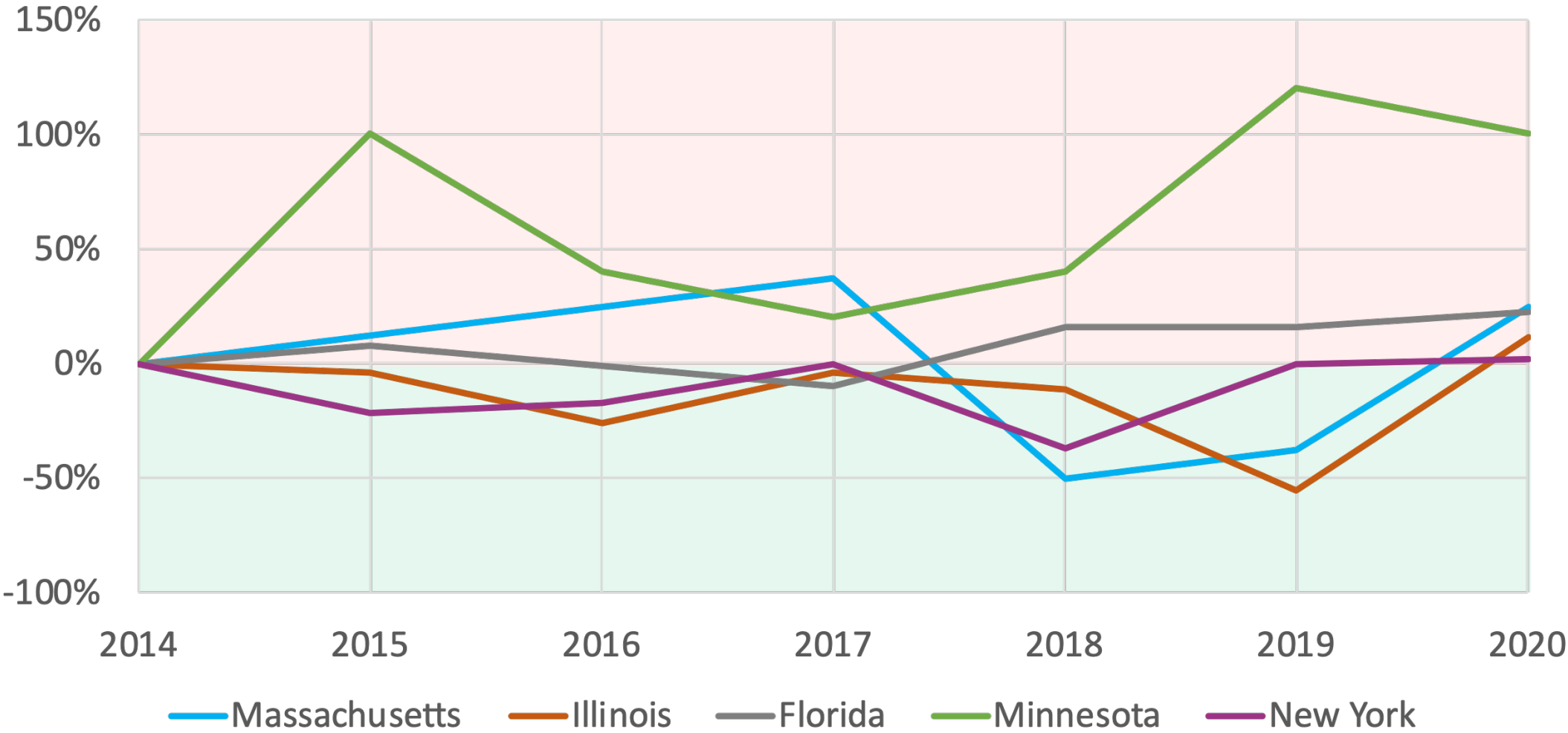


Source: NHTSA



Percent Change in Bicyclist Fatalities, 2014 -2020

Base Year: 2014

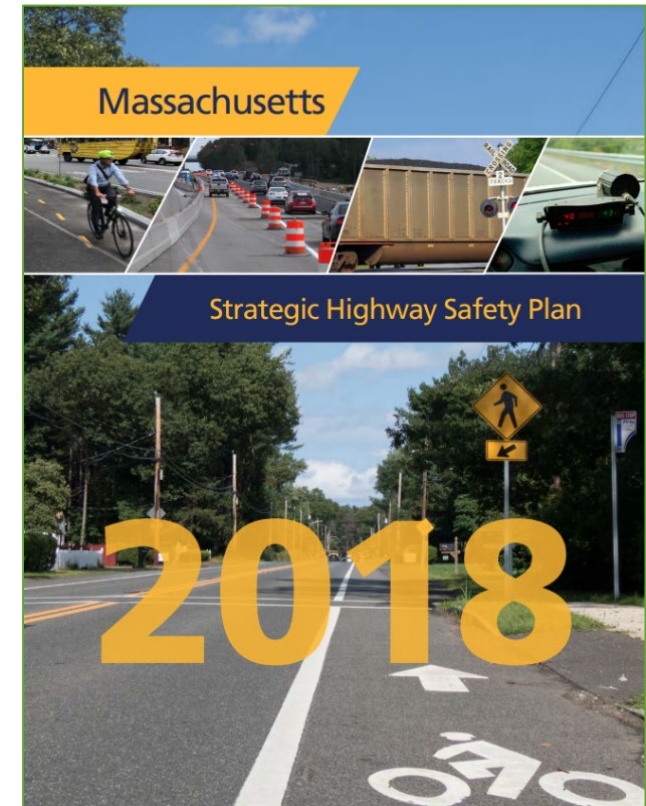


* Since the base year fatality count in Rhode Island is zero, it has an undefined percent change and is not shown in this chart.

Source: NHTSA

Case Study: Massachusetts

- Massachusetts' 2018 SHSP envisions a roadway system with zero roadway deaths and serious injuries.
- Goal: reduce five-year average fatalities by 12% and serious injuries by 21%
- Implementation plan includes 14 Emphasis Areas.
 - *Lane Departure Crashes*
 - *Impaired Driving*
 - *Occupant Protection*
 - *Speeding and Aggressive Driving*
 - *Intersection Crashes*
 - *Pedestrians*
 - *Older Drivers*
 - *Motorcycle Crashes*
 - *Younger Drivers*
 - *Large Truck-Involved Crashes*
 - *Driver Distraction*
 - *Bicyclists*
 - *Safety of Persons Working on Roadways*
 - *At-Grade Rail Crossings*



Source: Strategic Highway Safety Planning in Massachusetts 2018



Case Study: Massachusetts

Pedestrian Action Plan Strategies

- Incorporate pedestrian safety elements into infrastructure design and engineering
- Enhance pedestrian safety expertise
- Support municipalities in their efforts to promote pedestrian safety
- Increase public awareness about pedestrian safety
- Continue to examine and improve processes for collecting pedestrian crash data to measure and quantify fatalities and injuries

Bicyclist Action Plan Strategies

- Improve design and engineering of bicycle facilities on and off roadways
- Enhance bicycle safety expertise
- Support municipalities in their efforts to promote bicycle safety
- Increase public awareness about bicycle safety
- Integrate bicycle safety activities with other plans
- Incorporate changes precipitated by new directives related to healthy transportation
- Develop processes for collecting data to measure and quantify fatalities and injuries to better understand crashes involving bicyclists and regular crash data analysis

Case Study: Illinois

- SHSP released in 2022 with a vision of zero fatalities on public roadways
- Goal: 2% annual reduction in fatalities and serious injuries based on the 5-year rolling average
- Specifically references Safe System Approach and Toward Zero Deaths
- Emphasis Areas:
 - *Safe Behavior*
 - *Safe Road Users and Vehicles*
 - *Safe Roads*
 - *Post-Crash Care*
 - *Safe System Administration*



Source: Illinois Strategic Highway Safety Plan (ILSHSP) 2022



Case Study: Illinois

PEDESTRIANS STRATEGIES

While there are several factors influencing the increase in pedestrian fatalities and serious injuries, there are proven effective 4E strategies that Illinois has used successfully and will continue to expand through the SHSP:

- » Strategies to reduce pedestrian exposure.
- » Strategies that improve visibility for pedestrians.
- » Strategies for improving awareness for pedestrian safety.
- » Safe speed or slowing vehicle strategies to improve safety for pedestrians.

BICYCLISTS STRATEGIES

Bicycle-related fatalities and severe injuries may be reduced by implementing the following strategies:

- » Strategies that may be implemented by partnering on bike safety with local, state and federal agencies and organizations.
- » Educate roadway users to improve interactions in traffic.
- » Research, identify, and implement effective policies to improve pedalcyclist safety at the state, local and governmental levels.
- » Improve infrastructure features to help reduce the number and severity of pedalcyclist crashes using a context-sensitive approach to design.

Case Study: Florida

- Florida's 2021 SHSP envisions eliminating all transportation fatalities and serious injuries with a focus on vulnerable road users.
- Introduces Florida to Safe System Approach
- All MPOs committed to vision of zero fatalities

Focused Strategies



Source: Florida Strategic Highway Safety Plan 2021

FOCUSED STRATEGIES

ENGINEERING

Develop and deploy engineering solutions and best practices to support and encourage safe walking and bicycling such as refuge islands, walkways, pedestrian crossing islands, road diets, separated bike lanes, leading pedestrian intervals, median channelization, marking enhancement, lighting, and innovative signals and beacons.

EDUCATION



Develop and implement clear, consistent, and context-sensitive targeted outreach and communication strategies about pedestrian and bicyclist safety to all roadway users.

Educate and train state and local planners, designers, engineers, and law enforcement staff on the benefits of including pedestrian and bicyclist safety in the planning stages of all relevant transportation projects.

Include safety issues and compliance with traffic laws and regulations related to pedestrians and bicyclists in all driver training courses to educate beginning and experienced road users about these vulnerable road users.

ENFORCEMENT



Provide law enforcement officers training, tools, and resources to enforce laws that support safety for pedestrians and bicyclists.

EMERGENCY RESPONSE



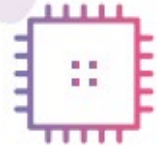
Advance targeted strategies for emergency response to crashes by improving medical response protocols specific to key injuries sustained by pedestrians and bicyclists.

INFORMATION INTELLIGENCE



Promote the collection, analysis, distribution, and use of quality data and tools to guide, enhance, and evaluate transportation-related decision making at the state, regional, and local levels to reduce pedestrian and bicyclist fatalities and serious injuries.

INNOVATION



Develop and test technologies that can improve bicyclist and pedestrian safety.

INSIGHT INTO COMMUNITIES



Reduce disparities in transportation safety risks by ensuring that all transportation projects provide safety, mobility, and accessibility to all road users, regardless of age or ability.

Create safer communities with urban and rural built environments that support and encourage safe walking and biking.

INVESTMENTS AND POLICIES



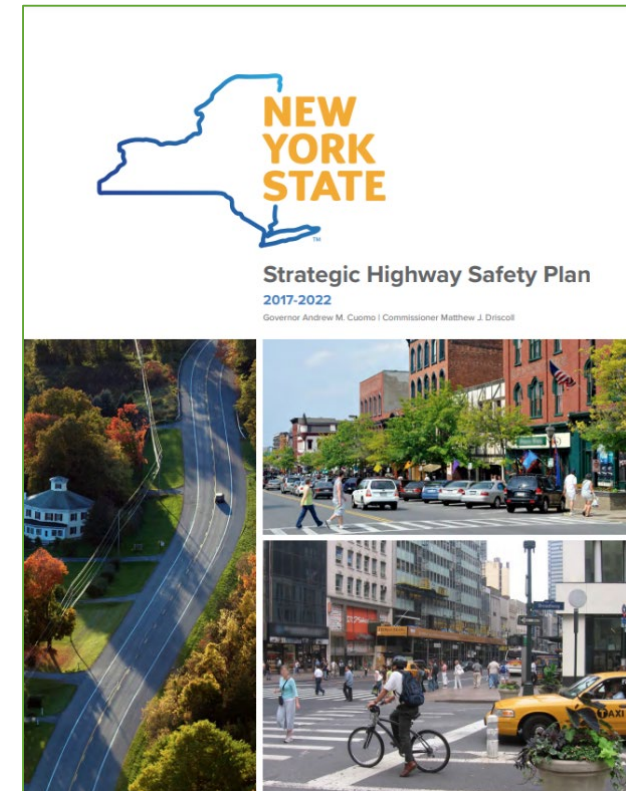
Prioritize projects providing a demonstrated safety benefit and accessibility for people walking and biking through all phases of relevant state and local transportation projects.

Identify and support state and local legislation and policies that clarify the responsibilities of users and support safe travel behavior.

Source: Florida Strategic Highway Safety Plan 2021

Case Study: New York

- New York's 2017 SHSP includes six Emphasis Areas:
 - *Intersections*
 - *Lane Departure*
 - *Vulnerable*
 - *Age-Related*
 - *Road User Behavior*
 - *Speed*
- Emergency Response and Data are included as cross-cutting considerations
- Examines the emerging areas of Connected and Autonomous Vehicles








Source: NY Strategic Highway Safety Plan 2017-2022



STRATEGIES

Decreasing the number of vulnerable user fatalities and serious injuries will be achieved through a multidisciplinary approach incorporating strategies that focus on engineering, education, and enforcement to address the various contributing factors.

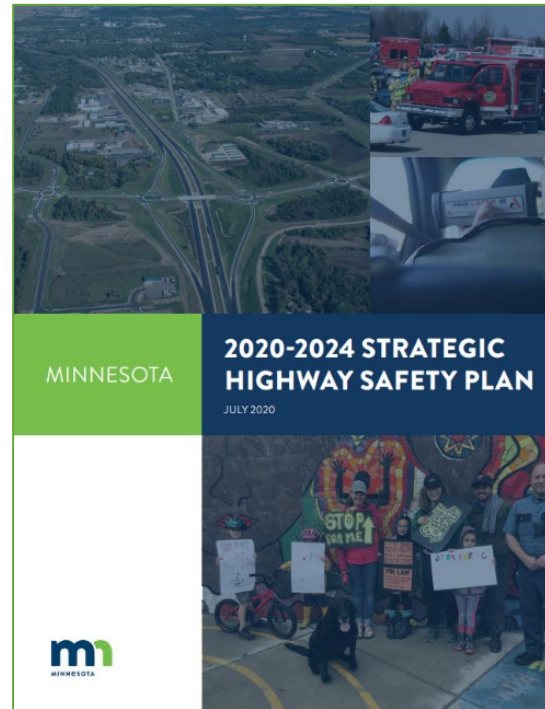
The New York SHSP includes the following five strategies to support the Vulnerable Users Emphasis Area:

-  Continue to implement infrastructure projects to enhance vulnerable user safety.
-  Enhance data processes to easily obtain current vulnerable user data.
-  Support policy initiatives to increase vulnerable user safety.
-  Continue educational programs related to vulnerable user safety.
-  Enforce traffic laws that pertain to both vulnerable users and motorists.

Source: NY Strategic Highway Safety Plan 2017-2022

Case Study: Minnesota

- Minnesota's 2020 SHSP commits to Toward Zero Deaths
- SHSP identifies 20 focus areas grouped into four categories:
 - *Core*
 - *Strategic*
 - *Connected*
 - *Support Solutions*



Source: Minnesota 2020-2024 Strategic Highway Safety Plan



STRATEGY 1	INCREASE EDUCATION AND AWARENESS FOR DRIVERS AND PEDESTRIANS		✓
ON-GOING	T1.1 Conduct a high profile pedestrian education campaign with increased media coverage targeted at drivers and pedestrians. Include curriculum on Walk! Bike! Fun! and Vision Zero programs in addition to current laws.		
ON-GOING	T1.2 Promote pedestrian-related laws in an easy-to-understand manner for public outreach.		
YEARS 1-2	T1.3 Develop local/community partnerships like advocacy groups and parent-teacher organizations. Create local strategies in partnership with underserved communities and communities with high pedestrian demand.		
YEARS 1-2	T1.4 Promote Safe Routes to School guidelines about education, encouragement, engineering, enforcement, evaluation, and equity.		
STRATEGY 2	IMPROVE DESIGN AND MAINTENANCE FOR PEDESTRIAN SAFETY		
ON-GOING	T2.1 Establish policies with all agencies to maintain pedestrian facilities for all four seasons, including proper snow and ice removal. Expedite maintenance of sidewalks and curb ramps to deter people from walking or rolling in the road.		
ON-GOING	T2.2 Provide appropriate crossing time at signalized/active crossings. Consider timing strategies to better accommodate pedestrian needs.		
YEARS 1-2	T2.3 Based on land use, design roads and facilities for pedestrians, such as sidewalks, mid-block breaks, and bump outs. Identify areas with inadequate pedestrian facilities that could be improved, including in rural areas or on tribal lands. Provide the appropriate number of safe pedestrian crossings to accommodate pedestrian needs.		✓
YEARS 1-2	T2.4 Design for appropriate road capacity to reduce crosswalk length and crosswalk conflicts. Utilize road diets (4-lane to 3-lane conversions) where appropriate.		✓
YEARS 1-2	T2.5 Install proper signing at crosswalks and evaluate current signing standards. Increase the use of dynamic signing options at mid-block crossings where there are high volumes of pedestrian traffic. Promote the use of advance stop bars and/or yield lines at all crosswalks.		
YEARS 1-2	T2.6 Improve lighting around pedestrian facilities to increase pedestrian visibility, including near transit stops and in rural areas.		✓
YEARS 3-5	T2.7 Evaluate passive pedestrian detection technology.		

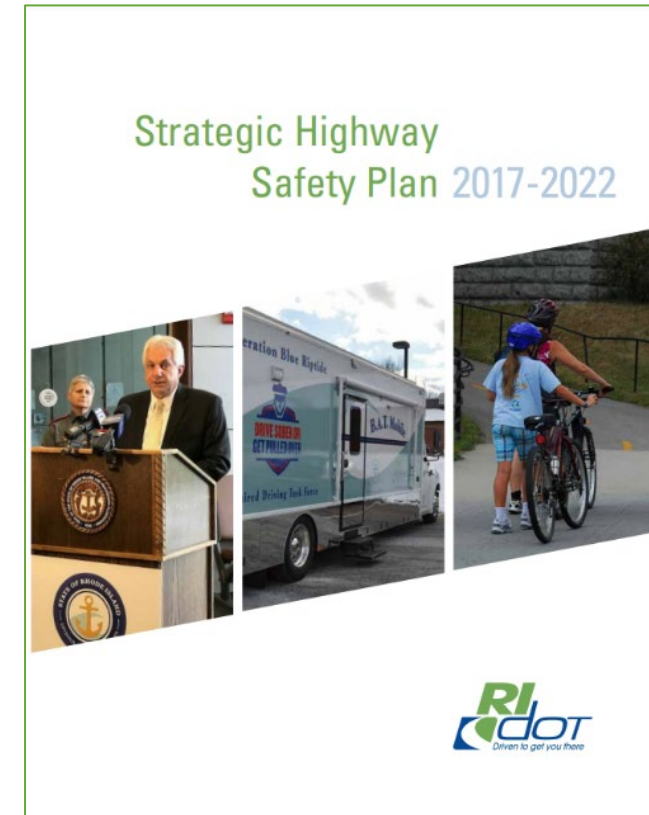
STRATEGY 2	PROMOTE POLICY CHANGES THAT IMPACT PEDESTRIAN SAFETY	
ON-GOING	T3.1 Increase funding for pedestrian safety campaigns and pedestrian facilities.	
YEARS 1-2	T3.2 Improve pedestrian volume data collection to identify trends and numbers for health, law, plans, and policies.	
YEARS 1-2	T3.3 Explore school bus stop arm violation camera enforcement.	
YEARS 3-5	T3.4 Develop pedestrian plans and Complete Streets plans at regional and local levels.	

✓ = Tactics that are a priority to work on in the first year of this plan ☒ = Strategies that are a priority to work on over the five years of this plan

Source: Minnesota 2020-2024 Strategic Highway Safety Plan

Case Study: Rhode Island

- Rhode Island's 2017 SHSP references Toward Zero Deaths as a guiding principle
- Goal: reduce annual road fatalities and serious injuries by 50% by 2030
- 10 Emphasis Areas:
 - *Impaired Driving*
 - *Occupant Protection*
 - *Intersection and Run-Off-The-Road*
 - *Speeding*
 - *Vulnerable Users (Bicyclists, Pedestrians, Motorcyclists)*
 - *Aging Drivers*
 - *Young Drivers*
 - *Distracted Driving*
 - *Traffic Incident Management*
 - *Data*



Source: Rhode Island 2017-2022 Strategic Highway Safety Plan

Strategies & Action Items



Leadership

Establish a Vulnerable Users Task Force to engage leadership from various agencies on issues related to these users.

- › Hold quarterly meetings in person or by phone.

- › Develop briefing materials for leadership.
- › Identify funding opportunities to fund initiatives.



Criminal Justice System

Enforce pedestrian and bicycle laws particularly at locations where vulnerable road user crashes are a problem.

- › Work with enforcement agencies.

Provide continuing education efforts for law enforcement.

- › Develop a roll call training video to improve enforcement and data collection techniques.

Explore regulations to augment the safety of vulnerable users.

- › Provide recommendations to address motorcycle helmets.
- › Provide recommendations to address hands free cell phones.
- › Provide recommendations to revise the driver's test.



Prevention & Treatment

Support education and outreach to provide information about the unique needs of vulnerable users.

- › Conduct outreach campaigns using appropriate media to target high-risk audiences, casual bicyclists and motorcyclists, and out-of-State visitors.
- › Develop fact sheets to highlight laws, consequences and economic impacts.
- › Advertise enforcement mobilizations.
- › Develop a communications campaign.

- › Establish a speakers' bureau comprised of victims who can provide testimonials.
- › Find ways to highlight the advantages of wearing colorful, reflective clothing while riding or walking.
- › Expand and enhance the motorcycle awareness campaign.
- › Re-establish highway safety curriculum for K-12 that includes a focus on vulnerable road user safety.



Evaluation

Improve the quality of vulnerable user data.

- › Partner with the Department of Health and hospitals to gain a better understanding of injury outcomes following crashes.
- › Evaluate the burden of motor vehicle crashes.
- › Identify methods to understand how vulnerable users are using the public roadway system.
- › Explore new data collection techniques to improve the quality and quantity of data.

- › Expand crash mapping to geocode all motorcycle crashes in the State.
- › Encourage motorists and vulnerable road users to report locations where vulnerable road user crashes are a problem.
- › Use data to target vulnerable user efforts.
- › Undertake an analysis of crash and hospital data to identify target locations and populations.
- › Partner with institutions to conduct data analysis.



Infrastructure

Enhance roadway design to improve vulnerable user safety by improving and creating roadway designs that account for pedestrians, bicyclists, and motorcycle riders which will improve safe transportation practices among all users.

- › Improve crossings, lighting, lane delineation, signal timings.
- › Implement a Complete Streets policy where appropriate to improve vulnerable user access and mobility.
- › Monitor new infrastructure best practices to accommodate vulnerable users.
- › Conduct training for highway engineers and maintenance personnel.
- › For detailed infrastructure improvements refer to page 23.



Conclusion

- All three Zero Deaths initiatives identify the same problem, but each one takes a different approach with a distinct focus.
- Literature that is more recent is more specific about FHWA's Safe System Approach.
- Newer SHSPs include more specific language about Zero Deaths initiatives and the Safe System Approach.
- There are many opportunities to more strongly integrate the principles of the Safe System Approach into state SHSP processes, including:
 - Organize SHSP around the core principles of the Safe System Approach
 - Commit to a goal of zero deaths
 - Focus on roadway design and speed management
 - Collect and analyze data proactively and with equity goals in mind

For more information, contact:

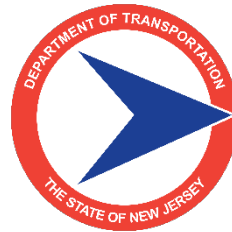
New Jersey Bicycle & Pedestrian Resource Center

Alan M. Voorhees Transportation Center

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