

Strategic Highway Safety Plan 2017-2022



Director's Message

This update continues our commitment to the goal of getting every road user to their destination safely.

It is with pleasure that we present the 2017 update to the Rhode Island Strategic Highway Safety Plan (SHSP) that continues the State's journey Toward Zero Deaths. This update expands on our Statewide commitment of getting every road user to their destination safely.

This SHSP updates Rhode Island's 2012 plan, which helped the State achieve remarkable progress in traffic safety. In 2015, there were 45 fatalities on Rhode Island roadways, a one-third decrease from numbers that were seen a half-decade ago. However, in response to a small, yet significant rise in traffic fatalities in 2016, we raised our level of effort to counter this concerning increase. We cannot celebrate any fatality number until our data points to ZERO deaths.

The progress we have made in traffic safety is due to the hard work and dedication of safety stakeholders throughout Rhode Island. We continue to identify additional partners who can provide innovative solutions to our efforts. Our partners incorporate perspectives from education, engineering, enforcement, and emergency medical services. This multidisciplinary approach fosters a community of collaboration as we recognize that the devastation caused by traffic crashes affects everyone. This is the approach we will duplicate as we move forward.

We are committed to building the most comprehensive and effective traffic safety program in the country, one that continues to move Rhode Island Toward Zero Deaths. We are calling on all Rhode Island residents to join this cause. Together, we can make a positive difference in the lives of our citizens and continue to make Rhode Island a vibrant, enjoyable, and most importantly a safe place to live, work, and visit.

Peter Alviti, Jr. P.E.

Director

Rhode Island Department of Transportation

The Rhode Island Department of Transportation (RIDOT) led the development of this update of the SHSP in coordination with representatives from safety stakeholders across the State. RIDOT would like to acknowledge the contributions of the following safety partner organizations, who will continue to work together to implement the strategies in this plan:

Acknowledgments

AAA

American Traffic Safety Services Association

City of Providence

Community College of Rhode Island

Cranston Police Department

Federal Highway Administration

Federal Motor Carrier Safety Administration

Jamestown Police Department

Mothers Against Drunk Driving

National Highway Traffic Safety Administration

Providence Responsible Nightlife Organization

Rhode Island Bicycle Coalition

Rhode Island Chiefs of Police

Rhode Island Courts

Rhode Island Department of Administration

Rhode Island Department of Behavioral Healthcare,
Developmental Disabilities and Hospitals

Rhode Island Department of Corrections

Rhode Island Department of Education

Rhode Island Department of Health

Rhode Island Department of Motor Vehicles

Rhode Island Hospital

Rhode Island Hospitality Association

Rhode Island Office for the Aging

Rhode Island Office of the Attorney General

Rhode Island Office of Management and Budget

Rhode Island Office on Highway Safety

Rhode Island Operation Lifesaver

Rhode Island Police Chiefs Association

Rhode Island Public Transit Authority

Rhode Island State Police

Rhode Island Traffic Tribunal

Rhode Island Turnpike and Bridge Authority

Consultants

VHB

Acronyms

4 E's	Engineering, Education, Enforcement, Emergency Medical Services
AG	Attorney General
BAC	Blood Alcohol Concentration
CAV	Connected and Autonomous Vehicles
DDACTS	Data-Driven Approaches to Crime and Traffic Safety
DUI	Driving Under the Influence
EMS	Emergency Medical Services
FARS	Fatality Analysis Reporting System
FHWA	Federal Highway Administration
GDL	Graduated Driver Licensing
HRRR	High Risk Rural Roads
HSIP	Highway Safety Improvement Program
MAP-21	Moving Ahead for Progress in the 21st Century
MMUCC	Model Minimum Uniform Crash Criteria
NHTSA	National Highway Traffic Safety Administration
RIDOT	Rhode Island Department of Transportation
RI*STARS	Rhode Island Strategically Targeted Affordable Roadway Solutions
ROR	Run-off-the-Road
SAFETEA-LU	Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users
SHSP	Strategic Highway Safety Plan
TREDS	Teen Re-education for Driving Safer
TZD	Toward Zero Deaths
USDOT	United States Department of Transportation



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Executive Summary

The Rhode Island Strategic Highway Safety Plan (SHSP) is a five-year transportation safety plan developed by the Rhode Island Department of Transportation (RIDOT) in partnership with local, State, and federal organizations and other key safety stakeholders. The passage of the federal Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU) Act in 2005 required each State to develop and implement a SHSP. Additional requirements established in the Moving Ahead for Progress in the 21st Century (MAP-21) Act include the update of the SHSP every five years.

The SHSP encompasses all public roads including State and local roads. The SHSP uses data-driven analysis to identify a State's safety needs, set goals for reducing fatalities and injuries, and allocate investments in safety projects and programs in support of the State's Highway Safety Improvement Program (HSIP). The SHSP employs the 4E's of safety: Engineering, Education, Enforcement, and Emergency Medical Services.

The last Rhode Island SHSP was developed in 2012 and updated in 2014. The 2012 plan identified six areas of emphasis for highway safety, with two more emphasis areas added in the 2014 update. The SHSP set goals for reducing fatalities and serious injuries on Rhode Island roadways for the next five years. The 2012 SHSP set a goal of reducing fatalities and serious injuries by half, or a 3.2 percent annual reduction, by 2030.

Since the development of the last SHSP in 2012, the annual number of fatalities on Rhode Island roadways dropped from 64 in 2012 to a low of 45 in 2015. In 2015, the National Highway Traffic Safety Administration (NHTSA) reported a nationwide increase in traffic fatalities. Rhode Island experienced this increase in 2016. The fluctuation in the number

of fatalities means we need to remain proactive to maintain a downward trend in these numbers.

RIDOT initiated an update of the Rhode Island SHSP in 2016. The update process featured the continued collaboration between Rhode Island safety stakeholders. This collaboration included the sharing of traffic safety information and best practices with public and private safety partner organizations across the State. Over the course of 2016 and 2017, these stakeholders met to review crash data and the strategies and status of the 2012 plan. They also revisited existing emphasis areas, safety targets and performance measures, progress made, and areas for improvement. This review of information led to the reorganization of Rhode Island's SHSP into ten emphasis areas.

The 2017 Rhode Island SHSP includes brief summaries of each of the ten emphasis areas, showing background information on the issue, relevant statistics, and strategies for reducing fatalities and serious injuries moving forward. Strategies included in each emphasis area are arranged under the objectives of leadership, criminal justice system, prevention, treatment, evaluation, and infrastructure.

Rhode Island, through its SHSP, is committed to making its roadways safer for all users.



Vision

Rhode Island will be the safest State in the nation for all surface transportation users.

Mission Statement

Implement a collaborative process to reduce fatalities and serious injuries and ensure the safety of all surface transportation users.

Goal

Rhode Island continues to move “Toward Zero Deaths” and halving serious injuries by 2027.

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



Trends

According to federal regulations, the SHSP process must adopt performance-based goals that are consistent with established Federal Highway Administration (FHWA) guidelines and coordinated with other highway safety initiatives in the State. With these general parameters as a guiding principle, each State has the flexibility to set the goals and objectives as appropriate for its unique circumstances. In the 2012 SHSP, these goals were based on the overall performance of the Statewide road system, as well as the emphasis areas identified in that document. The guiding principle of the Plan was “Toward Zero Deaths” (TZD), with the interim, performance-based goal of halving annual road fatalities and serious injuries by 2030. In practice, that goal translated to the measurable objectives of reducing fatalities and serious injuries by 3.2 percent annually.

To build upon the previous work in the field of highway safety and the history of success by all stakeholders in the SHSP process, this Plan sets objectives for five performance metrics as required by federal safety performance rulemaking. For each of the following five metrics, Rhode Island is setting a target of a 3 percent annual decline:

Fatalities

Fatality Rate
(per 100 million vehicle miles traveled)

Serious Injuries

Serious Injury Rate
(per 100 million vehicle miles traveled)

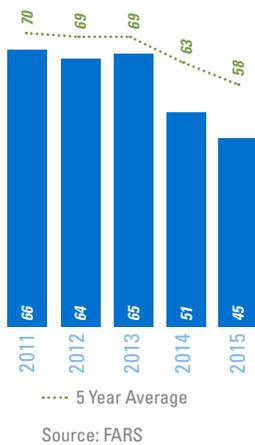
Non-Motorized Fatalities & Serious Injuries

This target acknowledges the steady pace of progress made in the realm of highway safety in the State, as well as the fact that marginal success will be even more difficult as fewer and fewer persons are harmed on Rhode Island roads. This rate also continues the vision outlined by Toward Zero Deaths, and will help reach the previous SHSP’s interim goal of halving fatalities and serious injuries by 2030.

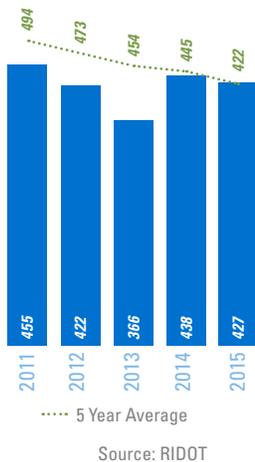
Since the development of the 2012 SHSP, Rhode Island made progress in realizing these objectives while working toward the goal of TZD. Typically, a five-year rolling average is used to track the progress of these performance metrics. This method helps smooth out yearly fluctuations in traffic-related injuries that may vary widely, but would not likely reflect a significant change in the safety of the State’s roadway system.

Since 2011, the five-year rolling average of traffic-related fatalities in Rhode Island declined 4.5% annually. The same measure of serious injuries has declined 3.9% per year.

Fatalities



Serious Injuries





Source: RI DMV

Impaired Driving

Between 2011 - 2015

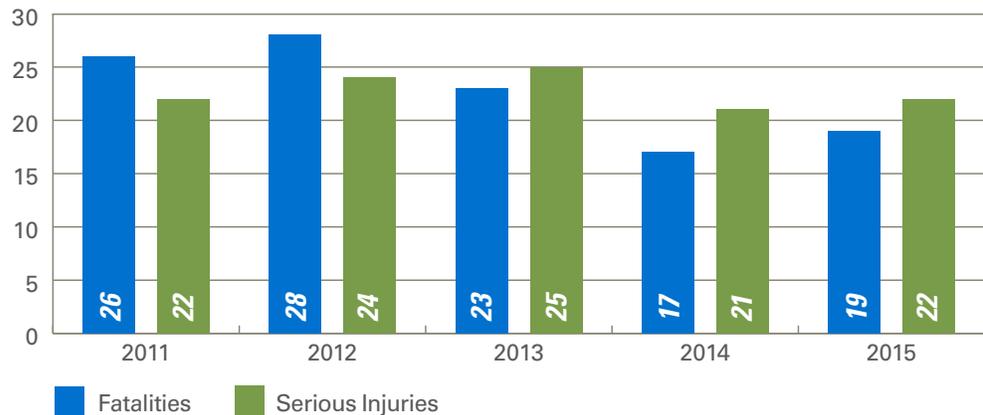
39%

of roadway fatalities involved alcohol

Source: FARS/RIDOT

Impaired driving crashes occur when a roadway user—driver, pedestrian, bicyclist, motorcycle—is impaired by alcohol, drugs, or prescription medication. In Rhode Island, it is a crime to drive with a blood alcohol concentration (BAC) at or above .08. As BAC increases, the user can experience a decline in reaction time and muscle control, reduced concentration and perception, and lack of judgment—all of which are critical to safety on the roadway. Impaired driving is a multifaceted social issue that involves multiple areas, including engineering, education, enforcement, and emergency medical services.

Impaired Driving Fatal and Serious Injuries



Source: FARS/RIDOT

Strategies & Action Items



Leadership

Develop an Impaired Driving and Drugged Driving Plan and update it on a regular basis.

- › Provide partners with NHTSA Communications Calendar and updates.
- › Establish periodic reviews quarterly.
- › Update the ID plan as needed.
- › Develop Quarterly Report to report status of plan and any available evaluation data.
- › Monitor drugged driving initiatives in other States.

Establish an Impaired and Drugged Driving Commission.

- › Define participants, roles, and responsibilities of Commission members.
- › Invite TSRP to be active member.
- › Meet with Traffic Safety Resource Prosecutor.
- › Discuss trainings/prosecution.
- › Comprehensively review DUI statute.
- › Create a review committee to review the Impaired Driving Statute.

Recruit active involvement of State agency directors, local representatives, and business leaders.

- › Develop a Statement for partnership agreements including permissions to use partners' logos.
- › Establish formal liaison relationships.
- › Obtain RI Hospitality Association's membership lists.
- › Review policy with partnering with liquor distributors.
- › Conduct Statewide Responsible Beverage Service training.
- › Develop training model (lunch n learn) to educate leader staff.
- › Recruit alternative driving leaders.
- › Reach out to ride providers.

- › Develop a RI safe rides app that enables users to obtain coupons.
- › Develop collateral materials for distribution (social media, posters, handouts).
- › Train staff on ID and provide certification.
- › Sync involvement with specific events.

Create joint media efforts between other State agencies and businesses.

- › Review existing efforts.
- › Create standardized and branded messaging across all venues.
- › Develop collateral materials for distribution (social media, posters, handouts).
- › Create standardized and branded messaging across all agencies.



Criminal Justice System

Explore legislation to strengthen impaired driving laws and the enforcement of these laws.

- › Discuss sobriety checkpoints with Chief Justice of RI Supreme Court as well as other State Court Leaders including RI Federal State Attorney Peter Nerohna and RI's Attorney General Peter Kilmartin.
- › Implement sobriety checkpoints.
- › Educate law enforcement about how to properly conduct sobriety checkpoints.
- › Educate media about how sobriety checkpoints are conducted.
- › Expand look-back period to 10-years.
- › Obtain data from Community College of Rhode Island on recidivism rates.
- › Resubmit briefing papers internally to leadership.
- › Implement administrative license revocation.
- › Enhance DUI statute regarding Child Endangerment to change from misdemeanor to felony.
- › Enhance ignition interlock statute to reflect NHTSA standards.
- › Establish 24-7 Monitoring alcohol program. The 24/7 Sobriety Program provides unprecedented levels of supervision for first-time DUI offenders with a BAC of at least .17 and repeat offenders. The program stresses separating the offender from alcohol as a method of rehabilitating drunk drivers and changing behaviors.
- › Educate judiciary as discretionary treatment tool.
- › Obtain buy-in from Department of Corrections for monitoring purposes.

Establish training for law enforcement and officers of the court on best practices for impaired and drugged driving policies.

- › Develop and conduct training for prosecution on "how to testify".
- › Develop and conduct training for law enforcement on best practices for enforcement of impaired and drugged driving laws.
- › Create standardized and branded messaging across all departments.
- › Conduct training for judges and prosecutors on testing, evidence, prosecution to limit plea agreements.

Review practices of attorneys serving on impaired driving cases.

- › Prohibit the practice of attorneys serving as both prosecuting solicitors and defense attorneys.
- › Mandate that all impaired driving cases go to attorney general vs. local solicitors.
- › Conduct surveys for all municipalities
- › Conduct training.



Prevention & Treatment

Conduct Public Training.

- › Educate all drivers how to ID impaired people/drivers.
- › Educate public on prevention.
- › Conduct Wet labs.

Identify legislative actions to prevent driving impairment.

- › Review and enhance Social Host Laws.
- › Conduct an analysis of the relationship between tax, price, sales and consumption in RI to understand the recent dramatic change in apparent consumption and determine the potential impact of sustaining recent temporary tax increases.
- › Review and propose changes to excise or floor taxes.

Develop advertising that is unique to Rhode Island.

- › Develop collateral materials for distribution (social media, posters, handouts).
- › Use Master Price Agreement Contractor/Internal RIDOT communication.

Identify legislative actions to address treatment of substance abusers.

- › Amend DUI Law to require mandatory assessment of the offenders' degree of drug/alcohol problem.
- › Develop mandatory DUI classes for any changing of DUI charge (i.e. pleas).
- › Create effective DUI offender tracking system Statewide.
- › Develop a DUI tracking system that is available to all those who interact with impaired drivers so that a driver can be tracked from arrest through adjudication to post-adjudication treatment and compliance.

Identify training opportunities to educate key stakeholders on treatment options.

- › Develop training for judiciary on treatment issues.
- › Identify training for other stakeholders.

Provide recommendations on how DUI and drugs are handled by the court system.

- › Review the DUI court structure and how drugged driving are handled by the courts.



Evaluation

Obtain data on dispositions of arrests for DUI and Refusal, calculate conviction rate and compare rates of Attorney General's Office vs. Municipal Solicitors.

- › Obtain data and analyze.

Obtain number of interlocks installed monthly and annually.

- › Obtain data and analyze.

Conduct Data Driven Approach to Crime and Traffic Safety (DDACTS) training for all law enforcement.

- › Train in house staff.

Implement mandatory evaluation for all OHS supported sub-recipients.

- › Obtain data and analyze.
- › Provide evaluation training for sub-recipients.



Occupant Protection

Between 2011 - 2015

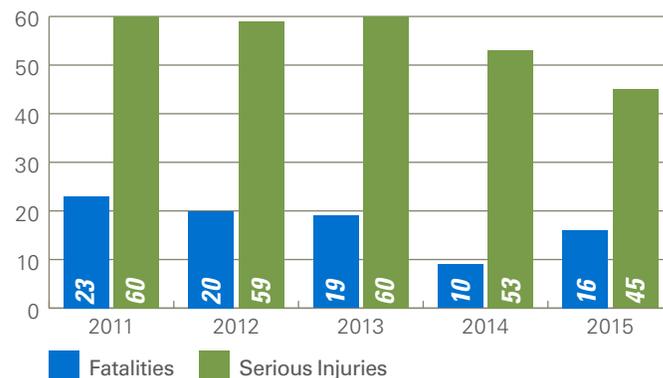
30%

of all fatalities were unbelted

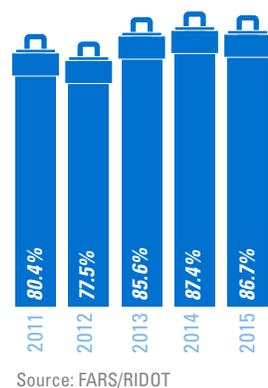
Source: FARS/RIDOT

Wearing a seatbelt is the first line of defense in the event of a collision and is one of the most effective ways to diminish the severity of collisions when they occur. Rhode Island's primary seat belt law came into effect on June 30, 2011. The law requires a motor vehicle operator and any passengers to be properly wearing a safety belt and/or shoulder harness system. The law also addresses proper child restraint and child passenger safety. There is an overall trend of increasing seat belt usage since 2011; however, the usage rate was lower in 2015—the latest year of available data—than the year before.

Unbelted Occupant Fatal and Serious Injuries



Seatbelt Usage Rate



Strategies & Action Items



Leadership

Establish an Occupant Protection Task Force to engage leadership from various agencies on occupant protection issues.

- › Hold quarterly meetings in person or by phone to discuss emerging Occupant Protection issues.
- › Develop briefing materials for leadership.
- › Identify funding opportunities to fund initiatives such as car seat purchases.

Staff key occupant protection program positions

- › Identify needed positions.



Criminal Justice System

Continue sustained high visibility enforcement of occupant protection laws.

- › Conduct Click-it-or-Ticket campaigns.

Develop an occupant protection enforcement work plan.

- › Identify elements of the plan, including community oriented policing, intervention model, DDACTS.

Assess the quality of occupant protection enforcement efforts.

- › Develop a survey to evaluate professional discretion and decision-making.

Provide continuing education efforts for law enforcement.

- › Develop a roll call training video to improve enforcement techniques and reporting of restraint use information.

Explore regulations to increase restraint use.

- › Develop regulations that require employees and contractors at all levels of government to wear seat belts when traveling on official business.
- › Enhance graduated licensing laws.



Prevention & Treatment

Support education and outreach to provide information concerning occupant protection laws.

- › Conduct outreach campaigns using appropriate media to target high-risk audiences.
- › Develop fact sheets to highlight laws, consequences and economic impact of not buckling up.
- › Advertise enforcement mobilizations.
- › Develop a communications campaign.

Establish employer and fleet programs to increase seat belt use.

- › Recruit participating agencies.



Evaluation

Improve the quality of occupant restraint use data.

- › Partner with the Department of Health and hospitals to gain a better understanding of injury outcomes following crashes.
- › Improve the collection of observation surveys (i.e. rear seat, nighttime).
- › Improve citation data.
- › Develop a citation tracking system.
- › Evaluate the burden of motor vehicle crashes.

Use data to target occupant protection efforts.

- › Undertake an analysis of crash and hospital data to identify locations and populations where seat belt usage is below the State average and the experience of the victims.
- › Partner with institutions to conduct data analysis.



Source: RIDOT

Intersection and Run-Off-the-Road Crashes

Between 2011 - 2015

22%

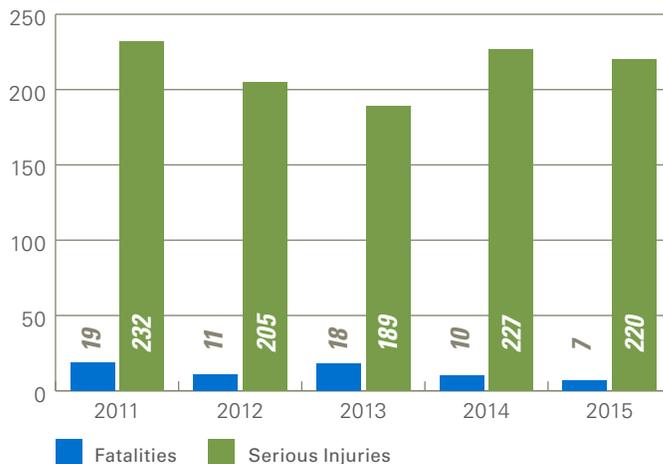
of all fatalities occurred at intersections

Source: FARS/RIDOT

Intersections

Intersections are essential to a transportation network. They provide users the necessary junctions to change roads or continue straight to reach their destination. They can vary widely in characteristics, such as urban or rural area type, signal or stop sign controlled, the number of lanes, and the types of users – passenger cars, trucks, buses, pedestrians, bicyclists, and motorcycles. Yet, because intersections are locations where roadways converge there is an inherent safety risk. Between 2011 and 2015, almost one-fourth (22 percent) of the traffic fatalities in Rhode Island were intersection-related.

Intersection Fatalities and Serious Injuries



Source: FARS/RIDOT



Between 2011 - 2015

Run-Off-the-Road

58%

of all fatalities involved a run-off-the-road crash

Source: FARS/RIDOT

A Run-Off-the-Road (ROR) crash occurs when a vehicle leaves the travel lane and enters a shoulder or roadside environment or even goes into the opposite lane. There can be various factors that contribute to a ROR crash, including roadway characteristics like horizontal curvature and poor pavement friction. Environmental factors like rain, snow, or ice can obstruct a driver's view of the roadway and reduce the driver's ability to control their vehicle, and certain driver behaviors (e.g., impaired driving, distracted driving, and speeding) can negatively impact a driver's ability to stay on the roadway. ROR crashes make up 58 percent of fatalities in Rhode Island.

Run-off-the-road Fatalities and Serious Injuries



Source: FARS/RIDOT

Strategies & Action Items



Leadership

Engage leadership from various agencies to monitor the activities of Infrastructure elements of the SHSP.

- › Hold quarterly meetings in person or by phone.

- › Develop briefing materials for leadership.
- › Identify funding for local safety improvements (non-State) to include signing, striping, road diets, and other safety countermeasures.



Criminal Justice System

Explore the installation of automated speed enforcement in work zones.

- › Review installations in other jurisdictions.



Prevention & Treatment

Support education and outreach to educate roadway users.

- › Conduct outreach campaigns using appropriate media.
- › Develop fact sheets to highlight laws, consequences and economic impacts.
- › Coordinate with local jurisdictions on efforts to improve intersection and roadway safety.

- › Conduct workshops to teach local jurisdictions about proven countermeasures, low-cost safety improvements, Manual on Uniform Traffic Control Devices, etc.
- › Develop materials to educate the traveling public on new traffic control devices.
- › Work with Department of Motor Vehicles to develop materials and/or update driver education standards to reflect current infrastructure and traffic control devices.



Evaluation

Continue to identify locations and implement countermeasures with the greatest potential for safety improvement using systemic and predictive methods.

- › Target locations exhibiting the greatest potential for improvement through enhanced data collection and analysis.

Evaluate implemented countermeasures.

- › Develop crash modification factors and safety performance functions based on the evaluation outcomes.

Work with the RIDOT communications office to promote success stories from safety infrastructure improvements.

- › Identify key stories.



Infrastructure

Enhance roadway design protocol to promote safe transportation practices among all users.

- › Continue the implementation of a Complete Streets policy to improve vulnerable user access and mobility.
- › Monitor new infrastructure best practices to improve roadway safety.
- › Conduct training for highway engineers and maintenance personnel.

Implement Safety Corridor Program which addresses crashes on high risk facilities such as two lane and multi lane corridors with high travel speeds, numerous conflict points, and little to no recovery room from roadside hazards.

- › Consider implementation of a lane reduction (road diet) on all multi-lane full access roadways.
- › Consider installation of enhanced pedestrian crossing technologies, such as rapid Rectangular Rapid Flash Beacon, pedestrian hybrid beacons, and median refuge islands, are considered at all unsignalized crosswalks on multi-lane full access roadways.
- › Implement systemic type improvements such as rumble strips, flush medians, left-turn lanes, guardrail improvements, and roadside hazard elimination.

Implement Localized Bottleneck Mitigation Program which reviews top bottlenecks in the State and weighed ranking of vehicle delay and crashes.

- › Implement restriping and minor widening improvements to merge areas and lane drops along limited access facilities.
- › Consider alternative intersections or conversion to grade separated interchanges at signalized intersections along high speed facilities such as Route 4 and Route 146.

- › Implement Wrong Way Driving Mitigation Program which systematically reviews all off-ramps to mitigate wrong way driving maneuvers.
- › Install wrong way driving detection systems at high risk ramps.
- › Install geometric modifications to high-risk off-ramps configurations.

Implement Roadway Departure Mitigation Program which addresses facility types with high risk for roadway departure.

- › Implement enhancements to assist on warning vehicles approaching horizontal curves including curve delineation, high friction surface treatments, and roadside hazard removal.
- › Implement enhancements to help vehicles stay on the roadway including rumble strips and roadside delineation.
- › Implement enhancements to mitigate crash severity due to an errant vehicle departing the roadway including roadside hazard shielding or removal.
- › Implement high friction surface treatment on segments with historical high frequency of roadway departure crashes in wet conditions.
- › Perform Statewide review of all existing guardrail to ensure conformity to the latest testing standards.
- › Systematic installation of median protection on all high-speed facilities with raised medians of 70 feet or less.
- › Consider connected vehicles technologies, such as the roadside units, to assist in keeping vehicles in their respective lane.
- › Consider robust pavement marking plan on all eligible roadways to ensure vehicles with lane departure detection can read the pavement markings.



Implement Vulnerable Road User Program which address cluster crash areas and high risk facilities.

- › Consider installation of enhanced pedestrian crossing technologies, such as Rectangular Rapid Flash Beacon, pedestrian hybrid beacons, and median refuge islands, are considered at all unsignalized crosswalks on multi-lane full access roadways.
- › Implement systemic crash countermeasures at pedestrian and bicycle crash clusters. Improvements include enhanced striping, curb extensions, lead pedestrian intervals, extended pedestrian pushbutton, countdown timers, and exclusive pedestrian phasing.
- › Consider implementation of a lane reduction (road diet) on all multi-lane full access roadways which can allow for bicycle lanes.
- › Consider connected vehicles technologies, such as the signal phasing and timing challenge (SPAT) to inform both motorists and pedestrians of potential conflicts within the crosswalk.

Implement Intersection/Driveway Angle Crash Mitigation Program which reviews signalized and unsignalized intersections and driveways for historical and systemic risk of angle/broadside crashes.

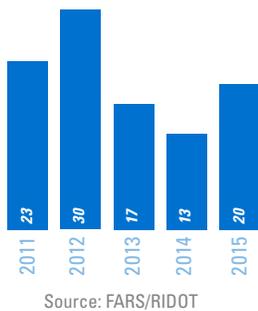
- › Consider protected phasing or flashing yellow arrow at all signalized intersections where feasible.
- › Review and implement yellow and red clearance timings at all signalized intersections.
- › Enhance signing and sight distance at unsignalized intersections. Also consider advanced technologies to warn mainline vehicles on side street vehicles waiting to enter roadway.
- › Consider implementation of a lane reduction (road diet) on all multi-lane full access roadways. This allows for slower speeds and larger gaps for traffic entering the mainline.
- › Consider converting intersections to roundabouts where feasible.
- › Consider red light running technology.
- › Consider connected vehicles technologies, such as the signal phasing and timing challenge (SPAT) to inform both motorists and pedestrians of signal timings data and potential conflicts.



Source: RIDOT

Speeding

Speed-related Fatalities



Source: FARS/RIDOT

A speed-related crash occurs when a driver is driving too fast for road or weather conditions or exceeding the posted speed limit. Although the exact relationship between speed, crash frequency, and crash severity is complicated, many studies have consistently concluded that as vehicle speeds increase, crash frequency and crash severity also increase. When traveling at higher speeds, the distance it takes to bring the vehicle to a stop increases and there is less time to react to a dangerous situation. The weight of the entities involved in a collision plays a large role in the severity of the crash, and often it is the vulnerable users of the roadway—pedestrians, bicyclists, motorcyclists—that are worse off in the event of a crash with a motor vehicle. Studies have shown that the average pedestrian has a 93-percent chance of survival when hit by a car traveling at 20 mph a 69-percent chance of survival at 35 mph. At 45 mph and above, it is more likely for any person being hit to be killed than to survive¹.

1

AAA Foundation for Safety. Impact Speed and Pedestrian's Risk of Severe Injury or Death. September 2011.



Source: RIDOT

Strategies & Action Items



Leadership

Establish a Speeding Task Force to engage leadership from various agencies.

- › Hold quarterly meetings in person or by phone.

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



Criminal Justice System

Enforce speeding laws to act as a deterrent to keep people from engaging in speeding and aggressive driving behaviors.

- › Identify locations where speeding crashes are a problem.
- › Expand existing and planned high-visibility enforcement programs and speed enforcement patrols.

Provide continuing education efforts for law enforcement.

- › Develop a roll call training video to improve enforcement and data collection techniques.
- › Conduct a Speed Management Workshop for law enforcement officers.



Prevention & Treatment

Support education and outreach to promote safer driving.

- › Conduct outreach campaigns using appropriate media to target high-risk audiences.
- › Develop fact sheets to highlight laws, consequences and economic impacts.

- › Advertise enforcement mobilizations.
- › Encourage insurance companies to offer incentives for policyholders who participate in a program that tracks an individual's speed and other driver behaviors.



Evaluation

Explore new data collection techniques to improve the quality and quantity of data.

- › Develop a method to collect speed-related data from crash reconstruction reports on fatal and serious injury crashes and forward data to RIDOT.
- › Conduct a speed data workshop and obtain information from surrounding States on their policies regarding the collection of speed-related serious injury data.

Use data to target speeding initiatives

- › Partner with institutions to conduct data analysis.
- › Develop policies on the collection of speed-related serious injury data, including a review of current State policies, laws, and regulations with assistance from the Rhode Island Police Chiefs' Association's Traffic Safety Committee.



Infrastructure

Enhance roadway design to promote safe transportation practices among all users.

- › Implement a Complete Streets policy where appropriate to improve vulnerable user access and mobility.
- › Monitor new infrastructure best practices to address speeding.
- › Conduct training for highway engineers and maintenance personnel.
- › Review appropriateness of speed limits and placement of speed limit signs Statewide.
- › Explore the use of variable speed limits.



Source: RIDOT

Vulnerable Road Users

Between 2011 - 2015

57%

of motorcycle fatalities did not use a helmet

78%

of bicyclists who were killed or seriously injured were male

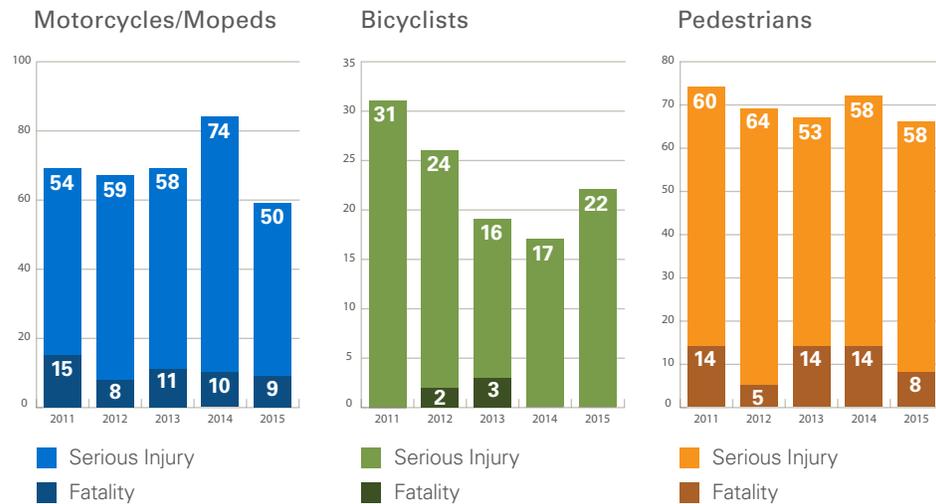
32%

of pedestrian fatalities are 65 years of age or above

Source: FARS/RIDOT

Pedestrians, bicyclists, and motorcyclists travel on, along, and across the roadway, but have less protection than motorized vehicles. Walking and bicycling have great health and environmental benefits, which can make them attractive alternatives to driving; however, pedestrians and bicyclists are also more susceptible to serious injuries and fatalities when involved in a collision with a motor vehicle. Any unsafe behavior performed by either vehicles and/or the vulnerable users—like inattention, speeding, alcohol or drug impairment—can amplify the potential risk of a collision and injury severity. Motorcyclists are also considered vulnerable users as they operate at the same speeds and in the same lanes as other motorized vehicles, but without the same degree of protection.

Vulnerable Road Users Fatalities and Serious Injuries



Source: FARS/RIDOT



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.

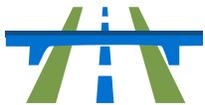
- › Establish a speakers' bureau comprised of victims who can provide testimonials.
- › Find ways to highlight the advantages of wearing colorful, reflective clothing while riding or walking.
- › Expand and enhance the motorcycle awareness campaign.
- › Re-establish highway safety curriculum for K-12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



Source: RIDOT

Aging Road Users

Between 2011 - 2015

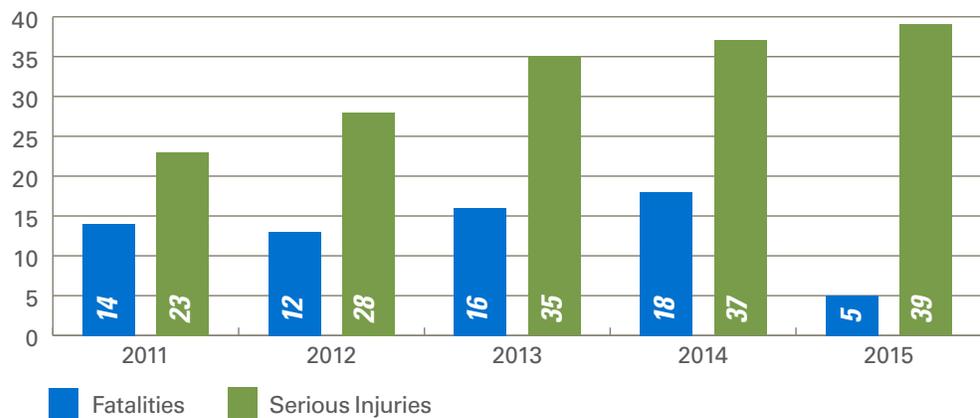
22%

of fatalities involved a driver aged 65 or above.

Source: FARS/RIDOT

As people age, eyesight, flexibility, physical strength, and reaction time are affected and can influence driving ability. These factors can contribute to an increased crash risk and susceptibility to injury when involved in a collision. However, the degree to which individuals are affected will vary, and some users may still have the same ability and level of comfort driving beyond age 65. It is important to develop strategies that enable and encourage the aging road user to travel safely.

Fatalities in Crashes Involving Older Drivers



Source: FARS/RIDOT

Strategies & Action Items



Leadership

Develop and update regularly an Aging Road Users Plan.

- › Use the SHSP strategies and action items as a starting point for an Aging Road User Plan.
- › Update the Aging Road Users Plan on a regular basis.

Establish an Aging Road User Commission (or Task Force).

- › Hold quarterly meetings in person or by phone to discuss emerging Aging Road User issues.
- › Monitor Aging Road User issues, current events, and best practices nationally.



Criminal Justice System

Enable physicians, law enforcement, family or friends to report at-risk drivers.

- › Change the State mechanism for reporting an aging driver from a written letter to a paper/electronic form.



Prevention & Treatment

Support education and outreach to older drivers to provide information concerning alternative transportation options.

- › Host older driver workshops at locations across the State.
- › Conduct outreach campaigns using local newspapers and other media to target the aging road user audience.

Enhance aging driver re-education opportunities.

- › Revisit the resources such as the AAA Older Driver handbook and revise as needed.
- › Provide education surrounding distracted driving and specifically cell phone use.



Evaluation

Use data to target the needs of aging road users.

- › Identify hot-spots for aging road user safety deficiencies across all modes.



Infrastructure

Support revisions to design criteria for the transportation network to assist the aging road user.

- › Identify design best practices for the aging road user.

Implement improvements in all HSIP projects (as listed in the Intersection and Run-off-the-road Emphasis Area section) as recommended in the Handbook for Designing Roadways for the Aging Population issued by FHWA.

- › Install recessed pavement markers in high speed highways to enhance delineation between lanes and edge of lane.
- › Install roadside delineators on limited access highways and ramps to enhance roadside delineation (especially at night).
- › Enhance horizontal curves with delineation.
- › Install larger text street signage and larger STOP/YIELD signs.
- › Implementing longer pedestrian crossing times at crosswalks with high older user frequency.
- › Implement “Road Diets” to lessen speeds to allow larger gaps at unsignalized intersections.

- › Implement Wrong Way Driving countermeasures such as larger, enhanced static signage and detection systems at high risk ramps.
- › Implement High Friction Surface Treatments at curves and high speed intersections (to reduce required reaction time).



Source: RIDOT

Young Drivers

Young drivers, those age 16 to 20, are commonly involved in a disproportionate number of crashes compared to other age groups with more years of driving experience. These trends are attributed to a lack of experience on the part of young drivers, insufficient education, and a propensity to engage in risky behavior behind the wheel such as distracted driving, impaired driving, or aggressive driving.

Between 2011 and 2015, young driver crash fatalities involved:

40%

speeding

37%

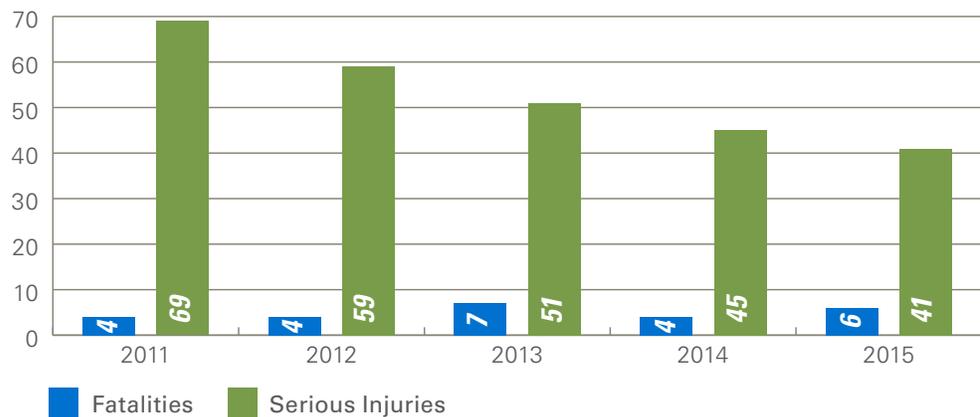
unrestrained occupant

23%

driver impairment

Source: FARS/RIDOT

Young Drivers Involved in Fatal and Serious Injury Crashes



Source: FARS/RIDOT



Strategies & Action Items



Leadership

Develop and update Younger Driver Plan on a regular basis so that is a “real-time living document”

- › Provide partners with NHTSA Communications Calendar and updates.
- › Establish periodic reviews quarterly.
- › Update the Younger Driver plan as needed.
- › Develop Quarterly Report to report status of plan and any available evaluation data.

Develop partnerships with youth organizations (e.g. boy scouts, girl scouts, Students Against Destructive Decisions), local coalitions, advocacy groups, and faith-based groups.

- › Host younger driver outreach events and use partners to help plan events and disseminate information.



Criminal Justice System

Expand provisions of the Expand provisions of Graduated Driver Licensing.

- › Review the Rhode Island GDL laws compared to other States and national guidelines to propose meaningful changes to the Rhode Island law.
- › Expand GDL nighttime driving restriction hours.
- › Expand GDL age requirements up to age 20.

Advocate for Rhode Island to adopt a decal program to enable law enforcement to better identify drivers operating with a GDL and properly enforce laws.

- › Review practices in other jurisdictions.

Adopt standards for driving schools to ensure consistent and appropriate education for drivers.

- › Review NHTSA standards and modify to fit needs in Rhode Island, if necessary.
- › Promote driving school standards legislation.



Prevention & Treatment

Improve driver education/preparedness requirements and guidelines.

- › Research and review guidelines in other States and recommendations from NHTSA.
- › Update the Rhode Island driver education curriculum based on findings from other States and NHTSA.
- › Expand the number of hours of classroom education, behind-the-wheel observation, and behind-the-wheel driving required of new drivers.
- › Adopt testing and education requirements for all new drivers regardless of age.
- › Adopt parents' education requirements for parents of younger drivers.

Encourage driver re-education.

- › Propose incentive programs that would encourage young drivers to participate in re-education after age 18 if licensed before age 18.

Promote use of technology by younger drivers to monitor driving trends and incentivize through insurance programs.

- › Review initiatives in other jurisdictions.

Develop instructional modules to standardize education on key topics and improve outreach effectiveness.

- › Pilot this approach using the "What to do at a Traffic Stop" pamphlet.
- › Identify other topics areas where this approach would be applicable.

Use web-based and social media platforms to reach the younger driver audience.

- › Convert existing materials to web-based or social media content to reach the younger driver.
- › Focus on videos and digital media in the development of new materials.
- › Integrate social media into driver education to connect more directly to younger drivers.

Promote use of technology to monitor drivers with a history of violations to discourage future violations.

- › Require monitoring devices for Younger Drivers after one violation.



Evaluation

Utilize existing driver education and licensing data to determine the effectiveness of driver education and preparedness programs.

- › Obtain existing data and analyze.
- › Identify data gaps and methods for addressing data gaps moving forward.

Utilize existing driving programs, such as Treads, to collect data on driving violations and recidivism.

- › Obtain existing data and analyze.
- › Identify data gaps and include on course questionnaires to address gaps.



Source: RIDOT

Distracted Driving

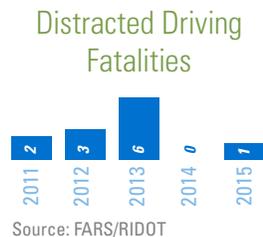
Distracted driving occurs when a driver’s attention is occupied by another task while driving. This can take the form of various actions, both physically and mentally. The rapid growth in technology has made cellphones widely available and affordable to consumers and a recent study found that 95 percent of adults in the U.S. own a cellphone and 77 percent own a smartphone¹. Using cellphones to send text messages, watch videos, and navigate are usually associated with distracted driving; however, activities like eating, talking to passengers, adjusting audio or climate controls, taking one’s mind off driving, and being drowsy or fatigued are also sources of distraction. It is often difficult to measure the extent of this issue because law enforcement officers use witness accounts or the admission of drivers to determine if distraction was a contributing factor to a crash.

95%

adults in US own a cell phone in 2016

77%

adults in US own a smartphone in 2016



1

Pew Research Center. <http://www.pewinternet.org/fact-sheet/mobile/>

Strategies & Action Items



Leadership

Create a uniform message discouraging distracted driving and distracted while walking.

- › Define 'distraction'.
- › Form partnerships with other agencies to highlight the dangers of distracted road users.
- › Adopt a single, uniform campaign or voice across agencies to perform distracted driving outreach.

Establish a Distracted Driving Task Force.

- › Hold quarterly meetings of the distracted driving task force.



Criminal Justice System

Conduct distracted driving enforcement campaigns in hot-spots.

- › Identify hot-spots for distracted driving.
- › Explore best practices for distracted driving enforcement.
- › Pilot distracted driving enforcement campaigns.

Explore revisions to the existing distracted driving laws and penalties.

- › Review laws and penalties in other jurisdictions.



Prevention & Treatment

Spread awareness of the dangers of distracted driving through outreach campaigns.

- › Use highway message signs to remind drivers of the dangers of distracted driving.
- › Create media content to distribute to localities which can be further distributed publicly.
- › Target outreach campaigns to hot-spots for distracted driving and distracted while walking.

Offer distracted driving workshops for law enforcement to better understand current distracted driving laws.

- › Expand the current distracted driving course for law enforcement to offer more frequently.

Work with local businesses to encourage work place policies that discourage distracted driving during work related business

- › Identify participating agencies.

Provide legislative updates to the judiciary to ensure consistent understanding of State laws for all parties

- › Develop memos to update judiciary.

Continue to support the incorporation of distracted driving education in drivers' education coursework.

- › Identify material for inclusion in coursework and road tests.

Drive now. Call Chat Email Text later.



Evaluation

Enhance procedures for completing crash reports to help identify distracted driving crashes.

- › Review practices in other jurisdictions.

Improve the capture of distracted driving violations on the crash form.

- › Review practices in other jurisdictions.

Use surrogates such as run-off-the-road and rear end type collisions to identify distracted driving crashes.

- › Review practices in other jurisdictions.



Infrastructure

Provide the infrastructure and messaging appropriate to discourage distracted driving.

- › Enhance messaging for rest areas to encourage this space for cell phone use.
- › Designate safe cell phone use pull off areas along roadways.
- › Phase out the use of wayfinding signage that encourages drivers to call a phone number to report incidents.

Identify and implement advanced technologies, techniques, and hardware to collect, and manage crash data.

- › Monitor emerging techniques from other jurisdictions.



Source: RIDOT

Traffic Incident Management

20%
crashes in US result from a previous crash

Source: USDOT

Traffic incidents are an important concern in Rhode Island because they can result in a safety issue and a cause of congestion delays. According to the National Traffic Incident Management Coalition, one-quarter of all congestion on roadways in the United States is caused by traffic incidents. It is estimated 20 percent of all crashes nationwide result from a previous crash.

Strategies & Action Items



Leadership

Implement a Traffic Incident Management Plan.

- › Identify key milestones.
- › Update the plan periodically.

Establish or enhance local incident management teams

- › Identify partners and coalitions.
- › Establish regularly scheduled meetings.



Criminal Justice System

Promote and maintain work zone and incident management safety and accountability.

- › Identify opportunities to increase enforcement activity in work zones and in the management of incidents.
- › Identify State-of-the-art techniques to enhance enforcement activities.



Prevention & Treatment

Conduct training on present policies, procedures and laws.

- › Identify appropriate training mechanisms for each of the topics of Traffic Incident Management, work zones, Open Roads, decision point locations, and quick lane clearance.
- › Identify and invite audiences to participate in the training.



Evaluation

Build or expand performance metrics to measure the effectiveness of work zone and traffic incident management initiatives.

- › Identify appropriate performance metrics, including road clearance time, secondary collision statistics.



Infrastructure

Implement State-of-the-art technologies that improve the design and management of work zones and traffic incidents.

- › Monitor technological developments in other jurisdictions.

Improve data analysis of work zones and traffic incident design and implementation.

- › Identify data needs and work with Traffic Research to improve data quality.
- › Provide information to the motoring public well in advance of scheduled maintenance and work projects.

Rhode Island
is dedicated to
implementing
a Statewide
Traffic Incident
Management Plan
for scheduled
and unscheduled
incidents by
forming partners
and coalitions
throughout
the public and
private sectors.





Data

Rhode Island safety partners understand that having complete, accurate, and timely traffic safety data is a vital component of a highway safety program. Safety data can include roadway characteristics, traffic volumes, adjudication, healthcare, and crash data. This safety data can exist in various databases throughout the State; therefore, linking these databases—across jurisdictions and within agencies—is important for capturing the Statewide picture of roadway safety. An integrated system will allow Rhode Island to query all public roads in the State and better identify locations for improvement and projects for development. Improved data will also allow agencies to evaluate the safety effectiveness of projects after a several years of exposure. By improving the overall quality of the data and data management practices, the State will be able to make targeted investments in projects to reduce or prevent injuries and fatalities on the roadways.

Strategies & Action Items



Leadership

Improve inter-agency collaboration and data uniformity.

- › Conduct regular meetings of the Traffic Records Coordinating Committee (TRCC)
- › Form partnerships with other agencies working with traffic crash data.
- › Establish a common dictionary to define roadway and traffic data elements for the State.

Improve timeliness, accuracy, and completeness of traffic records data collection, analysis processes, accessibility, distribution, and systems.

- › Review practices in other jurisdictions.



Criminal Justice System

Propose revisions to Rhode Island Crash Report to enhance the report while satisfying the Model Minimum Uniform Crash Criteria (MMUCC).

- › Improve Rhode Island's ranking nationally across several quality crash report categories.
- › Improve the data dictionary for the crash data system.



Prevention & Treatment

Provide training to law enforcement to improve crash data collection and analysis.

- › Identify training needs.

Reach out to localities to support transportation safety data and analytical efforts.

- › Continued to use Data-Driven Approaches to Crime and Traffic Safety (DDACTS) to provide incident mapping to localities to help guide local safety efforts.

Promote the importance of high quality traffic and crash data in enhance transportation safety.

- › Make presentations to leadership at agencies Statewide on the importance of high quality traffic and crash data.



Evaluation

Evaluate data systems annually to identify possible deficiencies or data needs.

- › Develop an annual needs memo.

Improve injury data.

- › Partner with health agencies and hospitals to gain a better understanding of injury outcomes following crashes.
- › Re-establish the Crash Outcome Data Evaluation Systems database linking medical data with crashes.
- › Include ambulance and police e-citation records with crash data.

Continue to use and build upon the Crash Records Management Systems.

- › Provide data support to localities.
- › Provide guidance to localities building local crash data management systems.

Improve the completeness and accuracy of pedestrian and bicycle crash data.

- › Explore best practices for collecting pedestrian and bicycle crash data.
- › Apply proven methods for pedestrian and bicycle crash data collection.



Infrastructure

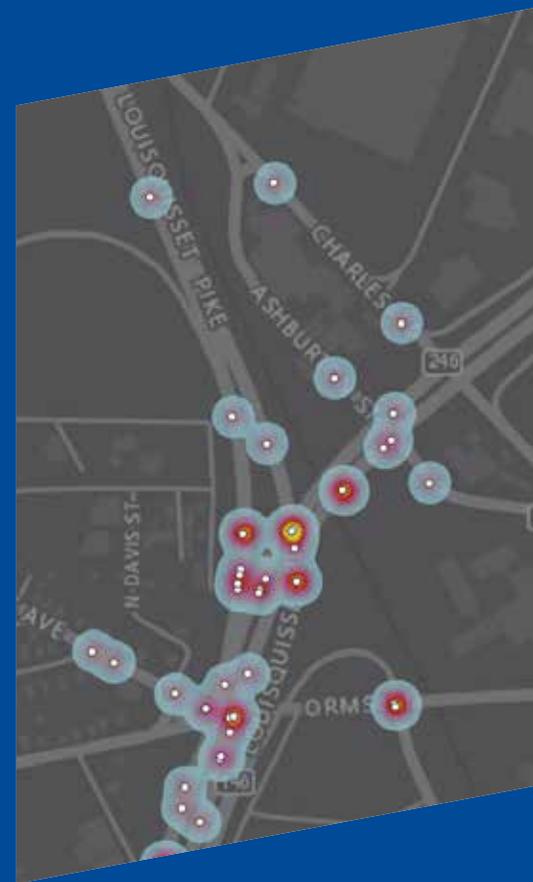
Continue to make data-driven decisions surrounding traffic safety.

- › Use a Data Integration Plan to integrate various traffic records databases.
- › Enhance the ability to combine crash data with traffic volume and roadway features to perform network screening.

Identify and implement advanced technologies, techniques, and hardware to collect, and manage crash data.

- › Monitor emerging techniques from other jurisdictions.

By improving the overall quality of the data and data management practices, the State will be able to make targeted investments in projects to reduce or prevent injuries and fatalities on the roadways.





Source: RIDOT

Implementation and Evaluation

The strategies for the Rhode Island SHSP were developed through the collaborative efforts of a diverse group of safety partners in Rhode Island, representing State, local, and Federal agencies and related stakeholders, many of which are identified in the acknowledgements section of this Plan.

The success of this plan will require coordinated implementation and continued collaboration. The enthusiasm shared by safety partners across Rhode Island during the development of the SHSP is needed during the implementation of the strategies to achieve the goals set for the five years of the SHSP.

RIDOT will provide leadership for this group and will work with FHWA to revisit Statewide crash performance metrics on a regular basis as required by FHWA.

RIDOT's leadership of the plan also includes working with the Steering Committee and the individual Emphasis Area teams to evaluate the impact of the SHSP. This evaluation will consider both monitoring the progress in undertaking implementation for each of the Emphasis Areas and evaluating the impact of these strategies on fatalities and serious injuries.

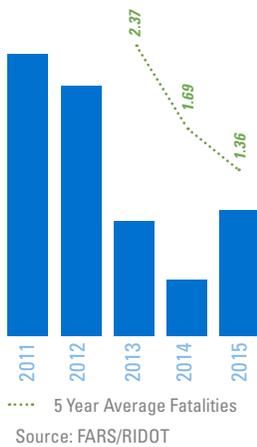
As strategies are implemented and actions are undertaken, SHSP stakeholders will update the Emphasis Area action plans to denote progress and modify actions as needed.



Source: RIDOT

SHSP Special Rules

High Risk Rural Roads: Fatality Rate
FATALITIES/100 MILLION VMT



Special rules introduced in MAP-21, and continued with the FAST Act, direct funding and the development of strategies to mitigate specific safety needs that apply to High Risk Rural Roads (HRRR) and older driver and pedestrian fatal and serious injuries.

HRRR Special Rule

This rule takes effect if “the fatality rate on rural roads in a State increases over the most recent 2-year period for which data are available.” If applicable, a State must obligate an amount equal to 200 percent of its FY2009 high risk rural roads set-aside funds to HRRR. Transportation legislation, 23 U.S.C. 148(a)(1), defines HRRR as “any roadway functionally classified as rural major or minor collector or a rural local road with significant safety risks.”

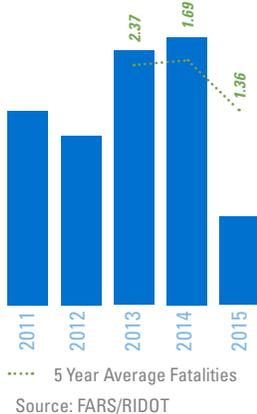
Rhode Island’s method of evaluation for HRRRs aligns with the current legislation and defines ‘significant safety risks’ as having “a crash rate per mile above the average crash rate per mile of similar functional classifications.” A review of the data confirms that the HRRR special rule does not currently apply to Rhode Island. This metric will continue to be monitored to assure rule compliance.

Older Drivers and Pedestrians Special Rule

This rule takes effect if “the rate of traffic fatalities and serious injuries for drivers and pedestrians 65 years of age and older in a State increases during the most recent 2-year period for which data is available.” Per capita rates are based on 5-year averages and are rounded to the nearest tenth to determine if the rule applies. If applicable, a State must include strategies to address the increases in the rates, considering recommendations in the FHWA publication, ‘Handbook for Designing Roadways for the Aging Population’ in the next update of the SHSP.

A review of the data confirms that the older driver and pedestrian special rule does not currently apply to Rhode Island. This metric will continue to be monitored annually to assure compliance with the rule.

Per Capita Fatality and Serious Injury Rate for Older Drivers and Pedestrians





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